

ZU - UNIVERSITY OF ZILINA  
The Faculty of Operation and Economics of Transport and Communications,  
Department of Economics

## **GLOBALIZATION AND ITS SOCIO-ECONOMIC CONSEQUENCES**

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## STARTUPS IMPORTANCE FOR THE SUCCESSFUL DEVELOPMENT OF THE SLOVAK ECONOMY

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**Abstract.** Development of small and medium-sized enterprises has been located in the sphere of professional and scientific interests of the author already for a long time. Prospects for successful development of small businesses largely depend on their ability to create quickly awareness about their work and to become therefore the global players. These are mainly young innovative companies, which are an important factor for the development of a market economy. Startups as rapidly growing young companies with high innovation potential represent a long-term trend abroad, when after their establishment they must quickly think about international, global business environment. In Slovakia they present the segment only in its beginning, and therefore they begin to receive more attention from the state and investors. Support has not only to help new entrepreneurs to start a business model, to overcome the difficult period for the first few months, but also to maintain obtaining partners for financing. Company bringing innovative and new ideas that will stand out from the current business environment to the nature of the product, thus quickly be able to establish the international environment. The paper generalized practically all the available material for researched topic. Based on the analysis, the authors came to the conclusion that the development of startups will have an important role for the development of the Slovak economy and its economic recovery now and in the near future.

**Keywords:** startups, globalization, innovation, support, investors

**JEL Classification:** M13, O31, F21, L25

### 1. Introduction

The global economic crisis that began in the 2008-2009 period and is still not overcome, was the cause of financial difficulties, not only for large companies but also for medium and especially for small companies in different areas of the business sector (Szkuráková et al., 2015). Among the measures to increase the efficiency of economic activity of enterprises includes measures related to improvement of management, including the use of deep knowledge (The system of profound knowledge). (Malá et al., 2015). In our opinion, the key to sustainable economic growth and increased competitiveness is to increase productivity based on innovation, which is widely supported by the activities of startups (Dent et al., 2016, Loučanová et al., 2015, Euchner & Ries, 2013). According to S. Blanka (2013) startups fundamentally change all aspects of economic activity of enterprises. These are new companies and companies that are in the initial stages of creating a business plan. In general, this word means a new

project, an idea of a new product, service or application, that any company want to put and apply into practice (Janošková & Král, 2015). In the scientific literature, the term startup is often equated with small startups. Some experts Senor and Singer (2009) define startup as a small companies developing new innovation which have considerable commercial potential, and innovation are not necessarily associated with new technology. This may include new business model that applies the startup, which is applied by startup. The emphasis is on innovation, which does not consist in the development of new technology. The company may combine available technologies and have an important competitive advantage over other companies. Key aspects of startups are product, innovation and doubts. The novelty of the product or service differs startup from the classic companies. Classical companies are less focused on uncovering new resources and value for customers, in order to identify what impact it will have on their business. Starting a business based on the takeover of an existing business plan may be quite attractive investment, but surely it can not be called Startup. The success of this business depends solely on performance, while the degree of risk in the classic business is easily quantifiable and risk can be insured (Deng & Greg, 2015). Startup is a unique type of business where risk is not known because it can not be modeled.

## 2. Startups in economy

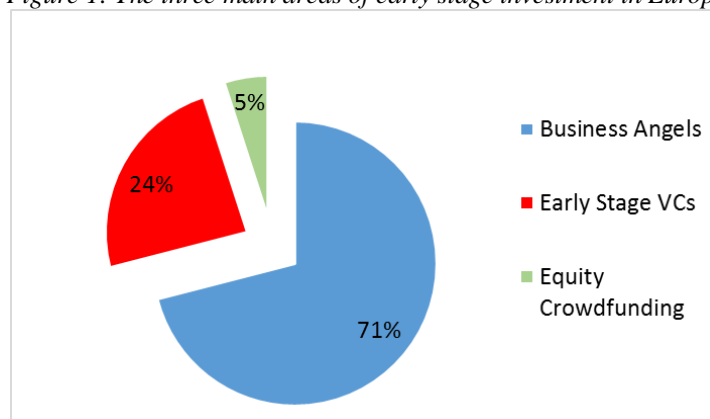
To find a single definition of startups is quite difficult, although several definitions are known. Widespread definition is the definition of Steve Blank (2010), according to which *"startup is a temporary organization designed to search for repeatable and scalable business model."* From the nature of definition implies that main ambition of startup is finding a business model enabling to increase its market share without increase the size of company's team. Organisational structure of startup is temporary and can be changed. Classic firms are characterized by relatively stable organizational structure. Definition by Eric Ries (2011) which is affected by S. Blank is also widely used, *"Startup is a human institution created to bring a new product or service in conditions of extreme uncertainty"*. Startup in this case is not only about products, technological innovations or about great ideas, it's something bigger. Other definition of startup is formulated by British programmer and co-founder of the American accelerator YCombinator Paul Graham (2012), according to him the essential elements of the definition of startup is the rapid growth: *"Startup is a company created with the purpose of the rapid growth. Startup may not be the new company, it does not have to develop a new technology, it does not acquire risk investment. The key parameter is the rapid growth."*

Startups have high growth potential, generally based on innovative products and are attractive option for young people compared to traditional work in the company for last few years. Although in many cases they can go through the whole life cycle without significant support, ecosystem can really help them to their growth. Startup's ecosystem, also referred as a business ecosystem, is a voluntary cooperation of several entities in a given geographical space for purposes of mutual assistance in further growth. Majority of startups, especially technological startups, must very soon think about international, even global business environment.

The volume of investments of business angels in Europe reached 6,1 billions of eur according to the organization EBAN (The European Trade Association for Business Angels, Seeds Funds, and Early Stage Market Players) in 2015. This number represents an increase of 8.3% compared with year 2013 (EBAN, 2016). Up to about 90% of invested companies at the time the investment was located in the early stages of business. It is important indicator. Total

volume of investments in companies at an early stage of business from business angels is 71%. Venture capital funds invest in companies at an early stage was 24% of investments and crowdfunding proportion accounted for 5% (Fig. 1).

*Figure 1: The three main areas of early stage investment in Europe*



*Source: European Early Stage Market Statistics (June 2016)*

There is bigger popularity of startups in Slovakia in last years. Startups receive attention from the media, support from state and non-state actors and there is also infrastructure needed to support this form of business. As well as abroad, the first technology companies in Slovakia began to be formed in the nineties with the advent of the Internet boom, when the nature of their business was to create technology products based on Internet software that offers them the opportunity to expand to other countries. Historically, the most famous Slovak startup story is antivirus company ESET, although at that time startups were not calling startups because this categorization came later. Other Slovakian successful startups were Zoznam.sk Azet.sk, Profesia.sk or electronic bookstore Martinus.sk. In 2010, StartupCamp was organised in Slovakia. It was meeting of entrepreneurs, programmers, but also people opening brainstorm and bring new ideas. This initiative continues today. Since 2012, the activities of startups accelerated. There is constant arrival of new startups across Slovakia, and there are also first co-working spaces, which offer space for new startups.

Importance of startups to social well-being is so obvious that public, especially state economic policy has to react on this phenomenon and its trend. The Ministry of Finance has prepared in cooperation with the Ministry of Economy, Ministry of Education, Slovak Business Agency and other representatives of the Slovak startups ecosystem concepts for support of startups and development this ecosystem. (2015). It is a comprehensive set of measures, the initiative has broad-spectrum space. It wants to solve the problems of financing business startups through supporting young entrepreneurs during their university studies, exchange of information within the V4 (Gregova & Dengov, 2015). Government departments cooperated with private sector organizations active in the field of business startups. According to the document, startup is a private capitol company based in Slovakia, which is younger than 36 months, was established in order to create innovative products or services. It is micro, small or medium enterprises and the majority of the voting rights belong to natural persons who are its founders. Innovativeness of product or service will be judged according to the method of creation and quality of this product or service. In other words, the quality of the product or its production will have to be at least at European level. The granting of support is decided by a committee composed of representatives of public authorities, particularly the Ministry of Finance and Ministry of Economy and specialized institutions, particularly Slovak Business

Agency. The aim of the concept is, according to published information, the establishment of a corrective environment without unnecessary obstacles to the formation and operation of startups in the market. There should be developed infrastructure and support services for people interested in business and startup teams. The strategic aim is also to finance Death Valley, when most businesses fail. (Cressy, 1996).

Act on support of Small and Medium Enterprises (approved 17.08.2016) created by Ministry of Economy determines a definition of startup. There was no Act on support of Small and Medium Enterprises before. The new law will help to break down administrative burdens, will help to promote innovation and internationalization of small and medium enterprises. The draft law regulates the scope of the Ministry of Economy in providing support to the SME sector, defines areas and forms of support. In the draft of state budget for next year Ministry of Economy will allocate more than € 94 million on the development of industry and business in Slovakia. It includes also support for these innovative enterprises. A large part of the money should come from EU funds. Young people would receive financial injections to mentoring, for trainers and coaches to help them in starting a business. Companies younger than three years can also ask for support if they want to go to an international conference or startup event.

It is estimated that there is currently only 600 startups companies in Slovakia. For example, there is more than 15000 startup companies in UK. In the last three years, there were twice as many, but most startups did not survive the initial stage of transformation to business entity. According to the latest survey created by KPMG more than 55 % of startups generate a turnover of 55 percent of Slovak startups generate turnover. More than three quarters of projects have at least one employee and the average team size is five members. 56% of them increased their number of employees in the last year and more than 90% of startups plan to increase the number of employees in the next year. The new legislation is intended to improve access to capital for startups through a new form of companies. Simplified form of limited company will be able to issue shares, namely shares and corporate bonds with different rights, which is intended to facilitate entry of investors in startups as well as their potential output.

Startup ecosystem is more powerful in last period. There is a quite a strong interest in startups made by young educated people. Startups as small and medium-sized enterprises must be encouraged. Forms of support of startups can be different depends according to their inclusion in the classification of types of startups. Supports can be financial and non-financial.

### **3. Financing of startups**

Startup ecosystem is an environment in which startups operate. It influenced by many factors, from the legislation, angel investors, education programs, to market, and the economy itself. Startups are in the early stages at high risk of failure, so the system must be set up to help them survive Death Valley. There are many forms of support of startups. Financial support and non-financial support in the form of incubators and accelerators. Financial support is the most important. Startups fail in more than 90% of cases, because they do not know well to estimate the market potential, customers of a product are not interested, they do not know how to sell their product, or they spend all money from investors before the product is completed. (Cressy, 1996). Too many startups are sold by their founders, even earlier before he could transform it into a larger company and employ more people. Searching, planning and effective use of external sources of financing is therefore a key role in the drafting of the business model.

Financial security of startups relate to innovative financial mechanisms of ensure of global changes in the world economy (Saxunová, 2015). At the beginning startups as well as small businesses need capital. Banks often refuse to provide them capital because they are notices as risky clients. Even the best business idea will remain only on paper if the author of the idea does not have enough money for its implementation. The most recent is this problem for startups situated in the early stages of development with short or no financial history.

Other financing options is a investment of venture capital, which have high growth potential for startups. It also represents an appreciation of the invested capital to investors. Provider requirements are not the only factors having an impact on investment and bank loans. But also preference of founders of startups who might not be willing to give up his ownership interest in favor of investor of risk capital. Generally, there are private investors, known as business angels who invest their own capital without intermediaries. Other investors include the venture capital funds - VC funds who invest funds from the primary investors - banks, pension funds, etc. Business angels have less money than VC funds.

Crowdfunding as another option is among the newly emerging alternative forms of financing. It connects directly the people who have available funds and want to invest or lend it to those who need funds to finance a particular project (Dushnitsky et al., 2016). Sliacky P. analysed benefits of crowdfunding. Crowdfunding campaigns collect small individual contributions from a large number of people, mostly through the Internet. Projects are usually designed to finance relatively smaller targets, but there are exceptions. One of the many definitions of crowdfunding is determined by team of authors Belleflamme Lambert and Schwienbacher (2013): „*Crowdfunding involves an open call, essentially through the Internet, for the provision of financial resources either in form of donation or in exchange for some form of reward and/or voting rights.*“ On the one hand, there is a person (owner of project) with good idea, who prepare crowdfunding campaign. On the other hand there is a "crowd" of people who give money to realize this idea – Contributors. There are also many scientists and academics in the field of economics, financing, sociology, and media who are interested in this topic. The great advantage of this form of fundraising is that the whole process is carried out through the platform via the Internet. The most famous platforms are Kickstarter.com and Indiegogo.com. There are more than 1000 platforms nowadays. These platforms serve like intermediary between startups and investors (Buyesere et al., 2012).

There are also disadvantages of this form of funding, such as the loss of know-how when the company or investor with enough money and experience can copy an idea or product and start to produce and sell under its own brand. Also marketing campaign to popularize the project is expensive. Crowdfunding is yet underdeveloped in Slovakia. For this reason Slovak startups use to give their projects to foreign platforms. (Almeida et al., 2003).

According to European Commission, startups bring to the economy the innovations and vitality, new products, or services that will quickly find its place in the market, new techniques and processes that contribute to the creation of new jobs in the region, support the development of the knowledge economy, linking science, research and innovations with business practice and increase the competitiveness of economies. It is therefore necessary to supporting their growth and to create the right conditions and environment. Each startup begins with an idea that will be transformed into a business model, but the development of startup from the idea to the situation when it becomes a full-valued business, is a unique way. The level of investments of business angels in Europe reached as already mentioned in the 2015 volume of 6.1 billion euros, which is 8.3% more than in 2013. The European angel investment community consists

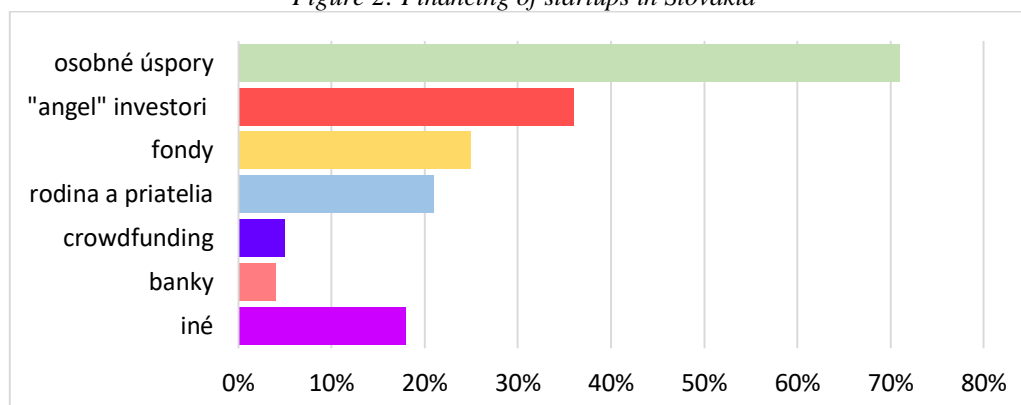
of about 303,650 angel investors. Total investment in start-up companies in the market is estimated at € 8.6 billion. This year the investment gained up to 33,430 young companies. An important indicator is especially that 87% of invested companies at the time of the investment were in the early stages of business. Total volume of investments in companies at an early stage of business from business angels amounted until 73%. Venture capital funds invested in companies at an early stage, 26% of the investment and share crowdfunding was 1% (European Early Stage Market Statistics, 2016).

In terms of sectors at European level IT technologies dominate with a share of 32% of investments. Followed by biotechnology with a share of 10% and mobile technologies also with a share of 10%. Aggregated statistics for Slovakia do not exist, but according to the data of the first complex of informal investors who are Business Angels Club Slovakia (KPAS) the situation in Slovakia is similar. Business Angels Club Slovakia is the first complex of business angels in Slovak Republic, which was established in 2011 with the mission to promote the development of innovation and entrepreneurship upcoming generation of entrepreneurs. KPAS brings together prominent, mainly Slovak entrepreneurs and managers who are interested in investing their expertise, time and money into startups. On business angels club from its inception in 2011 until the end of 2014 approached 828 candidates. From them 97 underwent a qualitative filter and presented their project to investors, some of the projects has been tightened to successful investment, for which both sides - particular investors with startups agreed. Realized investments were mainly from the area of the information technologies, energy and services.

The company KPMG is known in Slovakia since 1991 and offers a wide range of services in the area of audit, tax and advisory services. KMPG also conducts a survey in the startups which are interesting and current. For example, the third edition of the survey Startup Ecosystem Survey 2016 follows the successful mapping of this dynamic industry from 2014. The purpose of the survey is a detailed analysis of the Slovak startup environment in terms of the five target groups: startups, investors, representatives of the private and public sectors and also in terms of entities supporting startup ecosystem. Last year increased the number of employees by 56 percent of respondents, and within one year we plan to increase the number of employees to 90 percent of startups. Nearly three quarters startupists are less than 35 years old, the average age reaches 32 to 33 years. The founders or co-founders of companies are figuring in 25 percent of women and the proportion from year to year increases slightly. About 85 percent startupists attained tertiary education or professional (vocational) qualifications. About 37 percent have managerial and economic education, IT departments studied a quarter of the survey participants. Startupists show an interest in increasing the external financing. What concerns the investment is decided by the people and the product. Most of trust raises the finished prototype phase or the first sales.

One of the most interesting information in the Annual Report 2016 KPMG is that in the coming twelve months for Slovak startups will be available the amount more than 30 million euros from investors. The positive trend has already indicated last year when its financial presence has increased 77 percent investors. To young innovative companies put more than one million euros, four out of ten respondents. Although investors have positive mood, monetary support is provided only less than half of Slovak startups. Compared to 2014, there was a slight increase of 5 percent. While 87 percent startups representatives presented the plan to raise external funding.

Figure 2: Financing of startups in Slovakia

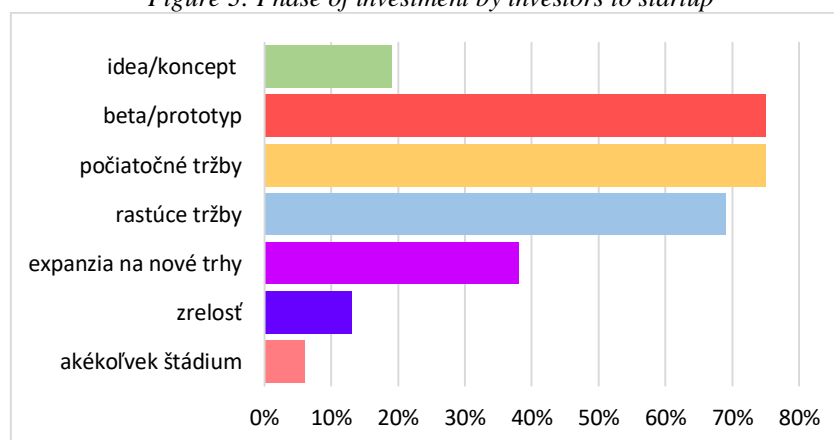


Source: <https://home.kpmg.com/>

Investors composition is as follows: 72 % represents venture capital, 17 % are business angels and 11 % are banks. As the reports says, we can see the efforts of venture capital and angel small funds for initial and smaller seed investment. Compared to last year more than 77% of investors increased the amount of their investment. Respondents (investors) also indicated that they have invested in more than 60 new startups in the last 12 months. Up to 40% of the respondents invested in Slovak startups more than one million euros and 8% of these investments reached 7 to 10 millions of euros. Up to a quarter of investors decided for seed investments in the range of 50,000 to 100,000 euros. On the opposite side there is 13% of investors who invested 2-3 million of euros and 7%, who invested 5 million of euros or more to Slovak startups. On the information received we can say that startups should be focused on investors who focus on the same or similar area. Invest prospects for next year look very positive.

According to the data obtained, more than 30 million euros will be invested in Slovak startups in next 12 months. 31% of investors reported that they will invest 5 million of euros or more in Slovak startups. Investors use to evaluate startups in Slovakia similarly to abroad. Quality of the team is the most important investment criterion for investors. In second place finished product characteristics, followed by commercial potential.

Figure 3: Phase of investment by investors to startup



Source: <https://home.kpmg.com/>

The number of startups in Slovakia does not reach investor demand not in one area. Area, which is between the Slovak startups represented the most numerous are business services, which devotes more than 23% of startups and 25% of investors are interested in this area.



However, if the company wants to have a high investment security for their startup, it is recommended to focus on the FinTech area which is worldwide requested. Only 7% of Slovak startups interested in this area. while almost three quarters of investors are real interested in this area. Investors are willing to invest in our country also in startups at early stages. Only 5% of investors are ready to invest in the idea. But more than 75% of investors are ready to invest in beta version / prototype. This stage contains more than 42% of the investment.

Only 31 percent of Slovak starters devotes all their time to their project (startup). Up to 60 percent of representatives of young innovative firms are engaged in not related activities. Following research by KPMG, specifically, 15 % of them have full-time jobs. Total startup market in Slovakia are currently 60 projects. The analysis shows that many projects want to focus on sales growth (84 percent) and product development (75 percent) in the near future. 55 % of them generate profit. More than three quarters of projects have at least one employee and the average team size is five members. 56% of them increased their number of employees in the last year and more than 90% of startups plan to increase the number of employees in the next year. Almost three quarters of starters are younger than 35 years. Average age reaches 32 to 33 years. One quarter of the founders of startups are women. 85 % of starters have a university degree or professional qualifications. 37 percent of them have managerial and economic education. 25% of them studied IT education. Startups show interest in increasing external financing. The most important are team and product of startup. The most trusted period is phase of the prototype or phase of the first sales.

#### 4. Conclusion

Young innovative companies are seen as an important factor of economic development, including the ever-growing small open Slovak economy, which will depend on new technologies, changing its character. There is still just few companies, where is prepared team and good quality. That is why it is so important to support ecosystem and investor networks that are part of this ecosystem.

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## EUROPEAN INTEGRATION AND BREXIT: WHAT IS THE ATTITUDE OF YOUNG GENERATION TOWARDS EUROPEAN UNION IN SLOVAKIA?

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**Abstract.** European Union drives the globalization through open markets, common currency and free travel of European citizens. All these factors trigger the mixing of cultures creating a common European multicultural and international world. This European culture is enhanced by the cultures of all members of European Union. The young generation of European citizens, raised in this multicultural international environment, is enjoying a broad scale of possibilities and opportunities enabled through the European collaboration. Millennials are wiping out cultural prejudices by enjoying travelling, learning to know diverse cultures, nations and people across Europe. They depict the young generation with friends coming from various parts of Europe that will or has already entered workforce in this European Schengen area. This young generation was raised in belief of equality regardless race, gender, nation or age, that we all are Europeans, on joined European nation and together we can achieve more. Recently, one referendum in one of the members of this joined European nation is going to irreversibly change everything as the majority of voters decided to leave this common international and multicultural environment. This shocked everyone around the world. This paper aims to analyze the awareness of this young generation in Slovakia of the advantages and disadvantages of the membership in the European Union as these millennials represent European tomorrow. Based on a survey research, the viewpoint towards the increasing integration as well as the wishes of this young generation towards the future directions for the development of the European Union are formulated.

**Keywords:** globalization, integration, European Union, Millennials

**JEL Classification:** F00, F50, F60

### 1. Introduction

All nations within the European Union and the Schengen zone opened their borders to encourage free travelling and mutual trading pushing forward the globalization on that way. All the members of the Schengen zone decided to be committed to create “an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured” (EU Publications Office, 2010). Nowadays, the Schengen area represents a zone of passport-free movement across national borders. It allows individual free travel for holiday, study or work (Brady, 2012). Primarily intended to enable migration of workforce to the place of need, this freedom of movement now builds one of the core attribute of the international character of the

EU citizenship. (Atger, 2008). It is no longer rare for the young generation to participate in a student exchange programs and to spend part of the study abroad or to attend a foreign university abroad for the whole period of study. This free zone is even more important for the business world where it allows to commute to work across borders.

The young generation of millennials is further strongly influenced by the digital age driven by the development of the computers, information and communication technology (ICT) and the emergence of network technology. Compared with the past, when the knowledge was stored only in books collected at libraries or other for that purpose created places or in people's minds that were accessible rarely and even to only selected individuals, nowadays an immense volume of knowledge is stored in form of data spread over the internet and accessible to almost everyone at almost any time. ICT enabled the formation and sharing of knowledge at far distances in much greater extent than any other technology before (Dávideková & Hvorecký, 2016). ICT offers large spectrum of possibilities that changed the way we live, perceive and imagine and became a substantial part of our life (Dávideková et al, 2016). This infinite source of knowledge provided through the ICT is shaping the nature of millennials. However, ICT not conciliated only the knowledge acquired throughout history of mankind, but provided access to other individuals from around the world. Since then, no one is alone in his/her destiny, misery, sadness, fear or depression. There are so many other people across the globe that feel similar or the same that may understand the concerns and issues of the one seeking it. People can find and cultivate relationships by means of ICTs through the network (Moody, 2001).

Both the free movement in the virtual reality through the internet and the free travel in the physical reality enabled by the Schengen zone are driving the globalization that creates a multicultural and international world for this young generation called millennials (Howe & Strauss, 2009).

However, recently, in one of the member countries the citizens voted in a public referendum to leave the common conjugation of European countries and nations, the European Union (Goodwin & Heath, 2016). Now, the world as we know it will completely change affected by this decision. The freedom of movement, the focal feature of European citizenship, so many countries fought for, will get restricted – a shock for the young generation raised in the era of free movement. Millennials are trying to process this exogenous shock. This decision is being credited to the massive and excessive integration politics of the steady growing bureaucratic apparat of the European Commission, called Brussels bureaucrats too (Stevens & Stevens, 2001).

The Euroscepticism is rising in several countries where the fear for the same results in case of a public referendum are emerging (Weiss & Blockmans, 2016). However, the millennials, the young generation of the future, unequivocally voted for remaining in the one big European family (Marocchi, 2016), for the freedom of movement and the open market with a great pool of professional applications for their future life.

Some news on the internet reported that many people after the voting have searched for the meaning of the European Union assuming people were not aware of what they are voting for (Fung, 2014). However, some other sources have disconfirmed such fames (McGoogan, 2016). Such a behavior raises the question of awareness of the broad public about the activities of European Union and their impact on the well-being of all European citizens: How is the information campaign about the EU and its doing? How effective is the public dissemination of information about EU activities? Is the population aware of the actions of the EU commission

and its administration? What are the most essential impediments of the European Union? What stands in the focal interest of the young generation that the EU should solve?

This paper aims to analyze the awareness of young generation in Slovakia about the activities of the European Union; the advantages and disadvantages of the membership in this big European family as well as the choice of the majority of millennials whether to stay in this multicultural and multinational environment. Based on a survey research, the viewpoint towards the increasing integration as well as the wishes of young generation towards the future direction for the development of the European Union are formulated.

This paper is organized as follows: Section 2 describes used methodology and a sample of conducted research described in this paper. In Section 3 the findings and results are depicted followed by a corresponding discussion. Conclusion summarizes the research results, limitations of carried out research and proposes new areas suitable for future research endeavors.

## **2. Methodology and Sample**

The research is based on a survey case study. Respondents are representatives of the concerned young generation of millennials who is going to enter or has just entered the labor market, in other words, for this research paper we consider people studying at the university and preparing themselves for their future professional career. For this reason, the conducted research was narrowed to the students of management where the managerial position in a company depicts the decisive and leading position that shall decide about the future strategic direction for the people or business unit in his/her responsibility and competence (Dávideková et al., 2016).

The voluntary participating students were from the Faculty of Management, Comenius University in Bratislava as this university represents the most famous Slovak university that is ranked among the best universities of the world listed by QS World University Ranking (Top Universities, 2016). The students were selected from various study years to analyze the difference between first year students who have just entered the world of adults and students from higher study years who already have a concrete and tangible vision about their upcoming future professional path.

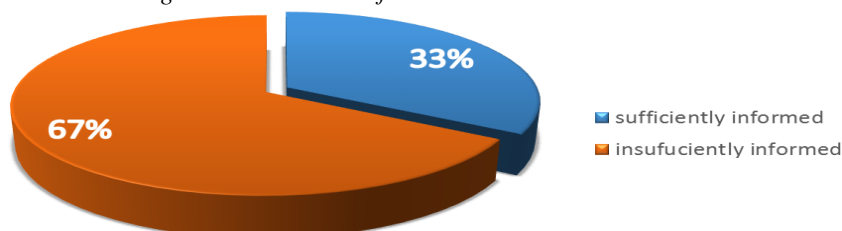
The number of students contributing to this survey is 100 participants. The questions included in the questionnaire were chosen to identify the awareness of the respondent about the activities of the EU, his/her attitude to the integration carried out by the European Union and the opinion of the contributor about it. Also the question about the position towards the membership in the EU is implemented. The survey also integrated open questions to identify the actions of the EU and the features of the European citizenship that are perceived as the most important advantages or disadvantages by the contributors. These questions were followed by the propositions of future directions for the European Union depicted by the respondents as the most essential matters and concerns of them.

The survey was conducted in paper form and manually processed into a suitable presentation form listed in the next section.

### 3. Findings and Discussion

The overall perception of “feeling informed” as well as “being aware” was very low (see fig. 1). 67% of contributors perceive themselves as insufficiently informed despite all the campaigns of the EU.

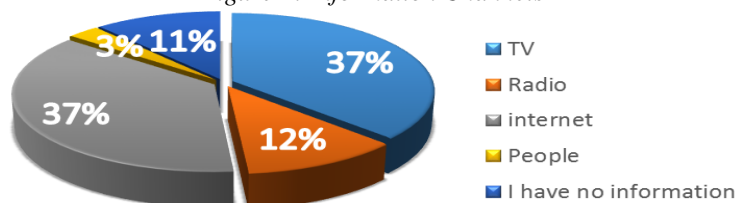
Figure 1: Perceived information and awareness state



Source: Survey

Most of the respondents build their opinion on information received from television and the internet as can be seen in fig. 2. Those distribution channels of marketing information are the most important dissemination mediums for the millennials. The authors consider the most important information stemming from this assessment the category of people who responded not having any information about the European Union, its membership and the advantages or disadvantages of it. This is in accordance with the public scientific knowledge about millennials behavior that highlights the importance of internet as a dissemination channel (Blackburn, 2011).

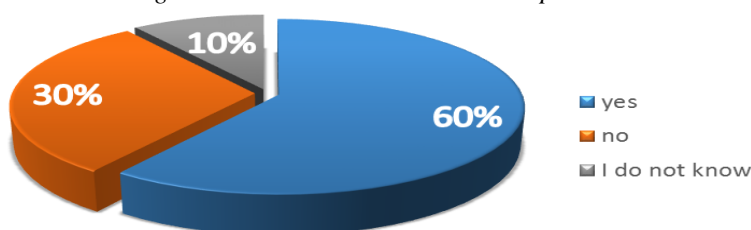
Figure 2: Information Channels



Source: Survey

The overall attitude towards the EU membership is positive (60%, see fig. 3), however, as it can be seen, the Euroscepticism is spread already in this young generation according to whose opinions the disadvantages outweigh the advantages (Soltes, 2015). Again, a very important category is the section of not decided respondents that is considered to build quite large quota of the sample (10%, see fig. 3).

Figure 3: Attitude towards membership in the EU



Source: Survey

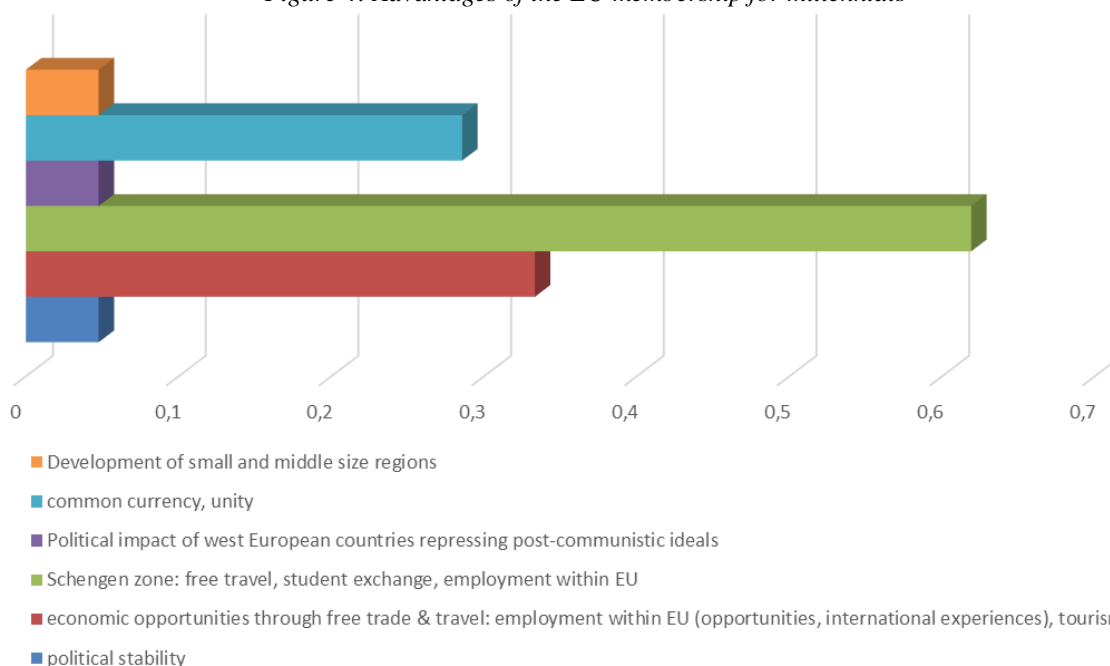
Millennials value the freedom of movement as the most essential and focal feature of European citizenship as shown in fig. 4 depicting answers of contributors in percentage. We show here six most frequent answers among respondents. The Schengen zone perceived by

millennials as the area of free travel including commuting to work and academic student exchange programs is ranked number one in the list of benefits. Therefore, this category is separated from the free trade as the young generation understands only freedom of movement under the term Schengen zone.

This core attribute of passport-free travel is further tightly connected to the second greatest advantage, namely the economic opportunities through free trade and transport of goods, services and products. Millennials perceive this as separate category connected to business world and professional career including commuting to work abroad, possibility to gain international experience in a multicultural and multinational environment. Further, the respondents connected these economic opportunities with tourism that creates new jobs and denotes income for travel and tourism industry including accommodation sector, hospitality sector, museums and galleries and other institutions.

Third, the focal characteristic of European membership in relation to the survey results is the common currency and unity as depicted in fig. 4. The common currency is a supportive factor for free movement and free trade within the area of European Union. Millennials are welcoming the simplification of transport and travel by removing the necessity of currency change, recalculation for the actual price assessment for a product or proposed vacancy payment, etc.

Figure 4: Advantages of the EU membership for millennials



Source: Survey

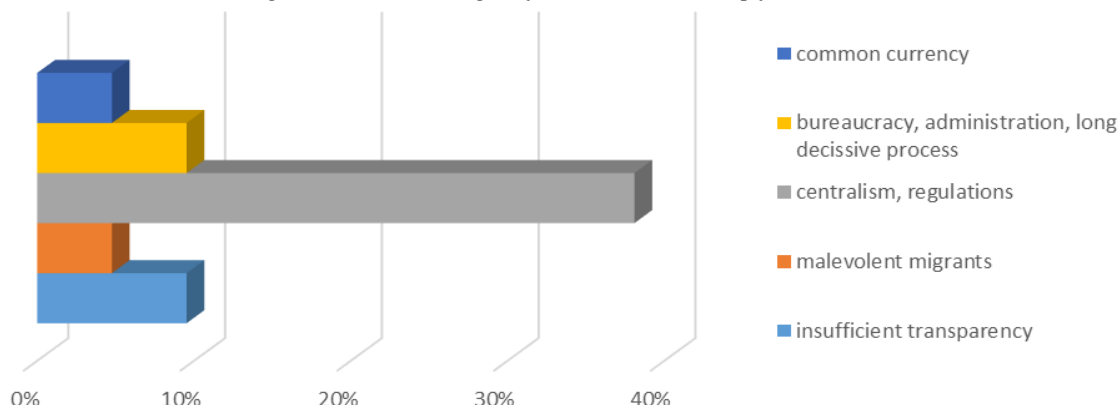
Millennials marked the centralism and centrally submitted regulations as the greatest disadvantage of the EU membership (see fig. 5). They perceive those regulations as forced intervention into the sovereignty of the member countries. Combining the results stemming from fig. 5 and tab. 1, the young generation wishes regulation policy of the European Commission to be in form of recommendations and demonstration of best practices, not in form of obligatory directives that must be incorporated into the country legislation.

According to the survey results (see fig. 5) the Brussel bureaucratic centralistic apparatus is negatively perceived as the commander center overfilled with huge overhead of clerks and parliamentarians paid from the EU budget that could be distributed to the regions of need



otherwise. Furthermore, the dissemination of information about the whole regulation process including what is submitted and in which form as insufficiently transparent and non-transparent. Respondents indicated to feel not informed about decisions of the EU parliament as well as about the regulation proposals in the preparatory phase. Today, in the digital era, it is no longer an expense of high cost to share the documents online through the internet making them accessible to everyone everywhere in the European Union. The young generation considers the use of this very efficient channel to be unsatisfactory deficient.

Figure 5: Disadvantages of the EU membership for millennials



Source: Survey

Many survey participants left out the question about future proposals of directions of development for the EU free. However, the contributors who provided their insights were equidistantly divided for the topics depicted in tab. 1. They consider the information and transparency aspect of the EU legislative process as the greatest impediment of current bureaucratic overhead. At the same time, millennials treasure the European security within Schengen zone as the focal value to protect and defend by all means (see tab. 1).

Table 1: Proposals of future directions for the EU legislative

Simpler access to the information about working in EU countries
Better migration policy
More strict external Schengen border control and defense against illegal migration
Higher Euro Fond efficiency, better redistribution
Cutting down the number of EU parliamentarians, clerks, etc.
Losing the strictness of regulations (avoiding useless and disadvantageous regulations)

Source: Survey

## 4. Conclusion

This paper has aimed to analyze the actual awareness of young generation about the EU citizenship. Based on a survey, the attitude of millennials towards the EU membership was identified including the enumeration of the attributes of EU citizenship as the most valued and perceived as essential feature by this young generation. Contributors also pinpointed the greatest impediments of current state of conditions showing the room for future improvement as well as proposing directions for next development and strategies of the EU.

The performed research included a sample of approximately 100 students of one particular faculty at a university, therefore, it would be interesting to carry out such a survey with a larger sample across study field, age, profession or place of living.

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## RESEARCH OF GLOBAL SERVICIZATION PROCESSES AND THEIR ROLE IN THE RUSSIAN ECONOMY

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**Abstract.** Contemporary trends in the global economy indicate the activation processes servicization economy, the dominance of service production over the production of material goods. The rapid development of the service sector is a prerequisite for sustainable innovative development of the state economy. The main goal of this paper is to study the services sector in the Russian economy: to identify the main trends and characteristics, problems and prospects, to evaluate the servicization processes influence on the dynamics of GDP, and the Russian economy as a whole. In this paper the authors have used a variety of theoretical and empirical research methods, economic and mathematical, economic and statistical methods. The authors analyzed the service industry in the Russian economy, identified the main trends and features servicization processes, problems and prospects of development. An international comparative analysis of the services sector was conducted. The authors evaluated servicization processes influence on the dynamics of GDP, and the Russian economy as a whole. A result of research the authors found the main trends in the service sector in the Russian economy, evaluated their impact on the industry, the GDP and the economy as a whole. This study has allowed identifying the major directions for further development of services sphere and prospects the servicization processes in Russia.

**Keywords:** global economy, servicization, services sector, GDP, Russian economy

**JEL Classification:** O140, L80, E190

### 1. Introduction

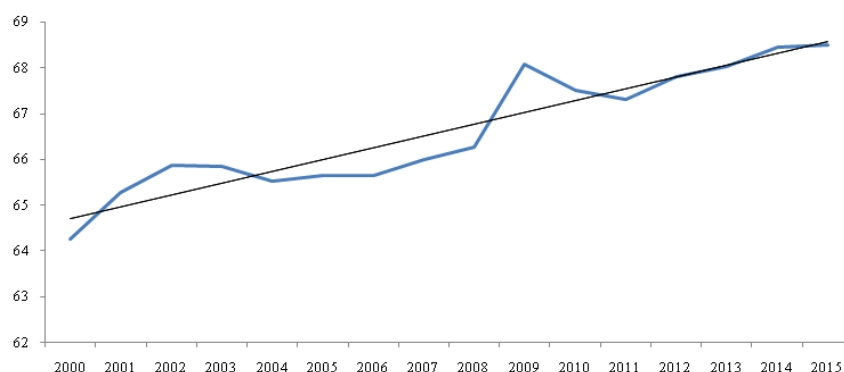
The past decade has seen a steady trend of increasing the role of the services sector in the countries and the world economy as a whole. At the present stage of development of services is outstripping the growth of material production. The share of services in gross domestic product (GDP) in most developed countries has reached 70% and continues to grow. Such an increase of the role of services in the contemporary economic space is characterized as servsization process. The term "servsization" means increase the share of services in the main macroeconomic indicators - gross domestic product, the number of the employed population, the number of companies, capital, investments and etc., as well as the active introduction services activity in the production process (Plotnikov & Vertakova, 2015). Currently in the

industry there is a growing need to expand the activities of industrial enterprises outside the scope of production - in the sphere of marketing, advertising and other business services (Baines et al., 2011). In the world economy trade in services has increased within and across national borders (Vertakova et al., 2015, A). In modern conditions a lot of services are now high tech and pay high wages. Services are ever more significant to the successful operation of manufacturing, debunking debate over countries' need to choose between the two sectors (Vertakova et al., 2015, B).

## 2. Body

The strengthening processes servisization the global economy is also due to the changes in the structure consumption of the population and the performance of employees in different areas. Labor productivity of employees in the service sector is growing much more slowly than in industry. It also leads to a rise in the cost of services compared with industrial products (Grechenyuk et al., 2015, A). The growth of the services provided and the prices for these services leads to an increase in the share of services in GDP. The share of services in GDP of high-income countries reached 70%, in low-income countries it is not more than 35% (Vertakova et al., 2016, A), (Plotnikov & Volkova, 2015). Moreover growth was observed not only in the traditional services (healthcare, education, public administration, etc.), but also in the new, previously non-existent services (information, computer, business, etc.). Most economists believe that it servisization of economy is an important factor in the development of entrepreneurship and the growth of competitiveness of the state economy sectors (Vertakova et al., 2016, B), (Simonenko et al., 2014). The main indicator characterizing the servisization processes is the share of services in GDP (Figure 1). In the world this indicator has increased over the period 2000-2015 from 64% to 68%. Despite his slight declines in 2004 and 2011, we can conclude about sustainable growth trend. This testifies to strengthening of servisization processes in the global economy.

Figure 1: Dynamics of the share of services in GDP in the world for the period 2000-2015, %

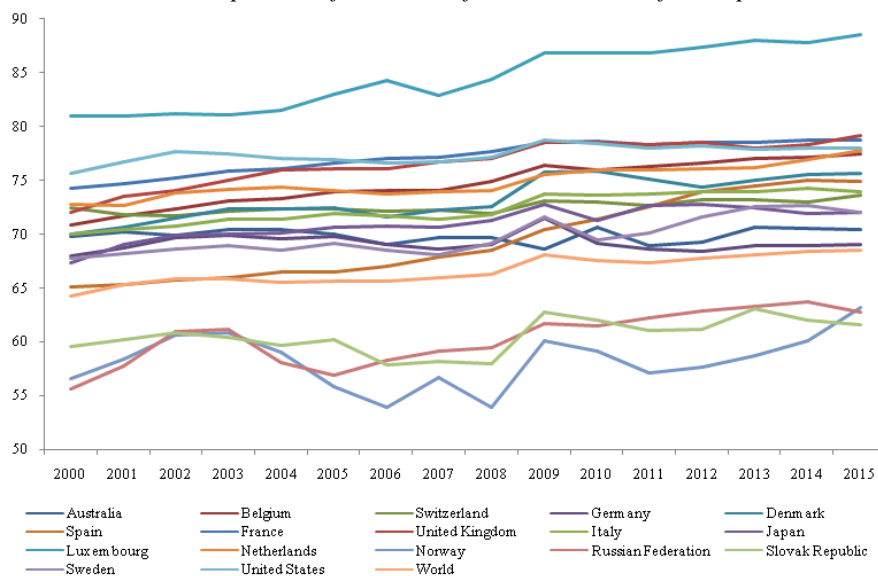


Source: World Bank open data (<http://data.worldbank.org/>)

The international comparisons for this indicator also indicate increasing servisization processes in the global economy (Figure 2). In all the countries studied there has been steadily growing share of services in GDP. The leader by this indicator is Luxembourg, where the share of services in GDP has increased from 81% to 88.5% during the study period. The United Kingdom and the United States was slightly inferior to it (72-79%, 76-78%). In Belgium, Switzerland, Denmark, Spain, France, Italy, Japan, the Netherlands and Sweden, the share of

services in GDP was over 70% and constantly increasing. In Germany, Norway, Slovakia and Russia the share of services in GDP increased from 60 to 70% for the period.

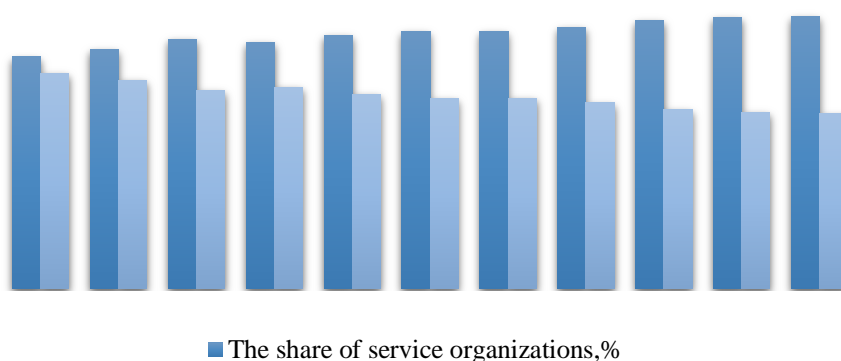
Figure 2: International comparison of the share of services in GDP for the period 2000-2015, %



Source: Authors' calculations using OECD Data (<https://data.oecd.org>)

Research of the basic indicators of services sector in Russia has also shown the growth servisization processes. It was characterized by a significant increase in the share of services in GDP (up to 63% in 2015), outstripping the sphere of material production and the growing number of organizations, the service sector and employment in it. In 2005-2015, there was a steady growth trend of the share of service sector companies in the total number of organizations (Figure 3). In 2005, their share was 52% and in 2015 - 61%. The share of manufacturing enterprises, respectively, decreased from 48 to 39%.

Figure 3: The share of organizations in the service and manufacturing spheres in the total number of organizations in 2005-2015, %

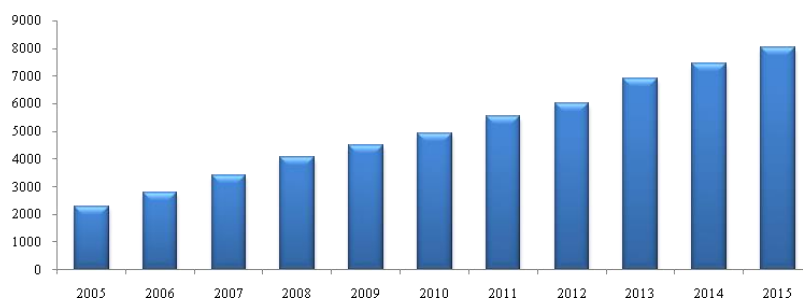


Source: Authors' calculations using Rosstat data (<http://www.gks.ru/>)

According to IFRS services include value added in wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services (Butek, 2015), (Johns & Van Doren, 2010). Also included are imputed bank service charges, import duties, any statistical discrepancies noted by national compilers as well as discrepancies arising from rescaling

(Grechenyuk et al., 2015, B), (Babkin et al., 2015). Currently, the greatest value in the Russian economy are paid services that characterize the volume of their consumption by different categories of the population and include household, transport, services, housing, utilities, hotel services, education services, culture, tourism, services, physical culture and sports, health, sanitation and health, veterinary, legal services, social services provided elderly citizens and disabled, (Melancon et al., 2015), (Grechenyuk & Grechenyuk, 2016).

Figure 4: Dynamics of paid services in Russia in 2005-2015, billion rubles



Source: Authors' calculations using Rosstat data (<http://www.gks.ru/>)

Figure 4 shows the dynamics of the total volume of paid services. In 2005, their value was 2,272 billion rubles, and in 2015 it grew to 8051 billion rubles, by 3.5 times. Next, we have analyzed structure of paid services in Russia in 2005-2015 (Table 1).

Table 1: Structure of paid services to the population in Russia in 2005-2015, %

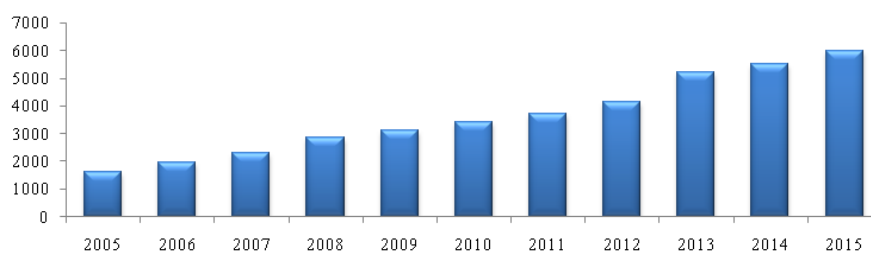
Indicators	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Domestic services	10,1	9,9	9,7	9,9	9,9	9,9	9,6	9,9	10,8	10,8	10,9
Transport	21,5	21,2	20,9	21,6	20,3	19,0	19,3	19,6	18,7	18,6	18,4
Communication	18,5	18,6	19,9	19,7	19,5	19,2	18,8	18,7	17,7	17,0	15,9
Housing services	5,3	5,6	5,4	5,2	5,5	5,8	5,9	5,9	5,7	5,9	6,5
Utilities	18,3	18,0	17,6	17,6	19,3	21,1	21,8	21,1	21,1	21,0	21,1
Cultural	2,3	2,2	1,7	1,6	1,7	1,7	1,6	1,6	1,7	1,7	1,7
Tourist	1,5	1,6	1,6	1,8	1,7	2,0	2,0	2,0	2,1	2,0	2,0
Hotels and similar accommodation facilities	2,6	2,7	2,7	2,6	2,4	2,3	2,3	2,3	2,3	2,4	2,3
Physical culture and sports	0,7	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,7	0,7	0,8
Medical	4,8	4,9	4,7	4,8	4,9	5,1	5,2	5,5	6,0	6,4	6,6
Health-wellness	1,6	1,5	1,4	1,4	1,4	1,2	1,2	1,3	1,2	1,2	1,4
Veterinary	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2
Legal	2,3	2,5	2,6	2,5	1,9	1,7	1,6	1,4	1,2	1,2	1,2
Education system	6,7	6,9	7,1	7,0	6,9	6,6	6,3	6,3	6,5	6,5	6,7
Social services to elderly citizens and disabled	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,2	0,2	0,2
Other services	3,6	3,6	3,9	3,5	3,8	3,6	3,5	3,5	3,9	4,2	4,1

Source: Authors' calculations using Rosstat data (<http://www.gks.ru/>)

Analysis of the structure of paid services has shown that the largest share throughout the analysis period was in the transport, utilities and telecommunications services, whose share was ranged from 18 to 22% during the analysis period. In 2015, the largest share was in utilities (21%), in second place there were transportation services (18%), the share of communal services was 16%. Domestic services were 10% in the analyzed period. Education services account for about 7%. The share of health care and housing services has increased from 5 to 6.5%. Other types of paid services have occupied a small share in the paid services (less than

2%). Another important characteristic of servization economy of the state is also the dynamics of consumer services, which include repair, painting and sewing of footwear, apparel, leather goods, textile haberdashery, knitwear; repair and maintenance of household appliances, furniture, laundry service, repair and construction of housing; maintenance and repair of vehicles, machinery and equipment, photo studio services and others.

Figure 5: Dynamics of consumer services in Russia in 2005-2015, billion rubles



Source: Authors' calculations using Rosstat data (<http://www.gks.ru/>)

Figure 5 shows a steady growth trend of total consumer services in Russia in 2005-2015: 3.5 times for the period. Next, we have analyzed structure of consumer services in Russia in 2005-2015 (Table 2).

Table 2: Structure of consumer services to the population in Russia in 2005-2015, %

Indicators	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Repair, painting and sewing footwear	2,7	2,6	2,4	2,3	2,3	1,7	1,7	1,6	1,5	1,4	1,4
Repair and sewing apparel, leather, textile, knitwear	9,2	8,3	8,0	7,2	6,7	4,3	4,2	3,9	3,7	3,6	3,5
Repair and maintenance of household equipment	6,5	6,1	5,8	5,2	4,9	5,3	5,1	5,1	4,7	4,8	4,8
Manufacture and repair of furniture	1,8	3,2	2,9	3,2	3,2	3,7	3,5	3,4	3,4	3,4	3,4
Chemical cleaning and dyeing	0,8	0,7	0,8	0,8	0,7	0,7	0,6	0,7	0,7	0,7	0,7
Laundry service	0,8	0,7	0,6	0,5	0,5	0,4	0,3	0,3	0,3	0,3	0,3
Repair and construction of housing	27,4	28,3	29,7	30,2	29,4	30,1	29,3	29,0	28,0	27,1	27,6
Maintenance and repair of vehicles, equipment	24,1	23,7	24,7	26,0	26,5	26,5	28,5	29,8	30,1	31,0	30,3
Photo studio services and film laboratories	2,5	2,3	2,2	2,0	2,0	1,7	1,6	1,6	1,6	1,5	1,6
Bath, showers and saunas	1,9	2,0	2,1	2,2	2,5	2,8	2,8	2,8	2,7	2,7	2,6
Hairdressing and cosmetic services	6,9	7,2	7,7	7,8	8,3	8,8	9,0	9,0	11,3	11,5	11,6
Rental services	0,5	0,5	0,6	0,7	0,7	1,2	1,1	1,0	1,1	1,2	1,3
Funeral services	8,0	8,2	7,2	7,2	7,8	7,7	7,6	7,5	6,8	6,8	6,7
Other services	6,9	6,2	5,3	4,7	4,5	5,1	4,7	4,3	4,1	4,0	4,2

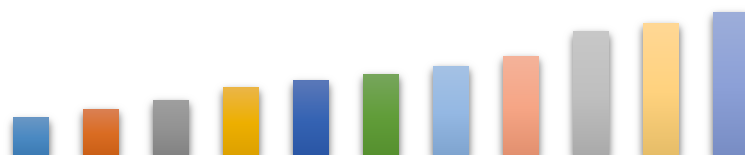
Source: Authors' calculations using Rosstat data (<http://www.gks.ru/>)

In the structure of consumer services (Table 2) in the analyzed period, the largest share was in the maintenance and repair of vehicles, machinery and equipment (whose share increased from 24 to 30% over the period), slightly inferior to their repair and construction of housing and other buildings (27%). The share of hairdressing and cosmetic services increased from 7 to 11.5% for the period and took the third position in the structure of consumer services. The share of funeral services decreased from 8 to 7% for the period. The share of services in repairing and sewing garments, fur, leather and knitwear decreased from 9 to 3.5%. The share of services in



repair and maintenance of household appliances decreased from 6.5 to 5%. Other services have occupied an insignificant share in consumer structure services to the population (less than 3%).

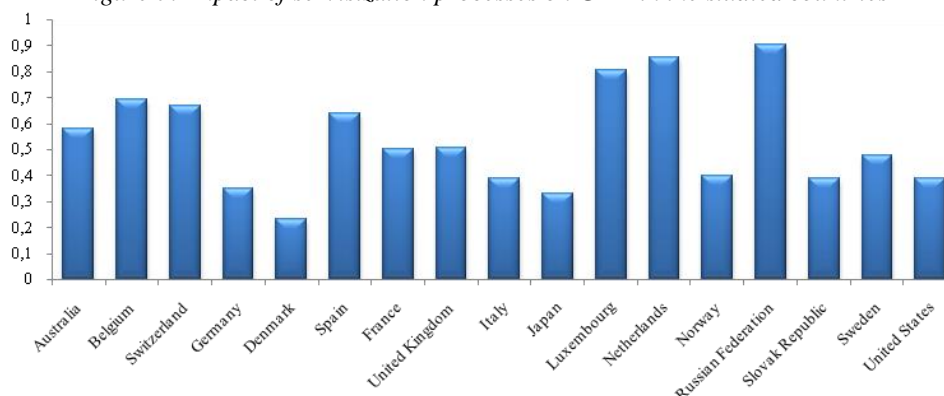
Figure 6: Dynamics of paid and consumer services per capita in Russia in 2005-2015, rubles



Source: Authors' calculations using Rosstat data (<http://www.gks.ru/>)

Other key indicators characterizing servisization processes of the Russian economy are paid and consumer services per capita (Figure 6). Analysis of the dynamics of paid services per capita has shown a significant growth 3.3 times over 2005-2015, consumer services grew 3.6 times. The next stage we have evaluated the effect of servisization processes on GDP in the studied countries. For this, we have used the method of correlation analysis and have revealed the degree of dependence between the dynamics of the share of services and GDP for the years 2005-2015 (Figure 7).

Figure 7: Impact of servisization processes on GDP in the studied countries



Source: Authors' calculations using OECD Data (<https://data.oecd.org>)

Figure 7 shows that in the majority of studied countries, there was considerable dependence the GDP from the observed processes servisization economy. The highest degree of dependence was observed in the Russian Federation, where the value of the correlation coefficient was 0.9. In the Netherlands and Luxembourg the value of the correlation coefficient was also very high (more than 0.8). The average degree of dependence was observed in Belgium, Switzerland, Spain, Australia, France, United Kingdom (0.5-0.69). Weak degree of influence was noted in Italy, Japan, Germany, Norway, Slovak Republic, Sweden, United States (0.3-0.48). In Denmark this dependence almost was not (0.2).

As we have revealed earlier, in Russia there was a high degree of dependence between servisization processes and GDP. But we were interested to find out which of the services previously studied have the greatest impact on GDP. Since their further development will provide the sustainable development of the economy and GDP growth. For this purpose as major servisization factors affecting on the GDP we have selected: the volume of paid and

consumer services to the population, the share of service sector organizations in the total number of organizations, the volume of public catering, retail and wholesale trade.

*Figure 8: Impact of certain services on GDP in Russia*



*Source: Authors' calculations using Rosstat data (<http://www.gks.ru/>)*

The correlation analysis has identified the impact of certain services in GDP in Russia (Figure 8). We had found that all the examined services have a high impact on GDP. And the greatest degree of dependence was found between GDP and the volume of wholesale and retail trade (0.95-0.96); GDP and public catering (0.95). Paid and consumer services to population have less impact on GDP (0.94 and 0.92). The correlation coefficient between the share of the services organizations and GDP was 0.91.

### 3. Conclusion

As result of research we have concluded that in the analyzed period there was a steady trend of increasing the role of the services sector, and, as a consequence, the growth of servization processes in the global economy. We have identified steady trends of increase the share of services in GDP in the world and in the majority of studied countries. In Russia servization processes in the economy have also been observed. That was characterized by a significant increase in the share of services in GDP, outstripping sphere of material production, and the growing number of service organizations. We have found a high degree of dependence GDP on servization processes in the economy in most of the studied countries. And in Russia it was the greatest. All researched services have a strong impact on the GDP of Russia. The highest impact on GDP was found from the volume of wholesale and retail trade; GDP and public catering. Paid and consumer services have slightly less impact on GDP.

### Acknowledgment

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## VALUE ORIENTATION IN RELATION TO CONSUMER SUBSEGMENTS OF GENERATION 50 + IN GLOBAL ENVIRONMENT

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**Abstract.** Today's global approach to marketing and business combined with high competitiveness requires companies to focus more specifically on customers and their retainment. Therefore it is essential to implement a so-called principle of segmentation into more specific customer groups with regards to their lifestyle, thinking, a way of shopping, what products and services they prefer, what they buy and what they really need. The generation 50+ represents the most attractive and diversified segment these days. There are various global changes that make this generation specifically important to our research: from a demographic point of view this generation is growing bigger while birth-rate is going down, medium life expectancy is increasing with retirement age going up. In terms of a number of people the present generation 50+ is rather wide, willing to "be in" and technologically-friendly and is particular thanks to traditional values the present young generation lacks. Values are an important factor influencing behaviour and decision-making in personal life and life of a consumer as well. The chart of determining values creates value orientation which along with a lifestyle and interests define a complex view of life and personality traits. With regards to specificity of the segment, the paper deals with consumers aged 50-62. Based upon the results of the research the paper looks into their chart of values and particular sub-segments which demonstrate one's buying behaviour and appropriate marketing and communication approach.

**Keywords:** consumer, generation 50 +, value, value orientation, globalization

**JEL Classification:** M30, M31

### 1. Introduction

The term of a value is common in human communication. We often use it in the expression „to have value“ (to have sense, to be important, to be worthy) or „to be valuable“, which can be explained as being precious, important, significant or meaningful.

The term of a value is mainly used in psychology in connection with personality or in other branches of science, such as marketing, economy, philosophy, sociology and others. In marketing field, a value is linked to one of the elements 4 C, i.e. customer value, which refers to a value for a customer or customer's value for a business. In psychology and sociology we mainly refer to values of personality where a value represents an individual factor for each individual and is linked to life and its meaning. Values represent a crucial part of our

personality. Along with our needs, interests and attitudes they influence man's behaviour and determine its direction. Values in our behaviour along with our opinions and attitudes result in relatively stable relationships of an individual towards reality. Values do not usually change so quickly and their relation to our personality is rather limited.

Authors tend to explain this notion as follows:

The author of books on psychology Mr Boroš (1998) says that in general a value represents an attribute appearing and changing throughout our life under influence of the environment, upbringing or personality and its meaning differs from case to case. We see values as goals we want to achieve but at the same time we feel motivated to improve ourselves or reach what we want in a certain area.

By Mr Sičák (2016) value represents: *„a criterium of selection of goals for human efforts and as such it represents a way of dealing with certain situations we see important from a certain point of view. It reflects a subjective and objective relation with a value aspect which influences emotions and regulates individual's behaviour.“*

Říčan (2004) adds that value is: *„anything that satisfies any needs of a person, in other words anything what is valuable or has value.“*

In course of life a man builds a chart of his/her standard values he/she considers particular and determining. Such a chart of standard values creates a so-called value orientation. It defines our focus on certain values of a material or a spiritual aspect. Preference of values creating value orientation partially implemented in marketing. Koudelka (2006) claims that consumer's behaviour within a certain area can be described rather easily.<sup>4</sup> Knowledge and definition of value orientation of consumers enable us to define specific segments.

## 2. Specific segments on the market - generations

Because of increased competitiveness and customer specificity it would be rather complicated for businesses to target all the consumers as they differ considerably. Therefore it is necessary to segment the market and use so-called targeted marketing. *„Market segmentation lies in particular division of the market into homogeneous parts, market segments which will represent a target market for a company with a specific marketing mix.“* (Kita and coll., 2010)

One of the forms of segmentation of consumers and creating their typology is differentiation by generations. *„The generation characteristics can be defined as a social trait – values, a life style, ethic norms, attitudes, etc. In other words, it relates to the most frequent and existing traits connected with consumer's conduct and awareness of a particular generation.“* (Kolesárová, Sak, 2012)

The segment is a broad part of the market consisting of various sub-segments defined by specific characteristics. We may use typology to define those segments. Typology of consumers in marketing helps specify their wants and needs and set the most effective marketing mix. Typology can be attributed only if: *„it takes into account personal traits of a person, behavioural characteristics and attitudes to ourselves and our social experience.“* (Hradiská, Šulek, 1999). When creating consumer typology it is important to understand that it does not always reflect needs and wants of the whole segment, but only one specific part hereof.

## 2.1 Characteristics of the generation 50+

Generation 50+ as well as the term of „Baby Boomers“ refer to people born in the after-war period, i.e. in the years 1946 – 1964 followed by the generation X born between 1965 – 1977, the generation Y from 1978 to 1994 and lastly the generation Z or Millennials – people born between 1995 and 2002. Each of these generations is essential for marketing theory and practice, mainly with regards to customer segmentation. (Beutell & Wittig-Berman, 2008).

The generation Z is often in contrast with the generation 50+ as they both refer to two distinctive groups when it comes to behaviour, attitudes, interests, values and especially media habits, knowledge of information technologies, communication and reception of marketing messages. These two generations differ considerably as defined below: *„The younger generation Z requires a more flexible, a more dynamic and at the same time a less personal way of communication. Its members use social media – Facebook, Instagram or Youtube - on a daily basis to be in touch with objects of their interest, e.g. celebrities, brands, products, webpages and communities. In contrast to the generation Z, the 50+ use more traditional media (TV, radio, print media). They feel appealed by more personal and more direct forms of communication.“* (Grešková, 2016)

The generation Z has various attributes, it is mostly referred to as „digital generation“ as its members were born and grew up in line with modern communication technologies. It is defined by technological development. Its members claim individuality, independence, ambitions and self-confidence. From all the media available the Internet plays a crucial role. (Grešková, 2015). The generation Z was defined by the research Millennials + carried out in 2015 by TNS Slovakia which examined 1,500 people aged 12-26. The study monitored lives of the young while focusing on their lifestyle, values, opinions, attitudes and patterns of behaviour. It also analysed media and technologies they follow, their consumer behaviour, preference for brands, etc. Its results are as follows. The young prefer modern gadgets such as tablets, smartphones and TV. All this equipment enables the young to spend their free time online, watch YouTube and chat with friends. Facebook still remains the most popular social network - 90% of the young have a Facebook account. Snapchat and Instagram occupy the second and the third position respectively. Messenger by Facebook tops the chart of chatting services. The young prefer watching music videos on YouTube - entertainment videos, film trailers and Youtubers are similarly important. (www.tns-global.sk, 2016) The differences between the generation Z and Baby Boomers can be seen in the Table 1.

Table 1: Differences between the generation of Baby Boomers and the Generation Z

Generation Z	Generation of Baby boomers
Use of technologies	Responsibility
General attitude	Conservativeness
Laziness, comfort	Values/ Ethics
Creativity	Respect
Liberality/ Broad-mindedness	Work
Music/ pop culture	Ethic standards

Source: www.icademyglobe.org, 2016

As shown in the Table 1 on general characteristics, it is obvious that the members of the older generations were brought up to the qualities like responsibility, professionalism or ethic standards. The members of the generation Z, unlike the generation 50+, are rather liberal, tolerant and more open-minded when it comes to using and accepting new technological advances and gadgets. Despite their traditionalist approach it is evident that consumers at the age 50+ feel much younger than they really are. They seem to be more goal-oriented, assertive and broad-minded when it comes to leisure activities. (Lissitsa & Kol, 2016).

## 2.2 Value orientation of the generation 50+ and its subsegments

To demonstrate the differences between particular generations, we will point to the research of value orientation by the authors Van den Bergh and Behrer. Their paper states identity and values of the generation 50+ or other generations as well. The results of the study of Pew Research Center are based on the fact that the majority of members of specific generations have unique features and patterns. Those differences appear to be crucial once we look at comparison of the young generation Y and Baby Boomers. The generation Y is deemed to be technologically literate. The generation of Baby Boomers is interested in work and this is the pattern of behaviour that defines its members. While the generation Y is dominated by music culture, the generation X prefers working morale and the generation of Baby Boomers acclaims tolerance. Baby Boomers are thought to have strongly established values. The generation X is considered to be conservative whereas Y is liberal. (McNichols, 2010, Boyd, 2010).).

Chart 2: Value orientation of generations

Generation Y	Generation X	Generation of Baby Boomers (50 +)	Silent Generation
Use of technologies 24 %	Use of technologies 12%	Working morale 17 %	WWII/Economic crisis 14%
Music culture 11 %	Working morale 11%	Tolerance 14%	Intelligence 13%
Liberality/Tolerance 7%	Conservativeness 7 %	Values/Ethics 8%	Honesty 12%
Intelligence 6 %	Intelligence 6 %	„Baby boom“ 6%	Working morale 10%
Clothes 5%	Tolerance 5%	Intelligence 5%	Values/Ethics 10%

Source: Bergh & Behrer (2012)

The generation 50+ is a heterogeneous and a broad segment consisting of several smaller age groups which can be identified separately. The group of the elderly is often discussed. Economically active consumers of the generation 50+ aged 62 to 65 are being currently targeted. It is assumed that these consumers are interesting and attractive for marketing activities with regards to their financial background and willingness to invest in purchase of goods and services. The period of older adulthood – the people aged 45 to 60 – is really specific. A man goes through various life changes and he/she understands that he/she is losing a status and is growing older. These people have different needs, opinions and requirements on providers of services and products. 50 is considered a milestone of changes. At this age people manifest physical signs of ageing, they are changing their attitude towards themselves, their environment as well as to situations, events and things. (Zhang & Shavitt, 2003).

Values and preferences differ too. In the study named *Seniors in the ageing Czech society* carried out in the years 2010 – 2011, the biggest differences occurred among young and old seniors (aged 63-70 and 71 and more). The members aged 31-45 and 46-62 were rather similar



in their values (health, family, partnership, love, self-development). This fact reflects tendency of consumers to grow younger. Considerable differences appeared between the younger generation under 30 and other generations. (Kolesárová, Sak, 2012)

Specific age groups with the generation 50+ are believed to have considerable differences between values and value orientation of its younger and older members. As a result: *„if companies want to appeal to older customers, they have to take into account the fact that the group is not homogeneous. On the contrary, it is a heterogeneous group and their wants and needs with regards to investments change by their age. Gender differences determine other aspects of this group. One has to take into consideration other attributes as well, e.g. economic background, social status, education or psychographic factors. There are various smaller groups – sub-segments – which differ by their patterns of behaviour and buying habits.“* (Grešková, 2016)

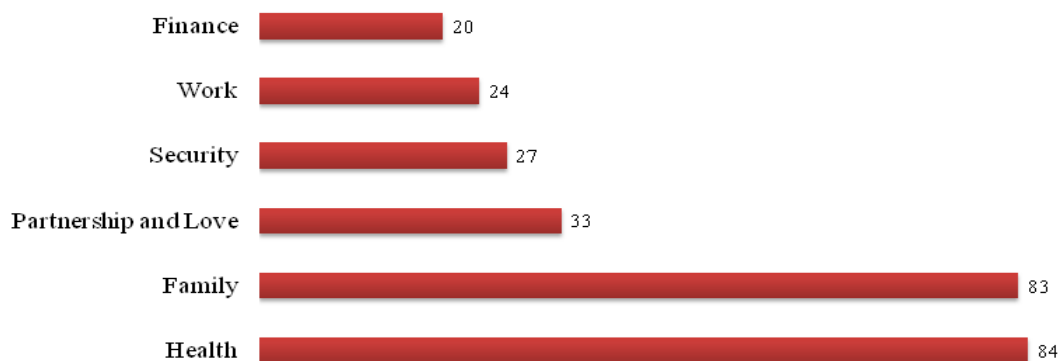
### **2.3 Gender differences regarding value orientation of generations**

Consumers of the whole generation can be defined by way of other parameters in relation to their lifestyle, purchasing behaviour, attitudes, interests, etc. According to Kusá, Fašiang and Grešková (2016), there are significant differences between genders in relation to their purchasing behaviour and value orientation. These differences are related to the sociological and biological specifications information process, approach to giving gifts and attitudes to the point of sale atmosphere. Grewall (2003) tells, that women are more emotional oriented that is obvious at POS and brand preference. They are more sensitive to the hedonistic values and their satisfaction is related to the interaction at product offer, pleasant environment and shopping experience. Women scaled the atmosphere of the POS higher than men. It should be assumed that visual communication, graphics, lights, music, scents are factors more important for women and their overall POS rate. (Granot, Greene, Brashear, 2010). The study by TNS Slovakia named LifeStyle 2015 and 2muse points to differences in value orientation with regards to both age and gender, especially in case of women consumers whose traits, interests as well as values tend to change as they grow older. Women prefer buying clothes and products of everyday use while men are interested in electronics. Women are attracted by discounts and benefits. Women above 35 live in their own house or flat while women under 35 rent a flat or live with their parents. Women aged 35 and more prefer and use rather traditional media (TV, radio, print media) while younger women prefer social networks. Member cards are more attractive for women above 50. (www.strategie.hnonline.sk, 2016) The following results were obtained by 2muse which carried out the survey in 2016 on the sample of 860 people from the Slovak Republic. (Leiter et al., 2009).

As shown in the Chart 3, women value health and family along with partnership and love, work or finance. The survey also focused on comparing more specific age groups of women. As far as age is concerned, the most interesting groups of women consumers were those aged 35-50 and 51-65. In comparison with older women, the women aged 15-20 are more interested in acquiring abilities through special courses, art classes, dance classes or socialising. They like reading books, going to theatre or cinema. They browse social sites or download special apps in their smartphones. Women aged 21-35 prefer going to restaurants and watching films. Not as often as younger generations, but they still like social sites and being online. They spend a lot of time with their children, do sports and study. Women aged 36-50 focus on effectivity of their shopping, e.g. special offers and discounts. They spend time with their children and do housework. From everyday activities they named children upbringing, housework (either in a house or in a flat) or gardening, especially flowers. They also like watching TV. Women of

generation 50 +, compared to the younger ones, are more reserved and conservative. In terms of investments they do not like taking risks and prefer secure investments. Their regular activities include going to shopping centres, doing craftwork, watching TV, reading newspapers and magazines, listening to the radio. They also love gardening and flowers.

Figure 1: Value orientation of Slovak woman



Source: [www.strategie.hnonline.sk](http://www.strategie.hnonline.sk)

As the analysis of age groups shows the differences are obvious especially in terms of interests, everyday activities, values as well as types of media they use. Companies need to pay attention to every field equally.

### 3. Conclusion

Values are an important factor defining consumers' focus on what is important and determining in their lives. In contrast to younger generations, the generation of people over 50 is specific in preference of value orientation. However, differences can be also seen within one generation split into sub-segments by age, gender or other aspects, which plays a key role when creating a marketing strategy. Therefore it is crucial to take into consideration several factors while defining the essence of each segment. With regards to the above mentioned and generally acknowledged principles it is worth implementing them into company communication policies.

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# THE IMPACT OF BREXIT ON THE FUTURE FATE OF THE COMPREHENSIVE ECONOMIC AND TRADE AGREEMENT (CETA) AND THE TRANSATLANTIC TRADE AND INVESTMENT PARTNERSHIP (TTIP)

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**Abstract.** The EU has concluded the negotiations on the Comprehensive Economic and Trade Agreement (CETA) with Canada, while the negotiations on the Transatlantic Trade and Investment Partnership (TTIP) are still ongoing and unlikely to be completed under the Obama administration. Both agreements, if implemented, are likely to globalize international trade even further. Since the United Kingdom is an important trading partner for both Canada and the United States, the question arises whether its decision to leave the European Union can compromise the future fate of these two free trade agreements. The aim of this paper is to examine the possible impact of Brexit on the future of CETA and TTIP and to analyze the legal steps necessary for these free trade agreements to come into force since their legal nature has not been clarified yet. Both of these agreements can be treated either as agreements negotiated within the exclusive mandate of the EU which would greatly simplify the ratification process or as mixed agreements interfering with the shared powers between the European Union and its Member States. The latter scenario would make the ratification process much more difficult, since the veto by a single Member State could stop the entire agreement from becoming effective.

**Keywords:** Brexit, CETA, TTIP, European Union, free trade agreements

**JEL Classification:** F6, F15, K33

## 1. Introduction

In the June 2016 referendum the British voted in favor of leaving the European Union, which is a clear sign against further centralization of power (Chopin & Lequesne, 2016). The aim of this paper is to examine what effect the leave vote is likely to have on the future of two major free trade agreements negotiated by the European Union in the past few years, namely the CETA (Comprehensive Economic Trade Agreement) with Canada and the TTIP (Transatlantic Trade and Investment Partnership) with the United States. Brexit can be perceived as an attack against globalization, free trade and offshoring of labor (Roubini, 2016), all of which the above free trade agreements are likely to enhance.

## 2. The Power to Negotiate Free Trade Agreements

The negotiation of free trade agreements with the so-called third countries (i.e. non- EU Member States) is part of the common commercial policy, which also includes the protection of foreign direct investment since the last reform treaty (the Lisbon Treaty) came into force in December 2009. Article 207 of the Treaty on the Functioning of the European Union which replaced Article 133 of the Treaty on the Establishment of the European Community now reads as follows: “1. The common commercial policy shall be based on uniform principles, particularly with regard to changes in tariff rates, the conclusion of tariff and trade agreements relating to trade in goods and services, and the commercial aspects of intellectual property, foreign direct investment, the achievement of uniformity in measures of liberalization, export policy and measures to protect trade such as those to be taken in the event of dumping or subsidies. The common commercial policy shall be conducted in the context of the principles and objectives of the Union's external action.”

Since the common commercial policy is an exclusive power of the European Union, the UK as an EU Member State may not negotiate bilateral trade agreements on its own. Nor can it conclude bilateral investment treaties (BITs) with third countries without previously consulting the European Commission on the envisaged wording thereof. On the other hand, free trade agreements, such as the draft CETA and TTIP increasingly include also provisions on the protection of foreign direct investment (a proposal to establish an investment dispute court in the CETA and a proposal to govern investor-state disputes in TTIP as well) (Henckels, 2016). Last but not least, free trade agreements negotiated by the EU usually decrease the tariffs set by default by WTO rules. As a future non-EU member, the UK will also be able to renegotiate its tariff policy if it wishes to drop the level of tariffs set by the WTO to boost its international trade.

Once the UK has disassociated itself from the European Union, it will recover the powers covered by the EU's common commercial policy and will be free to negotiate both, trade agreements and bilateral investment treaties with any country in the world. Also, the UK will regain more negotiating power as a Member of the WTO, where now the EU uses a single vote for the entire block of its 28 Member States. Since the UK is one of the founding parties to the WTO there will be no need for the UK to reapply for its membership in this global trade organization.

However, at present, it is unclear, how long the disengagement from the European Union will take. Article 50 of the Treaty on the European Union regulating the so-called divorce clause has not been formally activated yet and is unlikely to be activated in the course of 2016. Once the British government notifies the European Council formally that it wishes to exit the European Union, it will take at least two years to fully break up its original ties to the EU's common market. Until then, the UK will be free to participate in the functioning of the EU institutions, however, it will not hold its planned presidency of the European Union in 2017 since there would be a clear conflict of interests if the UK Presidency of the EU were to negotiate the exit of the UK from the EU. Instead, the established order of presidencies will be shifted one semester ahead, which will enable Estonia to hold the EU Presidency during the timing originally foreseen for the UK.

### 3. CETA and TTIP Negotiation Stages

In theory, the CETA could be concluded before the UK manages to exit the EU, however, in practice, this is rather unlikely. The negotiations conducted in strict secrecy (Kerr & Hobbs, 2015) on CETA have concluded in 2014, the translation process is in course now and the vote on CETA is scheduled to take place in the European Parliament in late 2016 or in early 2017. However, the approval of the CETA by the Council of Ministers representing the national interests of the EU Member States and by the European Parliament, which is supposed to represent EU citizens under the Treaties founding the EU, will not be sufficient for CETA to come into effect without the ratification by all national parliaments. The European Commission decided to treat CETA as a mixed agreement, which means that its coverage is not limited to the exclusive powers of the EU, but interferes with the shared competences between the EU and the Member States. Since mixed agreements require a ratification by all EU Member States, a single national vote against CETA can block the entire agreement from coming into force. At present, there is a strong popular opposition to CETA and TTIP in some EU Member States, especially Germany and France, led by NGOs and other anti-globalization activists, hence a vote in favor of CETA is rather unlikely in these two countries if national deputies follow public opinion. Nevertheless, there is no clear support for CETA within the European Parliament either. If the European Parliament rejects to provide its support for CETA, it will not be for the first time in EU's history that the only directly elected EU institution has blocked an international treaty negotiated by the EU from taking effect. In the past, the European Parliament already turned down the draft Anti-Counterfeiting Trade Agreement (ACTA).

To avoid a possible rejection of the CETA by national parliaments, the European Commission has suggested a provisional application of the CETA before it gets ratified at the level of the EU Member States. It is unclear yet, which parts of the CETA should be applied on a provisional basis. Nevertheless, there appears to be sufficient political support for a provisional adoption and application of the CETA by the Council, since only a qualified majority vote would be sufficient for a provisional application thereof. To obtain a qualified majority, the Treaties require a favorable vote by the ministers of 55 per cent of EU Member States representing 65 per cent of the total EU population. A Council meeting at the end of October or at the beginning of November 2016 will bring more light into the issue.

With respect to TTIP, the negotiations are still ongoing. They were initiated under the old Commission led by Jose Manuel Barroso, who has now moved to work as a lobbyist for Goldman Sachs implementing another prominent example of a revolving door. The negotiations have been taken over by the present Commission presided by Jean Claude Juncker. It is the Trade Commissioner, Cecilia Malstroem, who is in charge of carrying out the negotiations on TTIP. Since TTIP is negotiated under much more transparency than CETA, it has drawn much more criticism and opposition from the public than the draft free trade agreement with Canada.

#### 3.1 The Precautionary Principle as a Vehicle for Anti-Globalization Activists

The Commission is likely to have crossed the red lines on TTIP laid down by the European Parliament especially when it comes to the possible deregulation of chemicals, which is likely to be contrary to the EU's precautionary principle that made the EU ban 80 chemicals still authorized in the US (Terzieva, 2016). If American chemicals and GMOs not authorized by EU legislation will be able to be marketed in the EU as a result of TTIP, the presumption of the unavoidable arbitrariness in the application of the precautionary principle voiced, *i.a.* by

Giampietro (2002) and van Rijssen (2015) will be confirmed. No wonder that academia pleads for a formal review of the precautionary principle both at EU level (Lofstedt, 2014) and in international trade law (Xiao & Xiaomin, 2015).

Also, public disobedience has multiplied in relation to TTIP negotiations, with anti TTIP graffiti sprayed on the main Commission building in Brussels as well as the headquarters of BusinessEurope, a major lobbyist in favor of free trade negotiations trying to push the Commission to apply CETA provisionally before it has been ratified by the national parliaments of all EU Member States (see above). Also, Almost three and a half million people who have signed a petition to stop TTIP and CETA and over 1900 cities across the EU converted themselves into CETA/TTIP-free zones (Eriksson, 2016). As of mid-April 2016 there were 41 CETA/TTIP free zones in the UK, which is rather modest compared to the statistics of other EU Member States, such as Austria, France and Germany. This may be due to UK's long standing tradition of being a very liberal country when it comes to international trade. It has always been a proponent of liberalization of trade in goods and services within the EU.

### **3.2 Pros and cons of bilateral trade agreements between the UK and Canada/US**

With respect to the arguments raised above, it is unlikely for CETA to materialize on EU scale at any time in foreseeable future. Hence, the question arises whether the UK will be more ideally suited to negotiate and conclude a bilateral free trade agreement with Canada and the US. The UK has many experts in international trade, but very few negotiators since the negotiation of trade agreements was shifted to EU level from the access of the UK to the EU in 1973 onwards. Therefore, the new UK Prime Minister Theresa May, has introduced her plan to set up a Department of International Trade that will be able to handle an increased load of new negotiations of bilateral trade treaties post Brexit. Since domestic negotiators are scarce in the UK, the Department of International Trade may wish to hire negotiating experts from other Commonwealth Countries, such as Canada and New Zealand.

The following paragraphs will discuss the need for a bilateral free trade agreement between the UK on the one hand, and Canada/the US on the other.

Critics of a possible future bilateral free trade agreement between the UK and Canada/US believe, that legal regulation in the UK is much more liberal and favorable for foreign direct investment than in any other EU Member State, and that in fact, no such agreement is necessary to further promote trade between these countries since regulatory convergence appears satisfactory. On the contrary, the access to the markets of other EU Member States is much more restricted, so from the Canadian/US point of view, it would make more sense to have a free trade agreement covering the EU-27 (i.e. all EU Member States minus the UK which will have left the EU by the time CETA/TTIP get ratified). Canadian and UK firms based in the UK now enjoy access to the entire common market, a privilege they would lose once the UK has disengaged itself from the EU: This can also concern some supranational forms of companies (such as the European Company and the European Economic Interest Grouping) (Grmelová, 2015) having Canadian and US shareholders that will most likely have to relocate to the "continent" in case they do not wish to discontinue their activities or convert into a UK national legal form of a business corporation (Vasil'ová & Vasil', 2015).

More arguments against any free trade agreement are not UK specific and can be basically applied in general, such as the fact that any free trade agreement is likely to privilege corporate interests at the expense of the civil society (Trew, 2013).



Proponents of a bilateral free trade agreement between the UK and Canada/US argue, that for the UK it will be much easier and quicker to negotiate a preferential trade agreement since not so many national interests have to be protected in the treaty. The current drafts of CETA and TTIP contain hundreds of national exemptions, often significantly delaying progress in negotiation and ratification. Also, the legal systems of the three countries concerned are much more aligned given the common law tradition compared to the Roman law legal legacy in continental Europe.

Another argument in favor of bilateral treaties between the UK and Canada/US deals with insufficient liberalization of services, including financial services, in the draft CETA and TTIP agreement. Even though CETA has been labelled as the most far reaching agreement ever negotiated by the EU (de Mestral, 2015), “CETA does not prevent the EU and Canada from keeping a number of regulatory and licensing requirements in place” (Open Europe, 2016). A bilateral free trade agreement could address the liberalization of financial services in a much more efficient way for the UK.

Apart from financial services, a bilateral deal could be more ambitious in the field of mutual recognition of credentials, where Canada, the U.S. and the UK appear to be more synchronized than the rest of the European Union (Oreskes & Guida, 2016).

The likelihood of a successful negotiation of a bilateral agreement with the US will also largely depend on who will become the next US president replacing the Obama administration. Whereas Donald Trump declared his readiness to conclude more simple bilateral trade deals rather than complex multilateral ones, his competitor, Hilary Clinton, has been more cautious about supporting a bilateral trade agreement with the UK, following the policy line of the current Obama administration. In this context it is apt to recall that the US is UK’s most important trading partner accounting for one fifth of all US goods aimed at the EU market (Oreskes & Guida, 2016). Yet, it is premature to evaluate the long-term impact of Brexit on international trade since its economic implications are anything but clear at this point of time (Crafts, 2016).

## **4. Conclusions**

The UK has always been a major advocate of free trade within the EU. The EU could have counted with UK votes in favor of CETA and TTIP both in the Council and in the European Parliament. Yet, despite Brexit, the EU will continue its efforts to ratify both of these free trade agreements without the participation of the UK. This may prove rather difficult given the strong popular opposition in some EU Member States, such as Austria, Germany and France, where a number of local authorities declared CETA/TTIP free zones. Once having fully disengaged from the EU, the UK will recover its sovereign powers to negotiate bilateral trade agreements with Canada and the US. Before the UK manages to put in place new preferential trade deals and while it is no longer an EU Member State, it can continue to engage in international trade under WTO rules. To sum up, Brexit will be unlikely to have a significant impact on the fate of CETA and TTIP. Other criteria, in particular, the strong popular resentment with respect to downgrading the existing rules on consumer protection will play a far greater part in bringing CETA and TTIP to life.

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# GLOBALIZATION AND ITS IMPACT ON THE CORPORATE FINANCIAL MANAGEMENT AND CONTROL

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**Abstract.** Globalization is one of the crucial manifestations of contemporary international business development. Its main features include, among other things, a new organization of production on an international scale, which enables businesses to establish themselves in foreign markets and enhance the performance of business entities and the entire economy. Within the framework of the development of international cooperation occur the formation of international business communities and the establishment of joint enterprises and multinational corporations that have the opportunity to take full advantage of the world economic environment. Enterprises have the opportunity to reduce costs, increase sales and profit, acquire access to new information and know-how in various business areas including financial management and control of the financial situation. Businesses have the opportunity to expand the set of tools and methods of assessing the economic success about new, in foreign markets already established approaches. The indicators of financial analysis and controlling tools allow measure the success of achieving the formulated financial objectives and performance. The aim of this paper is to present the results of research aimed at detecting the using of financial analysis indicators and controlling tools in financial management and control of enterprises. In this paper we test the assumption of the existence of a higher extent of using of financial indicators and controlling tools in the management and control of enterprises with foreign ownership interest compared with domestic enterprises.

**Keywords:** globalization, internationalization, financial management, control, indicators

**JEL Classification:** F69, G39, M19, M40

## 1. Introduction

Globalizáciou vo všeobecnosti rozumieme prepájanie aktivít cez regionálne a národné hranice v mnohých oblastiach života, napríklad v ekonomike, politike, kultúre, komunikácii, a iných. Di Mauro a Forster (2008) definujú globalizáciu ako zvyšujúcu sa vzájomnú závislosť ekonomík prostredníctvom cezhraničných transakcií s tovarom, službami, prírodnými zdrojmi, kapitálom a prácou. Súčasnými prejavmi globalizácie sú hlavne zníženie nákladov na dopravu a komunikáciu, na spracovanie a prenos informácií a uľahčenie a zrýchlenie medzinárodných obchodných a finančných transakcií. Uvedené výhody významným spôsobom ovplyvňujú výsledky hospodárenia a výkonnosť podniku. Využívajú ich národné aj nadnárodné spoločnosti, ktorých vznik je ďalším z prejavov globalizácie (Mackenzie, 2013).

V tomto článku sa zameriavame na ekonomickú globalizáciu, ktorú Stiglitz (Huwart & Verdier, 2013) definujú ako užšiu integráciu krajín a národov sveta, ktorá priniesla enormné zníženie nákladov na dopravu a komunikáciu, odstraňovanie umelých bariér pohybu tovarov, služieb, kapitálu, znalostí a ľudí. Zaujímá nás vplyv globalizačných trendov a internacionalizácie podnikania na procesy finančného riadenia a meranie výkonnosti podniku.

Výber nástrojov a metód, ktoré využívajú podnikateľské subjekty pri meraní a riadení svojej výkonnosti prešli niekoľkými vývojovými tendenciami s ohľadom na zmeny v cieľovej orientácii podnikov (Wagner, 2011; 2014). Výkonnosť podniku je silne ovplyvnená schopnosťou podniku vytvoriť a využiť konkurečnú výhodu na trhu (Piták, 2010; Dobrovič, 2013). V globálnom podnikateľskom prostredí je však možné konkurečné výhody využívať často len krátkodobo (Král et al., 2006).

Rozpoznať pôsobenie rizikových faktorov na finančnú situáciu a výkonnosť podniku, pôsobiaceho tak v národnom, ako aj v medzinárodnom priestore, umožňuje súbor paralelných finančných ukazovateľov, bonitné a bankrotné modely a pyramídové sústavy ukazovateľov využívané pri finančnej analýze podniku. Mnohé z týchto metód a nástrojov majú svoje korene v ekonomikách, kde trhový mechanizmus pôsobil aj pred nežnou revolúciou v ČSSR. K nám sa dostávali postupne spolu s globalizačnými vplyvmi.

Základný okruh paralelných finančných ukazovateľov využívaných pri finančnej analýze podniku tvoria ukazovatele likvidity, aktivity, rentability, zadlženosti, trhovej hodnoty, prevádzkové ukazovatele a ukazovatele počítané na báze peňažných fondov a cash flow. Ide o pomerové ukazovatele, ktoré patria pre svoju jednoduchosť a nízku nákladovosť medzi najobľúbenejšie a najrozšírenejšie nástroje finančnej analýzy. Poskytujú základný obraz o finančnej situácii podniku, umožňujú realizovať trendovú aj komparatívnu analýzu, a používajú sa ako vstupné údaje pre matematické modely, ktoré umožňujú popísať závislosti medzi javmi, klasifikovať stavy a hodnotiť riziká, prípadne predvídať budúci vývoj (Grofčíková, 2010; Lesáková & Grofčíková, 2013).

Tento základný okruh ukazovateľov dopĺňajú hodnotovo orientované ukazovatele (Burešová & Dvořáková, 2016), ktoré sú založené na aplikácii ukazovateľov trhovej a ekonomickej pridanej hodnoty (MVA, EVA). Nástroje merania a koncepcia jednotlivých indikátorov je v hodnotovo orientovanom manažmente konštruovaná vždy tak, aby bol vyjadrený celkový dosiahnutý efekt vo vzťahu k vloženému kapitálu vyjadrenému v rôznej forme. Vo svete sú známe a používané aj tieto ukazovatele a systémy: Cash Value Added, EBIT, EBITDA, NOPAT, E/P, ROIC, ROE, Return on Net Assets, Managing for Value Total, Shareholder Return, Total Business Return, Excess Return Cash Flow, Real Option, RAROC (Marinič, 2008).

Hodnotením finančnej situácie podniku pomocou paralelných finančných ukazovateľov dostaneme izolované informácie o jednotlivých oblastiach hospodárenia podniku. Pre získanie komplexných informácií sa potrebujeme zaujímať o vzájomné vzťahy medzi ukazovateľmi, prípadne o agregované ukazovatele finančnej výkonnosti podniku. Pyramídové sústavy ukazovateľov umožňujú zachytiť súvislosti a väzby medzi ukazovateľmi a vrcholový ukazovateľ rozložiť na ukazovatele stojace v pozícii príčinných faktorov, čím vzniká účelová hierarchia ukazovateľov. Agregáciu ukazovateľov umožňujú teoretické modely založené na matematicko-štatistických metódach, ktoré formulujú funkcie obsahujúce optimálne kombinácie ukazovateľov vrátane ich váh (Boďa & Úradníček, 2016). Ide o bonitné a bankrotné modely, ktoré slúžia pre rýchlu orientáciu investorov a veriteľov, resp. pre roztriedenie podnikov podľa ich výkonnosti a dôveryhodnosti. Dôležitým prínosom týchto

modelov je snaha o obmedzenie subjektivity pri výbere ťažiskových ukazovateľov a ich významnosti. Majú však aj svoje obmedzenia, o ktorých pojednávajú Hladlovský & Kráľ (2014), Dluhošová & Zmeškal (2014).

Je nepopierateľné, že informácie, ktoré môžeme využitím týchto sústav ukazovateľov a modelov získať sú dôležité, pre efektívne finančné riadenie nevyhnutné, a umožňujú v predstihu identifikovať vznikajúce riziká, ktorým je podnikateľský subjekt v globálnom konkurenčnom prostredí vystavený. Otázne je, do akej miery sú však v bežnej podnikateľskej praxi podnikov skutočne využívané. Rozvoj mikro, malých a stredných podnikov obmedzujú viaceré bariéry (Lesáková, 2008; Marková & Lesníková, 2015), tieto podniky často bojujú o každého zákazníka a všetku energiu smerujú k dosiahnutiu zisku a zabezpečeniu platobnej schopnosti. Finančnú analýzu mnohé z nich považujú za neproduktívnu činnosť, na ktorú im nezostávajú kapacity. Naproti tomu veľké podniky často pôsobia nielen v národnom ale aj v medzinárodnom priestore, disponujú dostatočným objemom kapitálu a dostatok informácií pre efektívne riadenie je pre nich nevyhnutnosťou. Uplatňovanie systémového prístupu k riadeniu veľkých podnikov má podľa Musu, Krištofíka a Debnárovej (2014) významný vplyv na riziko, ktoré veľké podniky podstupujú na globálnom trhu.

## **2. Cieľ, materiál a metodika**

Cieľom príspevku je prezentovať výsledky výskumu zameraného na využívanie ukazovateľov finančnej analýzy pri riadení a kontrole finančnej situácie podniku. Zaujímá nás, ktoré z veľkého spektra ukazovateľov finančnej analýzy podniky pri finančnom riadení a kontrole aj skutočne využívajú. V príspevku overujeme predpoklad o závislosti rozsahu využívania finančných ukazovateľov od existencie podielu zahraničného kapitálu na základnom imaní podniku. Predpokladáme, že vstup zahraničného investora do vlastníckej štruktúry podniku, má vplyv na využívanie nástrojov a metód pri riadení a kontrole finančného hospodárenia a výkonnosti podniku. Zahraničný investor prináša svoje skúsenosti z externého prostredia a ovplyvňuje svojimi požiadavkami procesy finančného riadenia a kontroly finančnej činnosti podniku, požaduje pravidelné informácie o zhodnocovaní investovaných prostriedkov, čo sa premieta aj do rozsahu uplatňovania nástrojov finančnej analýzy pri riadení a kontrole finančného hospodárenia podniku. Predpokladáme preto vyšší rozsah (t.j. počet a frekvenciu) využívania týchto nástrojov v podnikoch s podielom zahraničného kapitálu na základnom imaní.

Primárnym informačným zdrojom sú údaje získané metódou opytovania formou dotazníka. Dotazníkový prieskum sme uskutočnili na výberovej vzorke podnikov so sídlom v Slovenskej republike. Vzorku podnikov sme vybrali jednoduchým náhodným výberom. Prieskumu sa zúčastnilo 224 respondentov všetkých veľkostných skupín s domácou (89,29 %) aj zahraničnou (10,71 %) majetkovou účasťou. Najvyšší podiel na úhrne respondentov tvorili mikro podniky (41,96 %). Malé podniky mali vo vzorke 32,14-percentné zastúpenie, stredné podniky mali 17,41-percentné zastúpenie, veľkých podnikov bolo 8,48 %.

Využívanie finančných ukazovateľov v podnikovej praxi sme sledovali pomocou podielu podnikov, ktoré označili, že daný finančný ukazovateľ využívajú, na celkovom počte podnikov, ktoré odpovedali na príslušnú otázku. Respondentov a ich odpovede sme rozdelili v jednotlivých veľkostných skupinách podnikov do dvoch skupín podľa podielu zahraničného kapitálu na základnom imaní podniku. Jednu skupinu tvorili podniky so 100 %-ným podielom domáceho kapitálu na základnom imaní (ďalej len domáce podniky), druhú skupinu tvorili podniky s podielom domáceho kapitálu na základnom imaní menej ako 100% (ďalej len

zahraničné podniky). Pri odpovediach na otázky mohli respondenti vybrať jednu alebo viac možností z ponúkaných odpovedí, prípadne odpovedať otvorenou formou. Zisťovali sme využívanie 70 základných finančných ukazovateľov (z toho: 8 ukazovateľov likvidity, 12 ukazovateľov rentability a výnosnosti, 20 ukazovateľov aktivity a produktivity, 8 ukazovateľov zadlženosti, 7 ukazovateľov štruktúry majetku a zdrojov financovania, 9 ukazovateľov trhovej hodnoty, 6 ukazovateľov hodnotenia investícií) vrátane frekvencie ich využívania.

Rozsah využívania ukazovateľov sme stanovili na základe počtu bodov, ktorý sa rovnal frekvencii využívania príslušného ukazovateľa počas roka. Celkový rozsah využívania ukazovateľov v príslušnom podniku, v skupine podnikov resp. v skupine ukazovateľov, bol tvorený súčtom rozsahov využívania jednotlivých skúmaných ukazovateľov.

Na základe našich predpokladov a vyššie uvedených teoretických východísk formulujeme nasledujúcu hypotézu.

*H: Predpokladáme existenciu pozitívnej závislosti medzi existenciou podielu zahraničného kapitálu na základnom imaní podniku a rozsahom využívania vybraných ukazovateľov finančnej analýzy.*

Hypotézu ( $H_0: \rho = 0$ ,  $H_A: \rho \neq 0$ ) overujeme v členení podľa jednotlivých veľkostných kategórií podnikov, meranej počtom zamestnancov, pre každú skupinu ukazovateľov samostatne, a za všetky ukazovatele spolu, pomocou Spearmanovho koeficientu poradovej korelácie a Somersovho d, na hladine významnosti  $\alpha = 0,05$ .

### **3. Vplyv zahraničných investorov na využívanie finančných ukazovateľov pri finančnom riadení a kontrole**

Pravidelná realizácia komplexnej finančno-ekonomickej analýzy podniku poskytne manažmentu a majiteľom súhrnnú informáciu o stave a vývoji finančného hospodárenia podnikateľského subjektu. Komplexnú finančno-ekonomickú analýzu finančného hospodárenia podniku realizuje celkom 75,6 % opýtaných respondentov, 95,8 % podnikov s účasťou zahraničného kapitálu na základnom imaní a 73 % domácich podnikov. Najvyšší podiel zahraničných podnikov analyzuje finančné hospodárenie komplexne s mesačnou periodicitou (30,4 %), s ročnou periodicitou (26,1 %), resp. štvrťročne (21,7 %). Najvyšší podiel domácich podnikov využíva pri komplexnej finančno-ekonomickej analýze ročnú periodicitu (33,3 %), prípadne nepravidelne, podľa potreby (29,8 %). Z uvedených výsledkov vidíme, že v podnikoch s podielom zahraničného kapitálu na základnom imaní pristupujú ku komplexnej analýze finančného hospodárenia častejšie. Svedčí o tom o 22,7 percentuálnych bodov vyšší podiel týchto podnikov v porovnaní s domácimi podnikmi, a tiež vyššia frekvencia realizácie analýzy, kedy 65,2 % týchto podnikov analyzuje finančné hospodárenie polročne a častejšie, kým s takouto frekvenciou analyzuje svoje hospodárenie len 35,9 % domácich podnikov.

Výskumom uplatňovania finančných ukazovateľov triedených do siedmich skupín podľa druhov sme zistili, že najvyšší celkový podiel respondentov (52,9 %), najvyšší podiel domácich podnikov (51,8 %) aj zahraničných podnikov (62,5 %) využíva ukazovatele likvidity. Rozdiely sme zistili v preferovanej frekvencii ich výpočtu. Kým domáce podniky preferujú mesačnú periodicitu výpočtu ukazovateľov likvidity, najvyšší podiel zahraničných podnikov uvádza periodicitu ročnú. Najvyšší, 70,8 %-ný podiel zahraničných podnikov využíva ukazovateľ likvidity 1. stupňa, 66,7 % likviditu 2. stupňa a okamžitú platobnú schopnosť. Domáce podniky

preferujú výpočet okamžitej platobnej schopnosti (68,3 %) a rozdielu objemu voľných peňazí a splatných záväzkov (61,6 %).

Druhým v poradí najvyšším podielom respondentov využívané ukazovatele, sú v zahraničných podnikoch ukazovatele štruktúry majetku a zdrojov financovania (61,3 %). Najvyšší podiel zahraničných podnikov (70,8 %) uvádza využívanie ukazovateľa podielu obežných aktív na aktívach celkom. Druhý najvyšší podiel domácich podnikov uvádza využívanie ukazovateľov hodnotenia investícií (45,3 %). 80,2 % domácich podnikov zaujíma rentabilita investície. Zahraničné podniky pri výpočte ukazovateľov štruktúry uprednostňujú hlavne ročnú frekvenciu, domáce podniky pri výpočte ukazovateľov hodnotenia investícií uprednostňujú nepravidelnú, resp. ročnú frekvenciu.

Tretou skupinou ukazovateľov v poradí, preferovanou zahraničnými podnikmi, sú ukazovatele aktivity a produktivity. Využíva ich 54 % týchto podnikov. 66,7 % zahraničných podnikov zisťuje produktivitu práce na pracovníka a účinnosť aktív, 62,5 % podiel finančného majetku a pohľadávok a ukazovateľ nákladovosti. Tieto ukazovatele počítajú prevažne mesačne. Domáce podniky, ako tretiu skupinu ukazovateľov v poradí, uvádzajú využívanie ukazovateľov štruktúry majetku a zdrojov jeho financovania (42,3 %). 48,2 % týchto podnikov zaujíma podiel obežných aktív na aktívach spolu, 42,1 % sleduje podiel dlhodobých pasív na dlhodobých aktívach, podiel krátkodobých aktív na aktívach spolu a podiel stálych aktív na aktívach spolu. Preferovanou periodicitou výpočtu u 11 % až 20 %-ách týchto podnikov je rok.

Štvrtý najvyšší podiel zahraničných podnikov (53,1 %) zaujímajú ukazovatele zadlženosti, hlavne o zadlženosť z obchodného styku (66,7 %) a podiel záväzkov k aktívam (62,5 %). Ukazovatele zadlženosti sledujú prevažne ročne. 41,3 % domácich podnikov využíva ukazovatele aktivity a produktivity. Sú to hlavne podiel pohľadávok a záväzkov (75 %), podiel finančného majetku a pohľadávok (53,7 %). Počítajú ich najčastejšie mesačne.

Podniky s podielom zahraničného kapitálu na základnom imaní ďalej zaujímajú investičné ukazovatele (52,8 %). Zaujíma ich hlavne rentabilita investície (88,9 %), doba návratnosti investície (83,3 %). Ukazovatele tohto druhu počítajú nepravidelne, podľa potreby. Piaty v poradí najvyšší podiel domácich podnikov (33,4 %) využíva ukazovatele zadlženosti. Pri výpočte ukazovateľov sa zameriavajú na rovnaké ukazovatele ako zahraničné podniky, t.j. na zadlženosť z obchodného styku (45,1 % domácich podnikov), podiel záväzkov k aktívam spolu (39 %) a krátkodobú zadlženosť (37,8 %). Výpočet zadlženosti realizujú hlavne ročne.

Na posledných dvoch miestach, šiestom a siedmom, v poradí podľa sledovaného podielu podnikov, sa umiestnili ukazovatele rentability a výnosnosti (využíva ich 46,2 % zahraničných podnikov a 31,8 % domácich podnikov) a ukazovatele trhovej hodnoty (29,6 % zahraničných podnikov, 11,1 % domácich podnikov).

Podniky s podielom zahraničného kapitálu na základnom imaní preferujú hlavne tieto ukazovatele rentability a výnosnosti: rentabilita aktív (66,7 %), prevádzková marža, rentabilita tržieb a výnosnosť vlastných zdrojov (58,3 %). Najvyšší podiel domácich podnikov uvádza používanie prevádzkovej marže (51,8 %), 51,2 % kontroluje rentabilitu tržieb a výnosnosť vlastných zdrojov. Ukazovatele rentability a výnosnosti obidve skupiny podnikov počítajú prevažne ročne.

Ukazovatele trhovej hodnoty patria medzi tie, ktoré využíva najnižší podiel domácich aj zahraničných podnikov. Z tejto skupiny ukazovateľov sú zahraničnými podnikmi používané čistý zisk na akciu a účtovná hodnota akcií (41,67 %), dividenda na akciu (33,3 %). Domáce



podniky používajú čistý zisk na akciu (14 %), ziskový výnos (13,4 %). Tieto ukazovatele počítajú podniky ročne.

Výskumom využívania týchto skupín ukazovateľov z hľadiska výskytu extrémnych hodnôt (maximálne resp. minimálne podiely podnikov) sme zistili, že vo všetkých prípadoch sú extrémne podiely podnikov u podnikov s podielom zahraničného kapitálu na základnom imaní vyššie, ako u domácich podnikov. Maximálne podiely sa vyskytujú v stredných a veľkých podnikoch, minimálne podiely v mikro a malých podnikoch.

Vertikálnu a horizontálnu analýzu finančných výkazov, ako samostatný nástroj kontroly výstupov finančného hospodárenia realizuje 62,5 % zahraničných a 46 % domácich podnikov. Minimálne 80 % zahraničných podnikov a 65,2 % domácich podnikov sa zameriava na horizontálnu a vertikálnu analýzu výnosov, nákladov a zisku s mesačnou, resp. ročnou periodicitou.

Predpovedné modely pri riadení a kontrole finančného hospodárenia využíva 29 % zahraničných aj domácich podnikov. 71,43 % zahraničných podnikov a 72,4 % domácich podnikov využíva tieto metódy pri hodnotení aktuálnej finančnej situácie, 42,8 % zahraničných podnikov a 26 % domácich podnikov ich využíva pri hodnotení finančnej situácie minulých období, resp. pri kontrole zostavených finančných plánov.

Vysvetliť vzťahy medzi finančnými ukazovateľmi, zdôvodniť ich veľkosť, zmeny a príčiny odchýlok, je jednou z fáz procesu odhaľovania vplyvu individuálnych ale aj globálnych rizikových faktorov na hospodárenie podniku. V tejto fáze majú podniky možnosť využiť viaceré metódy rozkladu finančných ukazovateľov, ku ktorým patria pyramidálny rozklad, aditívny rozklad, multiplikatívny rozklad, metóda reťazového dosadzovania a logaritmická metóda. Zisťovali sme, že najvyšší podiel (44,4 % zahraničných podnikov, 28,6 % domácich podnikov) používa práve pyramidálne rozklady syntetických finančných ukazovateľov na analytické. Ostatné metódy využíva maximálne 16,7 % zahraničných podnikov a maximálne 10,4 % domácich podnikov.

Zo štatisticko-matematických metód zahraničné podniky využívajú pri finančnom riadení najviac grafické metódy (80 %), výpočty priemerov (45 %), rozklady ukazovateľov (25 %). Tieto metódy využíva vyšší podiel zahraničných podnikov v porovnaní s domácimi podnikmi. Domáce podniky preferujú grafické metódy (52,7 %), výpočet priemerov (38,7 %) a bodové odhady (18,6 %).

Vyššie podiely využívania finančných ukazovateľov a vybraných metód riadenia a kontroly finančného hospodárenia sme zaznamenali v prevažnej väčšine prípadov v podnikoch s podielom zahraničného kapitálu na základnom imaní. Tieto zistenia evidujeme tiež v jednotlivých veľkostných skupinách podnikov. Z uvedeného dôvodu testujeme vyššie formulovanú hypotézu.

Výsledky testu formulovanej hypotézy uvádzame v tabuľke 1, ktorá obsahuje hodnotu symetrickej závislosti (Spearman Correlation) a hodnotu asymetrickej závislosti (Somers'd), pri ktorej závislou premennou je rozsah využívania ukazovateľov pri finančnom riadení a nezávislou premennou je vlastnícka štruktúra podniku. O platnosti nulovej hypotézy budeme rozhodovať na základe  $p$  – hodnoty (Sig.), ktorú sme merali obojstranným testom metódou Monte Carlo.

Table 1: Korelácia rozsahu využívania ukazovateľov a vlastnickej štruktúry podniku

Ukazovateľ	Metóda	Mikro podniky		Malé podniky		Stredné podniky		Veľké podniky		Podniky spolu	
		Hod-nota	Sig.	Hod-nota	Sig.	Hod-nota	Sig.	Hod-nota	Sig.	Hod-nota	Sig.
Ukazovatele aktivity a produktivity	Somers' d	0,623	0,000 <sup>b</sup>	0,390	0,003 <sup>b</sup>	0,480	0,007 <sup>b</sup>	0,401	0,039 <sup>b</sup>	0,652	0,000 <sup>a</sup>
	Spearman	0,187	0,000 <sup>b</sup>	0,172	0,003 <sup>b</sup>	0,246	0,007 <sup>b</sup>	0,343	0,039 <sup>b</sup>	0,295	0,000 <sup>a</sup>
Ukazovatele hodnotenia investícií	Somers' d	0,352	0,068 <sup>b</sup>	0,362	0,034 <sup>b</sup>	0,618	0,008 <sup>b</sup>	0,330	0,243 <sup>b</sup>	0,557	0,000 <sup>a</sup>
	Spearman	0,137	0,068 <sup>b</sup>	0,186	0,034 <sup>b</sup>	0,352	0,008 <sup>b</sup>	0,284	0,243 <sup>b</sup>	0,297	0,000 <sup>a</sup>
Ukazovatele likvidity	Somers' d	0,849	0,000 <sup>b</sup>	0,452	0,031 <sup>b</sup>	0,442	0,094 <sup>b</sup>	0,250	0,396 <sup>b</sup>	0,680	0,000 <sup>a</sup>
	Spearman	0,241	0,000 <sup>b</sup>	0,194	0,031 <sup>b</sup>	0,230	0,094 <sup>b</sup>	0,214	0,396 <sup>b</sup>	0,300	0,000 <sup>a</sup>
Ukazovatele rentability a výnosnosti	Somers' d	0,635	0,003 <sup>b</sup>	0,476	0,010 <sup>b</sup>	0,569	0,010 <sup>b</sup>	0,455	0,103 <sup>b</sup>	0,728	0,000 <sup>a</sup>
	Spearman	0,193	0,003 <sup>b</sup>	0,201	0,010 <sup>b</sup>	0,302	0,010 <sup>b</sup>	0,390	0,103 <sup>b</sup>	0,324	0,000 <sup>a</sup>
Ukazovatele štruktúry	Somers' d	0,614	0,006 <sup>b</sup>	0,136	0,472 <sup>b</sup>	0,330	0,213 <sup>b</sup>	0,557	0,040 <sup>b</sup>	0,538	0,000 <sup>a</sup>
	Spearman	0,221	0,006 <sup>b</sup>	0,066	0,472 <sup>b</sup>	0,179	0,213 <sup>b</sup>	0,480	0,040 <sup>b</sup>	0,271	0,000 <sup>a</sup>
Ukazovatele trhovej hodnoty	Somers' d	0,212	0,070 <sup>b</sup>	0,351	0,008 <sup>b</sup>	0,236	0,354 <sup>b</sup>	0,670	0,006 <sup>b</sup>	0,479	0,000 <sup>a</sup>
	Spearman	0,119	0,070 <sup>b</sup>	0,248	0,008 <sup>b</sup>	0,158	0,354 <sup>b</sup>	0,621	0,006 <sup>b</sup>	0,340	0,000 <sup>a</sup>
Ukazovatele zadlženosti	Somers' d	0,640	0,002 <sup>b</sup>	0,420	0,018 <sup>b</sup>	0,550	0,042 <sup>b</sup>	0,375	0,180 <sup>b</sup>	0,602	0,000 <sup>a</sup>
	Spearman	0,229	0,002 <sup>b</sup>	0,200	0,018 <sup>b</sup>	0,297	0,042 <sup>b</sup>	0,324	0,180 <sup>b</sup>	0,302	0,000 <sup>a</sup>
Ukazovatele spolu	Somers' d	0,499	0,000 <sup>a</sup>	0,327	0,000 <sup>a</sup>	0,419	0,000 <sup>a</sup>	0,338	0,000 <sup>a</sup>	0,543	0,000 <sup>a</sup>
	Spearman	0,175	0,000 <sup>a</sup>	1,158	0,000 <sup>a</sup>	0,229	0,000 <sup>a</sup>	0,292	0,000 <sup>a</sup>	0,274	0,000 <sup>a</sup>

a. Based on 10000 sampled tables with starting seed 2000000.

b. Based on 10000 sampled tables with starting seed 1384345843.

Source: Vlastné spracovanie

Z výsledkov, uvedených v tabuľke 1 vidíme, že vo veľkej väčšine prípadov, s výnimkou prípadov, kedy je  $p$  – hodnota vyššia ako zvolená hladina významnosti (v tabuľke uvedené kurzívou), môžeme na zvolenej hladine významnosti  $\alpha = 0,05$  zamietnuť nulovú hypotézu a prijať alternatívnu hypotézu. Môžeme tvrdiť, že existuje pozitívna závislosť medzi rozsahom využívania vybraných ukazovateľov finančnej analýzy a existenciou podielu zahraničného kapitálu na základnom imaní podnikov. Toto tvrdenie (s výnimkou prípadov uvedených v tabuľke 1 kurzívou) platí tak pre jednotlivé druhové skupiny ukazovateľov a pre všetky ukazovatele spolu, ako aj pre jednotlivé veľkostné skupiny podnikov a všetky podniky spolu. Intenzitu závislosti interpretujeme podľa Cohena (1988) ako slabú, pri ktorej sa absolútna hodnota Somersovho  $d$  resp. hodnota Spearmanovho koeficientu korelácie pohybuje v intervale od 0,1 do 0,3, strednú závislosť (pre hodnoty v intervale od 0,3 do 0,5), silnú (pre hodnoty v intervale od 0,5 do 0,7) až veľmi silnú (pre hodnoty v intervale od 0,7 do 0,9). Silnejšie závislosti evidujeme výpočtom asymetrickej závislosti pomocou Somersovho  $d$ . Z hľadiska členenia výsledkov podľa druhu ukazovateľov, zistujeme veľmi silnú závislosť rozsahu využívania ukazovateľov rentability a výnosnosti od existencie podielu zahraničného kapitálu na základnom imaní podniku ( $d = 0,728$ , Sig. = 0,000). Z hľadiska členenia výsledkov podľa veľkostnej kategórie podnikov evidujeme najvyššiu intenzitu závislosti v mikro podnikoch ( $d = 0,499$ , Sig. = 0,000). Bez ohľadu na druhovú skupinu ukazovateľov resp. veľkostnú skupinu podniku zistujeme pomocou Somersovho  $d$  silnú závislosť rozsahu využívania ukazovateľov

finančnej analýzy pri riadení a kontrole finančného hospodárenia podniku ( $d = 0,543$ ,  $\text{Sig.} = 0,000$ ). Pomocou Spearmanovho koeficientu korelácie sme tu zistili slabú závislosť ( $r_s = 0,274$ ,  $\text{Sig.} = 0,000$ )

#### 4. Conclusion

Z výsledku výskumu vyplynulo, že podniky, s existenciou zahraničného kapitálu na základnom imaní, využívajú nástroje a metódy finančno-ekonomickej analýzy v podobe finančných ukazovateľov a rôznych matematicko-štatistických postupov častejšie, ako podniky, na základnom imaní ktorých zahraničný kapitál neparticipuje. Z uvedených výsledkov môžeme konštatovať, že globalizačné vplyvy sa prejavujú aj v oblasti využívaných metód a nástrojov finančného riadenia. Prezentované výsledky dokumentujú štatisticky významnú závislosť medzi účasťou zahraničného kapitálu na základnom imaní a rozsahom uplatňovania skúmaných finančných ukazovateľov.

Výskumom využívania jednotlivých ukazovateľov pri finančnom riadení a kontrole zahraničných podnikov sme zistili, že medzi päť ukazovateľov, ktoré využíva najvyšší podiel týchto podnikov, patrí rentabilita investície (88,9 %), doba návratnosti investície a podiel pohľadávok a záväzkov (83,3 %), a ukazovateľ likvidity prvého stupňa a podiel obežných aktív k aktívam spolu (70,83 %). V podnikoch, ktoré v základnom imaní neevidujú zahraničný kapitál, sú to ukazovatele rentability investície (80,2 %), doba návratnosti investície (76,7 %), podiel pohľadávok a záväzkov (75 %), okamžitá platobná schopnosť (68,3 %) a rozdiel objemu voľných peňažných prostriedkov a splatných záväzkov (61,6 %).

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## MODERN GLOBAL TRENDS IN ENTERPRISE REENGINEERING MANAGEMENT

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**Abstract.** The paper deals with the question of enterprise reengineering management in the modern global changeable environmental conditions for competitive growth of Russian business. It is referred to identification of the competitive potential of Russian enterprises in the conditions of tough competition, globalization and uncertainty. Reengineering is considered as a requirement for an enterprise innovative development. The authors define the principal directions for measurement of changes and cushioning of risks; reason the choice of growth rate of enterprise development; consider the model of enterprise reengineering management. Engineering companies are initiators of activity for numerous participants of technological projects realization, getting involved into their work if necessary to achieve maximum efficiency of their realization. Not material product is realized on this market, but an individual service which has no compatibles at the date of making of contract and realizing of which is related to high technical risk. That is why a client accrues the right to use the scientific and technological potential of the developer (engineering company) and its subcontractors only from the pay for eventual outcome. As tools we used the methods of economic analysis of business performance, strategic management approach, innovation management, financial management, administrative diagnostics, business reengineering, and such general scientific approaches as analysis and synthesis, system approach to business external and internal environment, social and economic conditions and processes, forming generalized criteria and operating rates.

**Keywords:** global business processes reengineering, development control, competitiveness, innovative enterprise, management of change

**JEL Classification:** M1, L2, C6

### 1. Introduction

In modern global conditions any enterprise faces the challenge of carrying out periodic task-oriented reengineering, work restructuring for the purpose of survival, saving its market power or further development in the changeable competitive conditions. An enterprise's goal is to survive, to develop today and in the long term, to bring operation of business to infinity. Considering that in whatever way we define the development process, it always has its limit. While nearing to the limit the income and volume of sales decrease, costs escalate, competition's influence increases. When one competitor nears to the limit of development, the others study

alternative processes with higher limits on the base of background experience and new knowledge integration.

Unconditional and urgent necessity of reengineering of modern enterprises, as it was exactly determined by the experts in reengineering Michael Hammer and James Champy, is conditioned by separate and joint effect of so-called three "C's" forces (Clients, Competition, Change) which form new external environment and it is evident that businesses, created to function in one environment, can not perform well in other, dramatically changed environment.

## 2. Method

As tools we used the methods of economic analysis of business performance, strategic management approach, innovation management, financial management, administrative diagnostics, business reengineering, and such general scientific approaches as analysis and synthesis, system approach to business external and internal environment, social and economic conditions and processes, forming generalized criteria and operating rates.

## 3. Theory

Engineering is an English word which means machinery, projecting, design. Business engineering is the system of methods and techniques used to create business which can achieve the enterprise's goals. This term includes business projection procedures, knowledge allowing to measure the efficiency of the invested capital, invention and so on. Reengineering expresses reconstruction or reorganization. The term was introduced for scientific use by an American scholar Michael Hammer in early 90s, XX century. Russian scholars define this term as follows: "Business reengineering is fundamental change of the existing management and production structure of a company, based on interaction of distinguished processes (as is in engineering). That is why reengineering is a derived concept of engineering and expresses projecting or change of the existing structure of management and production of an enterprise and its overall business (Bagautdinova N.G. & Safiullin L.N., 2014), (Shigabieva A.M. et al., 2014), (A.I. Podgornaya et al., 2015).

Some authors considered engineering as "a definite form of export of services (transfer of knowledge, technology and experience) from a country of production to an ordering country". Engineering includes integrated research on feasibility study, package of project documents and working-out recommendations on production and control engineering, equipment operation and end product sale (Leshchuk, V., et al., 2015), (Kabaale, E. & Kituyi, G.M., 2015), (Nadarajah, D. et al., 2015).

To select the following features of engineering:

1. in format - it is a service to material production business on the commercial basis;
2. in matter - service package including designing, turnkey construction, completing, putting in operation, adjustment and test operation of construction project;
3. in goals - finishing high-technology scientific research results to production stage;
4. in field orientation - industry, construction, agriculture etc.

So, engineering is providing package of services to different companies (clients) in design, construction, completing, putting in operation, adjustment and test operation of construction project on the commercial basis for the purpose of realization of technologically highly risk

investment projects. Engineering companies activity is an important factor of introduction most recent scientific achievements to the national economy. Complex character of engineering services means that the process of any technological project's realization is long in time and heterogeneous in the structure of carried out operations. In general we can specify four rough stages of the complete cycle of engineering services in the sphere of real investing:

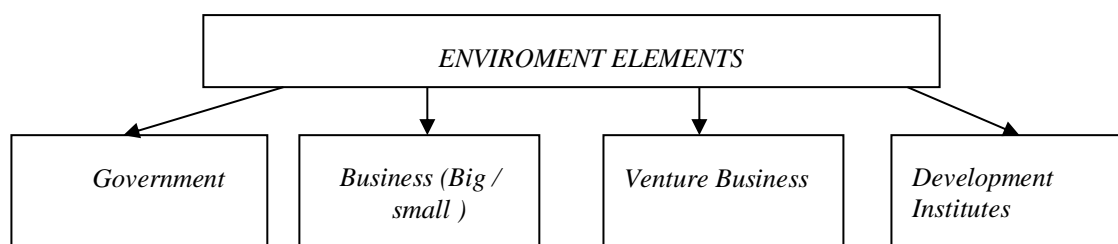
1. project stage - pilot studies of marketing feasibility of the project, technical capabilities of its realization, feasibility study preparation;
2. designing - project documents, master plot plans, schemes, drawing design drafting etc;
3. post-project stage - preparing orders for equipment, construction-engineering works, control on production of equipment and course of installation and construction works;
4. advisory services on project operation after the start-up and end product sale.

Engineering companies are initiators of activity for numerous participants of technological projects realization, getting involved into their work if necessary to achieve maximum efficiency of their realization. Besides, the engineering companies' activity is a factor of pioneer products and technologies introduction into real sector of economy. It is important to note that consultative component of engineering is not its characteristic feature as this type of business service is primarily a way of large industrial projects realization and a method of introduction of research and technology achievements into an enterprise practical activities (Cherukupalli, P. & Raghu Reddy, 2015).

Thus, developing of a special business of particular research and technology services aimed at developing scientific achievements to production stage was the result of transformation of brain capital into essential production factor. All over the world these engineering services are provided by specialized companies which create conditions for introduction of scientific-and-technical progress achievements in production. The same tendency is observed in Russia (A. Podgornaya & S. Grudina, 2015). The conditions of modern industrial production make it more effective for the most of companies to engage engineering firms for adjustment, testing and maintenance of new technology and equipment rather than to find additional resource for training the existing personnel.

Hereby, innovative activity in primary industries is now inconceivable without work of specialized engineering companies. Moreover, when realizing complex many-component projects, an engineering company is not only a "conduit" of scientific research achievement to enterprise's practical activities but also a control center which coordinates the work of all investment process parties and provides quantitative and qualitative performance of a project. Figure 1 presents the environment elements.

*Figure 1: Environmental elements*



In the modern global trends in enterprise reengineering management environmental signals can be divided into three groups. In the first group of signals threats and possibilities of the

external and internal environment are equal, strong and weak points are equal. In the second group threats and possibilities are not equal and in the internal environment there are more strong points than weak. In the third group there are more threats than possibilities, there are more weak points than strong ones.

*Table 1: The model for the analysis of crisis signals at the modern global trends in enterprise reengineering management*

<i>Threats= Possibilities</i>	<i>Threats&lt; Possibilities</i>	<i>Threats&gt; Possibilities</i>
<i>The initial stage of life cycle</i>	<i>The life cycle growth stage</i>	<i>The life cycle drop stage</i>
<i>Readiness to implement projects of any complexity</i>	<i>Gaining experience in realization of innovative projects</i>	<i>Choosing the easiest projects for realization</i>
<i>Strong motivation to make an innovative product</i>	<i>Ability to generate an innovative product</i>	<i>From generating to intellectual property protection</i>
<i>High potential of knowledge refreshment</i>	<i>The competition is around new knowledge</i>	<i>Exchange of knowledge specific features</i>
<i>Example: a young consulting company, enterprise (flash-memory inventing by Toshiba)</i>	<i>Example: the way to manage the Amazon company</i>	<i>Example: the experience of «3M» company].</i>

Let's consider the signals of the first group. Here we will refer the negative macroeconomic trends which strengthen uncertainty of successful realization of an innovative product, the unstable market conditions leading to forming of nonobjective understanding the potential demand, unpredictable activities of competitors, difficulties in choosing reference points at entering the market, attracting investments is complicated, growth of information asymmetry. The positive signals are: the activated capital share slowly increases, the potential share is maximum, strong and weaknesses are equal when analyzed. The base which forms the crisis is to be searched in weaknesses of the internal environment of the enterprise (Radosevic, M et al., 2015). For example, inaccuracy in marketing researches, unjustified overestimation of the costs, partially estimated risk level, downsides of power distribution and others. As an example, the strategies which lead to anti-recessionary immunity forming in case of the given signals can be: licensing and patent protection, accumulating of working capital at the expense of self-financing, use of state orders, joining the major manufacturer and different projects in effect. In case of availability of irresistible competitive advantage it can also be intensive development of a product.

The signals of the second group we will call aggression of the environment, bureaucratic barriers in development of business, attempts of copying of a product, the dumping, zero demand, a segmentary competition, sharp growth of the amounts of works, increasing financial flows, quantity indicators exceed qualitative ones at decision-making. Positive signals: an excessive demand, increase in quantity of regular customers, a competition as equals and so on. Environment threats gradually become more and more numerous, there is direct growth of the possibilities, the available reserves are promptly spent. Professional burning out, disbalance in the purposes and values, corruption in authority functions, the threats of creation of competitive companies, who copy innovations, moral or technological depreciation of capacities, system errors can be the crisis sources. As an example, the strategy leading to forming of anti-recessionary immunity in this case can be: production of a unique product, with the raising price, non-standard, simple decisions, capitalization of human potential, trust forming for an exchange of experience and knowledge between employees, effective concentration and distribution of resources, use of tools of aggressive marketing, lobbyism of interests in product promotion (An, J.-W. & Zhang, Z.-Q., 2013).



The signals of the third group are difficulties in access to external resources, a capital withdrawal and decrease in competitive advantages. Threats exceed the possibilities, absence of the potential capital, a strong deterioration of actives (Rrezaie, K. et al., 2013).

Table 2: Presents examples of synergies relating to the value drivers (elements of reengineering).

Value driver (signal)	Examples of some possible synergies (elements of reengineering)
Increase sales growth	Use Target distribution network for Bidder product, or vice versa. Complementary products can increase volumes for both.
Increase operating profit margin	Cost efficiencies.
Reduce cash tax rate	More tax- efficiencies
Reduce incremental investment in capital expenditure	Combine operations and sell off surplus assets
Reduce investment in working capital	Combine operations and reduce inventories
Increase time period of competitive advantage	Strengthened branding

Let's consider an innovative approach to aggregated model system construction for decision making on reengineering administration. It is based on core open model of a company life support model and a model of status of intermediate developing enterprise with the mechanism of correction of realized changes providing an enterprise reengineering by means of adaptation to the most probable changeable external environment in the course of planned reform realization. The basic model with minority of variables or restrictions is reorganized.

The generalized change management model in the course of an enterprise reengineering reflects the requirements of the theory of systems and financial analysis to this process, outlines the working range on providing the tools that allows to consider the changes in the course of reengineering within the consolidated process with due consideration of the enterprise global external environment conditions and with emphasis on relation, interdependence and interaction of different aspects of its functioning in this environment (Kirshin I.A., 2013), (Hess, T. & Schuller, D., 2012), (Ryashchenko, V.P., 2012, A), (Ryashchenko, V.P., 2012, B).

According to our research from a perspective of systems theory, the process of global enterprise reengineering can be presented as transformation of some business process  $\mathbf{B}_1$  (having a certain effect  $\mathbf{E}_1 = \{\mathbf{r}_{1j}\}$ , providing feasibility of some results  $\mathbf{r}_{11}, \mathbf{r}_{12}, \dots, \mathbf{r}_{1j}$  ( $\mathbf{R}_1 = \{\mathbf{r}_{1j}\}$ ), meeting some requirements  $\mathbf{n}_{11}, \mathbf{n}_{12}, \dots, \mathbf{n}_{1j}$  ( $\mathbf{N}_1 = \{\mathbf{n}_{1j}\}$ ) with a definite quality  $\mathbf{q}_{11}, \mathbf{q}_{12}, \dots, \mathbf{q}_{1j}$  in every realization  $\mathbf{r}_{1j}$ ) into business process  $\mathbf{B}_2$  with a relevant characteristic on effect  $\mathbf{E}_2$  (characterized by its set of results, requirements and properties). At that aggregative quality rating  $\mathbf{Q}_{E1} = \{\mathbf{q}_{1j}\}$  and  $\mathbf{Q}_{E2} = \{\mathbf{q}_{2i}\}$  at realization of requirements  $\mathbf{N}_1 = \{\mathbf{n}_{1j}\}$  и  $\mathbf{N}_2 = \{\mathbf{n}_{2i}\}$  acts as effect (quality) rating of business processes  $\mathbf{B}_1$  and  $\mathbf{B}_2$ .

When  $\mathbf{R}_1$  and  $\mathbf{R}_2$  align with potential quality of business processes  $\mathbf{B}_1$  and  $\mathbf{B}_2$ , the enterprise reengineering management can be presented in the following way (Eq. 1):

$$\mathbf{B}_1 : \mathbf{Q}_1 \equiv \mathbf{Q}_{E1}, \mathbf{E}_1 \equiv \mathbf{R}_1 \rightarrow \mathbf{B}_2 : \mathbf{Q}_2 \equiv \mathbf{Q}_{E2}, \mathbf{E}_2 \equiv \mathbf{R}_2 . \quad (1)$$

It should be noted that at the enterprise restructuring a new need  $\mathbf{N}_2 = \{\mathbf{n}_{2i}\}$  is the extension of totality of needs  $\mathbf{N}_1 = \{\mathbf{n}_{1j}\}$ , wherefrom it follows that  $\mathbf{N}_1$  and  $\mathbf{N}_2$  are subaggregate of some universal set  $\mathbf{N}$ , which determines the belonging of the given needs type.

## 4. Conclusion

This circumstance makes it possible to draw the following conclusions for developing the range of aggregated models of reengineering of business processes at enterprises:

1. As a builder of business process B2 (a new enterprise in the course of its reengineering) to realize the need N2 an existing business process B1, its elements, bonds and structure must be used.
2. In the course of a new business process (B2) it is required to reconsider the structure and to reform each element and business process B1 in the course of evaluation of their value in the new business process (B2) with due consideration of involving new components into business process B2 (which are not elements of B1) and bringing them into relevant relations with other elements and processes of business process B2.
3. As a result of alteration of business process B1 some intermediate developing business process B12 is formed, continuous monitoring of which (at a level of experimental evaluation of functional quality Q12 on particular realizations R2 and evaluation of complete quality Q2) makes an opportunity to evaluate the sufficiency of carried out reorganization of the enterprise in terms of its transfer to the new level of functioning.

The stated factors condition appearing of engineering services as a specific commercial product and predetermine their further development.

The global engineering market is a specific innovations market segment. Not material product is realized on this market, but an individual service which has no compatibles at the date of making of contract and realizing of which is related to high technical risk. That is why a client accrues the right to use the scientific and technological potential of the developer (engineering company) and its subcontractors only from the pay for eventual outcome. The global business engineering, considered interrelated system of models, procedures and works can be characterized as business optimization and reengineering.

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# NEGATION PHENOMENA OF CULTURAL AND SOCIAL PROCESSES OF GLOBALIZATION IN THE MODERN DAY IN EUROPEAN EMPLACEMENT: DISTRIBUTION OF CZECH- SLOVAKIA IN THE CONTEXT OF NATIONAL LITERATURE AND LANGUAGE

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**Abstract.** Globalization on the platform in the current literature may expose several parallel phenomena, but which probably are not consolidating element, but on the contrary - just globalization tendencies finally paradoxically encourage in particular the specific national literature and distinctive characters. Slovak republic has created on January 1<sup>st</sup> 1993 after the disintegration of Czech-Slovak Federation and this change is, quite understandably, strongly reflected also in the field of culture and therefore both national literature - the Czech Republic and Slovakia. The indisputable fact is however considered that Slovak literature has been for many years with the Czech 'linked', or at least a kind of special bond "concurrent". The distribution of the common state of Czechs and Slovaks in 1993 caused division into separate national literatures, as if to "stolen" conditions. While the Czech and Slovak language as well as their mutual understanding as predestined, and offered a rare opportunity, a chance to share the work in the original, in the original language without translation, but eventually the situation has resulted in a state where the two languages become progressively younger generations indeed strangers. Only later, after the end of nearly twenty years and they are recognized by the Czech writer, that Slovak literature is suddenly lost for them.

**Keywords:** globalization, Slovak and Czech literature, language, cultural and social alienation

**JEL Classification:** Z11

## 1. Introduction

1. januára 1993 vznikla Slovenská republika rozdelením Česko-Slovenskej federácie. V dobe, kedy sa transparentne prejavujú, a následne uplatňujú, globalizačné tendencie, a formujú tak politické, ekonomické, spoločenské, ale i kultúrne a umelecké, pohyby a zmeny v krajinách (nielen) európskeho geopriestoru, sa rozdelenie spoločného štátu dvoch národov môže javiť ako kontraproduktívne, či dokonca výhradne antiglobalizačné. Táto skutočnosť je však paradoxne len súčasťou globalizačných procesov v súčasnej Európe, čo napokon potvrdzuje napríklad aj Mistrik, keď tvrdí, že „v súčasných kultúrnych procesoch v Európe je možné pozorovať dve tendencie: prijímanie spoločných hodnôt a súčasne vznik nových hodnôt neprijímaných spoločne. Je možné pozorovať vnútornú globalizáciu európskej kultúry aj jej vnútornú diferenciáciu. Spoločné (v histórii sa objavujúce) piliere a hodnoty sa v celom

európskom regióne upevňujú – ale súčasne sa hodnoty na úrovni individua, regiónov, spoločenstiev diferencujú.“ (Mistrík, 2003).

Ak sa globalizácia spomína v spojení s národným štátom, ako proklamuje Hoffmanová, „upozorňuje sa zvyčajne na to, že v dôsledku globalizácie ekonomiky národný štát prichádza o suverenitu, alebo aspoň o jej časť.“ (Hoffmanová, 2003). Ďalším faktorom, ktorý súvisí s globalizáciou a má dopad na suverenitu národných štátov, ako uvádza ďalej Hoffmanová, je akési „narastanie morálnej uvedomelosti medzinárodného spoločenstva, ktoré si vytvára normy, stojace v dôležitosti nad tradičnou doktrínou štátnej suverenity.“ (Hoffmanová, 2003).

Pojem „globalizácia“ napokon možno používať, a akceptovať, v mnohých a rozličných kontextoch. Jedná z možných rozmerov interpretácie globalizácie je napokon aj sociálna, ktorá formuje, a podistým i výrazne determinuje, jej uplatňovanie, šírenie a pôsobenie aj v oblasti kultúry, umenia, a teda aj literatúry. Bernard G. Gunter a Rolph van der Hoeven vnímajú globalizáciu ako „postupné zlučovanie ekonomík a spoločností, podporovaných novými technológiami, novými ekonomickými vzťahmi, národnou a medzinárodnou politikou a širokého spektra subjektov, vrátane vlád, medzinárodných organizácií, podnikateľského prostredia a, samozrejme, občianskej spoločnosti.“ (Gunter & Van der Hoeven, 2004).

Uvedení autori tvrdia, že z koncepčného hľadiska je užitočné rozdeliť proces globalizácie na dve časti. Prvá v sebe zahŕňa obchod, investície, technológie, cezhraničné výrobné systémy, informačné toky a komunikačné sféry. Druhý aspekt globalizácie sa potom týka zvýšeného úsilia o „homogenizáciu“ politiky obchodu, liberalizácie kapitálového trhu, dodržiavania medzinárodných dohôd týkajúcich sa duševného vlastníctva. (Gunter & Van der Hoeven, 2004).

George Soros v roku 2002 globalizáciu vnímal ako mnohovýznamovú kategóriu, keď ju nazýval rozvojom globálnych finančných trhov, rastom nadnárodných korporácií a ich čoraz väčšej vlády nad národnými ekonomikami, avšak tento rast vnímal taktiež v oblasti informácií, kultúry, internetu, zvýšenej mobility či komercializácii myšlienok. (Soros, 2002).

Fenoménom globalizácie v literatúre krajín Latinskej Ameriky sa zaoberal Gustavo Guerrero v článku *Literatúra, národ a globalizácia v Latinskej Amerike*, tému globalizácie v literatúre pertraktuje taktiež Alison Gibbons, pričom svoj hlavný záujem v uvedenom kontexte obracia na fenomén textuality, využitia technológií a na postavenie literatúry po globalizácii v štáte a národe. Efstratia Oktapodová sa zase vo svojom príspevku na medzinárodnej konferencii (International Conference on Literature, Discourse and Multicultural Dialogue) zaoberá reláciami globalizácie a multikulturalizmu v literatúre písanej po francúzsky. Uvedená autorka vníma fenomén globalizácie v oblasti literatúry výrazne pozitívne, keď tvrdí, že viedla k objavu nových literatúr, ktoré obohacujú svetovú literatúru. Miliómy čitateľov, podľa Oktapodovej, „objavili na konci minulého, a v novom tisícročí, nespočetné množstvo vzdialených literatúr práve prostredníctvom globalizácie kultúry.“ (Oktapoda, 2013).

V kontexte literárnej globalizácie, resp. globalizovanej literatúry, predovšetkým z pohľadu histórie, je inšpiratívna štúdia Johna Neubauera, ktorý o. i. tvrdí, že skúmanie regionálnej (národnej) literárnej histórie „má dvojaký význam pre globalizáciu: poskytuje regionálne modely, ktoré môžu byť aplikované do ďalších regiónov, a zároveň predstavuje konkrétne kroky smerom k globálnom poňatiu literárnej histórie.“ (Neubauer, 2015).

Neubauer okrem iného vo svojej štúdií tiež hľadá spôsob ako určiť v literárnej histórii globálne parametre, ktoré by pomohli zosynchronizovať výklad prechodu rôznych literárnych

periód od jednej k druhej. Je pritom evidentné, že tradične chápané literárne obdobia boli založené a podmienené vlastnosťami literárnych diel, zvyčajne v kombinácii so sociálnymi podmienkami, politickými pomermi, či jazykovými ohraňčeniami (Neubauer 2015). Riešenie je azda v identifikácii kostrových globálnych štruktúr, ktoré by našu pozornosť sústredili na používanie technológií v písaní a komunikácii, ktoré nedávno pritiahli širšiu pozornosť práve v kontexte digitalizácie (Neubauer, 2015).

Otázky duševného vlastníctva úzko a určujúco súvisia s kultúrnym, umeleckým, vedeckým aspektom spoločnosti, a globalizácia v tomto kontexte „hrá“ významnú rolu, už nie ako fenomén, ale fundamentálny činiteľ a tvorca.

## 2. Literatúra verzus globalizácia

Globalizácia sa transparentne prejavuje taktiež vo sfére kultúry, umenia a kreatívnych ľudských činností, literatúru nevynechávajúc. Práve v tejto oblasti je v súčasnosti na Slovensku zrejma tendencia, akoby unifikujúceho, všeobecného dopytu po literárnych dielach tzv. „nižšieho“ žánru v beletrii, ktorý sa teší čoraz širšiemu čitateľskému záujmu. Za posledné desaťročie mnohí slovenskí vydavatelia, po vzore veľkých európskych, či amerických vydavateľstiev, zaradili postupne do svojej ponuky napríklad, čoraz populárnejšie, kuchárske knihy alebo tiež motivačné, či tzv. „ezoterickú“ literatúru.

Globalizácia v literatúre, predovšetkým v beletristickej tvorbe, však naďalej môže pôsobiť, exponovať skôr kontraindikované fenomény a evidentné negatívne pohyby. Každá národná literatúra, ako napokon všetky druhy umenia, je predsa determinovaná, okrem historicko-dejinného, aj sociálnym a geopolitickým pôsobením, nie menej potom i kultúrnou a umeleckou osobitosťou a jedinečnosťou. Práve tento znak sa, v kontexte príspevku, prejavoval v slovenskej a českej literatúre ešte pred samotným rozdelením spoločného štátu. Nakoniec, v tejto súvislosti je významný a určujúci práve fakt, že nikdy neexistovala žiadna „česko-slovenská“ literatúra. Aj v rámci jedného štátu dvoch národov, bola vždy separátne exponovaná česká, a potom slovenská literatúra, ako autonómne súčasti spoločného československého kultúrneho, spoločenského a umeleckého spektra.

Ihab Hassan sa zaoberá fenoménom literatúry v dobe globalizácie, a kladie si otázku, či práve globalizácia nemá tendencie prijímať národné literatúry za zastarané. (Hassan, 2010). Vo svojom článku Hassan analogicky vkladá, a aplikuje, atmosféru v národných literatúrach pod vplyvom globalizácie do zrejmej komparácie, či prirodzeného prenikania s románom Jamesa Joycea *Finneganovo prebúdzanie* (Finnegans Wake). Spomínaný román vyšiel 4. mája 1939 (17 rokov po slávnom diele *Ulysses*) a dodnes je považované za jedno najzložitejších diel svetovej prózy. Týmto dielom Joyce dosiahol akoby vrchol toho najextrémnejšieho literárneho experimentu nielen svojej doby. Próza je syntézou, či skôr mátežou, slovných hračiek a kalambúrov z mnohých európskych jazykov, roviny minulosti sa prelínajú s budúcnosťou skrz prítomnosť; dejová línia, aj obsahový rámec sú ambivalentné, inherentne pohlcujúce jednotlivé zložky narácie do seba a navzájom. Práve v tomto diele Joyce uplatnil neologizmus „jenglish“, ktorého významom Hassan pripodobňuje situáciu v národných literatúrach v dobe globalizácie. Situácia sa, podľa Hassana, v literatúre pod vplyvom globalizácie mení. Kedysi výrazný étos literatúry, napríklad z 19. storočia, zmutoval, a pod vplyvom rôznych geopolitických tlakov sa prejavil v ešte väčšej jazykovej diverzii a duchovnej izolovanosti. Do dneška však vraj v literatúre i naďalej pretrvalo napätie medzi aspektami univerza a konkrétnosti. (Hassan, 2010).

Komparáciou národných literatúr v determinácii vplyvov a dosahov globalizácie sa vo svojich štúdiách zaoberajú aj ďalší autori. Napríklad v roku 2010 Vilashini Cooppan publikuje svoju štúdiu na tému komparácie národných literatúr v dobe globalizácie v časopise *Modern Philology*. Rok predtým, pod rovnakým názvom (*Comparative Literature in an Age of Globalization*), vyšiel v časopise *College Literature* text autora Lihenga Chena, ktorý v kontexte uvedenej problematiky o. i. proklamuje v súčasnosti (2009) nárast prekladov čínskej literatúry do mnohých jazykov a následnej komparácie čínskej literatúry s ostatnými národnými literatúrami v Ázii a taktiež s literatúrou západu. Napriek tomuto faktu Chen konštatuje, že napríklad na univerzitách v Taiwane neexistujú študijné programy, ktoré by sa venovali komparatistike v literatúre, hoci tu fungujú mnohé katedry zamerané na výučbu literatúry. (Chen, 2009).

Suzanne Choová sa zase zaoberá teoretickými aspektmi vytvárania učebných osnov z literatúry pod vplyvom globalizácie, keď zvažuje, či pri koncipovaní akejkoľvek „binárnej“ osnovy literatúry, môže byť do nej implementovaný „hybridný priestor zahŕňajúci obe hodnoty utilitarizmu a humanizmu, pragmatizmu aj idealizmu.“ (Choo, 2011). Táto štúdia dokazuje, ako spomínané študijné osnovy literatúry dostatočne pripravujú študentov pre svetové trhy práce, kde sa očakáva, že budete mobilný, aby bolo možné prirodzene sa presúvať medzi rôznymi komunitami, že budete komunikovať s rôznymi skupinami ľudí, a budete kultivovať svoje dispozície vzťahujúce sa k kozmopolitnej zvedavosti, otvorenosti a empatie voči ostatným. (Choo, 2011).

Digitalizácia, predovšetkým ako súčasný globálny fenomén, a vôbec využívanie technológií v oblasti literatúry (nielen) na Slovensku predstavuje dnes činnosť početných digitálnych médií, ktoré sú programovo zamerané práve na publikovanie textov nielen etablovaných literárnych tvorcov, ale aj mladých a začínajúcich autorov. Takéto digitálne médiá sú aktívne v prostredí internetu a poskytujú autorom príležitosť okamžitej konfrontácie s čitateľom, resp. literárnym kritikom, taktiež však sprostredkúva relácie medzi čitateľmi, záujemcami, odbornou, ale i laickou verejnosťou v kontexte uverejňovania umeleckého textu a jeho následnej reflexie. Nové médiá tak v uvedenej oblasti majú tendenciu byť k printovým väčšmi alternatívou ako substitučným elementom.

Napokon, paradoxne, a čoraz častejšie sa ozývajú dnes už aj hlasy upozorňujúce na nebezpečenstvo číhajúce na človeka vo virtuálnom priestore, v tzv. virtuálnej realite. Americký novinár a spisovateľ Steve Lohr celkom otvorene priznáva svoje obavy o bezpečie pri „pobyte“ v internetovej sieti, ktoré nazýva „terárium“: „Zdá sa, že život v mediálnom komunikačnom terárii je čoraz nebezpečnejší. Predpovede zániku sa hromadia. telefónne hovory, e-mail, blogy a Facebook sa náhlia podľa nedávnych vyjadrení expertov na informačné technológie do vlastného hrobu. Minulý týždeň časopis *Wired* vyhlásil: 'Web je mŕtvy.'“ (Lohr 2010). Už aj vzhľadom na dátum publikovania tohto článku (rok 2010...) je evidentné, že žiadny masový exodus informačných technológií a ich „zákonitý“ zánik nateraz ešte stále nehrozí, skôr naopak.

Lohr neostáva len pri predpovedi zániku „virtuareality“, ale dokonca ponúka „zaručené“ posolstvo z zániku papiera ako nosiča, médiá, sprostredkovateľa informácie, komunikácie, umenia a nie menej i vzdelanosti, keď cituje Nicholasa Negroponteho: „Fotografický film je preč, no ľudia fotia viac ako kedykoľvek predtým. Kompaktné disky už nedominujú, pretože hudba sa čoraz viac distribuuje online. Na rade sú knihy, časopisy a noviny,“ predpovedá Nicholas Negroponte, zakladateľ mediálneho laboratória na Massachusettskom

technologickom ústave. 'Text nie je na ústupe, ani čítanie nie. Na ústupe je papier.'“ (Lohr, 2010).

Je evidentné, že globalizácia zasahuje i do sféry národných literatúr Slovenska a Česka. V tomto prípade sa však, odhliadnuc od fenoménov globalizácie, jedná o istý druh „paradoxného súvzťaženia“.

História kontaktov a vzájomného ovplyvňovania a prelínania slovenskej a českej kultúry, ako o tom píše Machala a Kukučová, je „dlhá a bohatá, čo má svoje príčiny politicko-geografické, spoločenské, kultúrne a samozrejme jazykové. Ťažko totiž hľadať dva jazyky, ktoré by si boli tak blízke a prístupné, ako sú práve čeština a slovenčina“ (Machala & Kukučová, 2010).

### 3. Prirodzený rozpad

Ako tvrdí Kováčiková vo svojej štúdii publikovanej v odbornom internetovom časopise pre právo a spravodlivosť Projustice.sk: „Politickí exponenti oboch strán (českej i slovenskej – pozn. M. G.) sa dohodli na definitívnom zániku spoločnej republiky a dňa 25. novembra 1992 bol odhlasovaný ústavný zánik ČSFR k 31. decembru 1992 i zákonodarným zborom. Stačí takýto stručný náčrt vtedajšej spoločenskej a politickej situácie a okolností a je zrejmé, že akékoľvek úvahy o zániku ČSFR oddelením (separáciou), prípadne vystúpením (secesiou) Slovenska, sú irelevantné.“ (Kováčiková, 2013).

Jan Rychlík však situáciu v súvislosti s rozpadom Česko-Slovenska nevníma ako „výnimočnú“, či v kontexte blízkosti národov v spoločnom štáte, nijako ojedinelú, keď tvrdí, že: „Zánik spoločného štátu Čechov a Slovákov sa stal predmetom bádania domácich i zahraničných historikov, pričom táto téma bude ešte zamestnávať odborníkov aj v budúcnosti. Štúdium príčin rozpadu Československa má i praktický význam. Skúsenosť posledného desaťročia 20. storočia totiž ukázala, že mnohonárodnostné štáty sú dosť nestabilné a že jazyková blízkosť národov vôbec nie je zárukou, že sa štát nerozpadne. Ako problematické s ukazuje trvalé spolužitie viac splna vyvinutých národov v jednom štáte vôbec. Európska integrácia pritom nie je zárukou proti možnému rozpadu mnohonárodnostných štátov, ako to demonštruje napríklad súčasná (2012 – pozn. M. G.) situácia v Belgicku či v Španielsku. (Rychlík, 2012).

Podrobnejšie sa témou suverenity Českej a Slovenskej republiky po roku 1989, a predovšetkým po rozpade spoločného štátu v roku 1993, zaoberá Andrew Janos vo svojej štúdii v 3. čísle časopisu Slavic Review z roku 2010. Podnetnou a inšpiratívnou sa v uvedenom kontexte javí aj štúdia Tima Haughtona Governing the Czech republic and Slovakia, ktorá zasa skúma situáciu politickú situáciu v oboch štátoch v období medzi socializmom a vstupom do Európskej únie.

V súvislosti s literatúrou, v zadanom kontexte, eviduje napríklad Peter Zajac aj nový moment, a to fakt, že v roku 1993 „sa pretrhol inštitucionálny rámec slovensko-českých literárnych vzťahov, ktorý tvoril prvý kontext slovenskej literatúry a jeho primárne hodnotové pozadie.“ (Tamtiež). Táto skutočnosť je v ďalších štúdiách a reflexiách o slovenskej literatúre v 90. rokoch nie raz akoby opomínaná, alebo uvádzaná len marginálne, či väčšmi ako *par parentése*.



#### 4. Vzdialená blízkosť

Nespornou skutočnosťou je však konštatovanie, že slovenská literatúra bola dlhé roky s českou „prepojená“, či aspoň akýmsi zvláštnym putom „súbežná“. Rozdelenie spoločného štátu Čechov a Slovákov v roku 1993 spôsobilo o. i. aj rozdelenie národných literatúr do separátnych, akoby až „odcudzených“ stavov. Pritom český a slovenský jazyk, ako aj ich vzájomná znalosť akoby predurčovala, či ponúkala vzácnu možnosť, šancu zdieľať diela v origináli, v pôvodnom jazyku bez prekladov, no napokon situácia vyústila do stavu, kedy sa tieto dva jazyky postupne stávajú pre mladú generáciu vskutku cudzími. Tieto naše domnienky potvrdzuje aj zástupca šéfredaktora českých *Literárních novin* Ivan Matějka, keď tvrdí: „Nám je ale slovenská literatúra podstatne bližšia ako iné písomnosti. Nie je za tým len kus spoločnej histórie, ale tiež jazyková blízkosť. Žiadny iný jazyk nie je Čechom tak zrozumiteľný, aby k tomu nepotrebovali absolvovať nejaký intenzívny jazykový kurz – slovenčine rozumieme, môžeme v nej bez väčších problémov čítať (len po zmysloch jednotlivých viet musíme občas popátrať v pamäti alebo v slovníku). Táto schopnosť síce – s klesajúcou kultúrnou výmenou – u mladších generácií mizne, ale môže ju rýchlo nadobudnúť späť. Len keby boli tie možnosti, keby sme mali lepšie informácie, ktoré by nám umožňovali lepšie sa orientovať v knižnej džungli, a keby sme mali ľahší prístup k samotným dielam slovenských prozaikov, básnikov, autorov literatúry faktu... Elektronická komunikácia oboje uľahčiť, ale literárna výmena potrebuje vždy impulz, neprichádza samovoľne, v tomto smere sme až príliš zavalení informáciami.“ (Matějka, 2012).

Aj napriek zrozumiteľnosti češtiny na Slovensku a tiež slovenčiny v Čechách a na Morave býva, podľa Machalu a Kukučovej, už krátko po rozpade spoločného štátu konštatovaná jej „klesajúca úroveň, a to hlavne medzi mládežou a deťmi. Tento nelichotivý trend spoločne s tradičným, akoby prehliadaným, postojom českých čitateľov k ponuke a kvalite slovenskej literatúry priviedol niektorých vydavateľov, literárnych tvorcov i odborníkov na oboch brehoch rieky Moravy k ďalšej aktualizácii úvah o potrebe prekladania slovenských kníh do češtiny a premýšľaniu nad konkrétnymi krokmi napomáhajúcich šíreniu slovenskej literatúry v českých krajinách.“ (Machala & Kukučová, 2010).

#### 5. Odcudzenie

Až neskôr, bezmála po uplynutí bezmála dvadsiatich rokov, tak priznávajú i českí spisovatelia, že slovenská literatúra je odrazu pre nich stratená. Ivan Matějka konštatuje: „Slovenská literatúra sa nám kamsi stratila. Knihy v slovenčine v českých a moravských kníhkupectvách prakticky nenájdete, špecializovaná predajňa je iba jedna pre celú republiku, expozícia na podujatí *Svět knihy* je len raz za rok, rôzne slovenské edície zmizli spoločne s vydavateľstvami, ktoré ich vydávali...“ (Matějka, 2012). Azda i pre vyššie uvedené dôvody sa redakcia *Literárních novin* rozhodla v roku 2012 vydať prílohu svojho štvrtého čísla, kde s predhovorom šéfredaktora Petra Bílka a krátkym zamyslením jeho zástupcu, už na tomto mieste citovaným, Ivanom Matějkom predstavili českým čitateľom vzorku súčasných slovenských prozaikov a básnikov s krátkym predstavením osoby autora a, samozrejme, ukážkou z ich tvorby. Príloha, nazvaná *Pražská knižná revue* priniesla ukážku z tvorby slovenských autorov: Márie Bátorovej, Jany Beňovej, Dušana Dušeka, Kataríny Džunkovej, Pavla Garana, Erika Jakuba Grocha, Tomáša Janovica, Jany Juráňovej, Daniely Kapitáňovej, Moniky Kompaníkovej, Pavla Rankova, Jaroslava Rumpliho, Dušana Šimka, Petra Šuleja

a Pavla Vilikovského. Príloha bola realizovaná aj vďaka podpore a spolupráci s Literárnym informačným centrom v Bratislave.

## 6. Spolupráca – snaha o oživenie

Za zmienku v uvedenej problematike azda stojí i stále aktívna česko-slovenská spolupráca na vedeckej úrovni medzi Ústavom pro českou literaturu AV ČR a Ústavom slovenskej literatúry SAV v Bratislave. K hlavnej spolupráci medzi oboma ústavmi patria každoročné tzv. Česko-slovenské konfrontácie.

Prvé stretnutie s pracovníkov Ústavu slovenskej literatúry SAV v Bratislave a Ústavu pre českú literaturu AV ČR sa uskutočnilo v roku 2002. Náplňou jednotlivých stretnutí je ponúknuť kolegom vybrané prozaické, básnické a literárnovedné texty za daný rok, o ktorých druhá strana referuje. V prvých štyroch rokoch boli koordinátormi Tomáš Kubíček a Vladimír Barborík, po nich prevzali úlohu za českú stranu Michal Jareš a za slovenskú Jána Pácalová, Ľubica Somolayová a neskôr Radoslav Passia. Menoslov slovenských zástupcov v tomto projekte môže byť pre zainteresovaného automaticky i signálom, či predpokladom, že výber autorov, ktorých tvorba sa predstavuje českej strane môže byť ovplyvnená osobným vkusom a zaujatosťou. Možno by teoreticky, vzhľadom na výber slovenských autorov, mohla pokojne vyvstať i otázka, či na Slovensku nie je dostatok zaujímavých a „reprezentatívnych“ spisovateľov a básnikov, napríklad i preto, že Peter Macsovszky bol českej odbornej verejnosti takto predstavený dvakrát (2003 a 2012).

Okrem Česko-slovenských konfrontácií, ktoré sú zaradené do dlhodobej spolupráce medzi ÚČL AV ČR a ÚSL SAV, organizujú obidva ústavy odborné konferencie. Doposiaľ, podľa internetovej stránky ÚČL AV ČR, boli zorganizované dve konferencie o populárnej literatúre, prebehla taktiež konferencia venovaná detektívke (Vražda v Zasadačke. Podoby detektívneho žánru, 2009) a konferencia venovaná hororu (Strach a hrôza. Podoby hororového žánru, 2010). Ďalším výstupom vzájomnej spolupráce bola napríklad aj konferencia o dejinách či konferencie Otázniky nad osmičkami v literatúre 20. storočia 1918 - 1938 - 1948 - 1968 (1989), ktorá sa konala v roku 2008 v Budmericiach a jej výsledky boli prezentované v časopise Slovenská literatúra. (Ústav pro českou literaturu).

Taktiež sa niektorí pracovníci ÚČL AV ČR od roku 2006 zúčastňujú pravidelných pracovných stretnutí v ÚSL SAV nazvaných Literárnokritické reflexie slovenskej literatúry a doposiaľ sa uskutočnili štyri ročníky, z ktorých pravidelne vychádzajú zborníky. K publikáciám, ktoré vznikli na základe vzájomnej spolupráce vyššie uvedených odborných pracovísk patrí napríklad súborné vydanie básnického diela Štefana Strážaya (ed. Michal Jareš) alebo zborník Strach a hrôza. Podoby hororového žánru (eds. Ivana Taranenková - Michal Jareš). (Ústav pro českou literaturu).

Problematike česko-slovenských vzťahoch v literatúre sa dnes priebežne venujú literárne a odborné periodiká Čechách aj na Slovensku, ale daná téma je pertraktovaná taktiež v knižných publikáciách, organizujú sa odborné semináre.

S prihliadnutím na vyššie uvedené je zrejmé, že situácia v reláciách slovenskej a českej literatúry a ich vzájomných prienikoch a vplyvoch globalizácie v súčasnosti je živá, i keď je azda „ideálny“ stav v danej problematike nie je splna dosiahnuteľný, keďže môže byť (a asi aj je) z každej strany zadefinovaný inak.

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## DEVELOPMENT AND USE OF INTANGIBLE ASSETS IN THE CONDITIONS OF GLOBALIZATION

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**Abstract.** Globalization and the technological revolution in the market give rise to that knowledge and innovation become the main competitive advantage of manufacturing companies. To the core the concept of intellectual capital, which includes knowledge, skills, innovation, processes and intangible assets which the emphasis in today's dynamic environment. Companies are forced to innovate products and services. Who will not be continuously innovate will lose their market position. At present, it highlights the intangible capital as a resource that creates economic wealth business. Each manufacturing company has begun to assess the value of intangible capital and started looking for effective process control procedures, in order to maximize income from intellectual wealth. The implementation capacities of intangible assets (patents, licenses, designs, know-how) in the development of quality represented by their involvement in the transition process, in particular the intangible intellectual capital in innovative product development and subsequent certification of products in the conditions of globalization. Implementation possibilities of intangible assets in quality development in the Slovak Republic and the European Union are based on investments in individual country investments in science and research. In the article constitute research sample manufacturing companies in Slovakia. The main objective of the research was to determine contribution of individual intangible assets of manufacturing companies.

**Keywords:** globalization, quality, intangible assets

**JEL Classification:** F63, L15, M11, O34

### 1. Introduction

Development of world management is influenced by globalisation, which currently stresses importance of intellectual assets in a company as a tool to increase competitive advantage of the company on a market. In order to achieve business success it is not sufficient enough to have properties, land and machines, that means tangible assets. With an over going globalisation, there are needed new technologies, know-how, ideas, unusual solutions carried by human capital. Creative human element, visionaries, problem solvers provide creative development potential. Intellectual research – development potential is growing stronger in current global world and has a substantial impact on increased quality of production and overall increase of added value.

## 2. Literature review

Intellectual property concerns creations of human mind. Human capital is defined as the combined knowledge, skill, innovativeness, and ability company's individual employees to meet the task at hand. It also includes the company's culture and philosophy. Human capital cannot be owned by the company (Bontis, 2001). Protection of intellectual property in business has a moral aspect in times of globalisation. Legal system transforms this creative and innovative creation into property and thus into valuable business property. Human inventiveness is reflected in form of new inventions, thoughts, information, creative demonstrations of knowledge that means intangible assets, becoming essential part of everyday life in form of new products and services.

Intellectual property is divided into two groups: industrial property involving patents, industrial patterns, trademarks and geographic titles. The other group are author rights and related rights that include literature pieces, music pieces, and works of art. Author rights also incorporate radio and television broadcasting rights, rights of performers and rights of audio recording producers. Above stated division is documented in graphically in tab. 1.

Table 1: Intellectual property rights

Intellectual Property Rights			
Copyrights	Industrial Property Rights		
	Creative technical solutions	Labels	Others
Author craft literary, scientific, art, software and related crafts	Patent, design, utility model, new plants and animal breeds	Trademark, appellation of origin, geographical appellation of products	Trade secret, know-how, logo, new ways of prevention and diagnostic

Source: own processing

The main keys to achieve competitiveness in globalised world are requirements of excellence. In 21<sup>st</sup>. century, tangible factors have been becoming burden, which is one of the problems why businesses head to utilisation of intangible assets (Cohen, 2005). Apart from tangible and human factors, there are also intangible factors participating on creating quality, such as science knowledge, know-how, creative ability, inventiveness. In our conditions these are unappreciated, however, in the world they have had higher share on increasing quality and business success.

Intangible wealth of a company includes results of intellectual activities of company employees. They are the core of traditions and good name of a company and thus, the image of a company is established. From the point of content, intangible assets are especially of inventive character, they involve a significant share of intellectual work, creativity and their intellectual activity influence innovation creation, therefore they create new parameters of quality.

Regulate to a new type of management - knowledge management. Knowledge management is a key factor for any organization, especially for education, whose goal is its creation and dissemination (Pérez Feijoo, Héctor M. et al., 2015).

Knowledge management has emerged as a discipline that aims at enabling organizational members to collectively acquire, share and leverage knowledge to achieve business objectives (Duffy, 2001).

Knowledge Management can be extended to management of organizational knowledge for creating business value and generating a competitive advantage, knowledge management enables the creation, communication, and application of knowledge of all kinds to achieve business goals, knowledge management is the ability to create and retain greater value from core business competencies. Knowledge management supports the use of information through knowledge acquisition, knowledge sharing and knowledge application for improvement (Mei-Hsiang Wang & Tarng-Yao Yang, 2016).

Linkage to knowledge management, organizational culture has positive impact and correlation to knowledge management implementation (Jafari et al., 2013).

Knowledge management as set of activities to create organizational competitive advantages which is enhanced organizational objectives through innovation and organizational services using organizational knowledge. These activities of knowledge management are well known as knowledge management process that consists of discovering, capturing, sharing and application process. (Sensuse et al., 2015).

The focus of the creation of new products is transferred from physical to intellectual property, intellectual resources, intellectual capital. The beginnings of intellectual property goes back to eighties years of last century. In 1890, Marshall in his work "Principles of Economics" stressed knowledge as the main driving force of production, which is considered the main element of intellectual capital (Mouritsen & Larsen, 2005).

Evolutionary economics highlights the role of search in enabling firms to develop new combinations of knowledge and pursue new technological paths. An important part of search includes access to external knowledge through collaboration with other organisations. But there are dangers in sharing knowledge with external partners: there is scope for unintentional knowledge leakages and, indeed, imitation by competitors (Miozzo et al., 2016).

Intellectual capital is individual or collective knowledge in an organization that can be used to gain competitive advantage and to enhance the value of other types of capital (Casey, 2010).

Brennan and Connell (2000) identify four components of intellectual capital: market assets, human-centred assets, intellectual property assets and infrastructure assets. The difference between these two classification systems is that they assume different levels of aggregation of the elements of intellectual capital. Most other classification schemes for intellectual capital distinguish between external (customer related), internal structures and human capital.

According to Bayercelik et al. (2014) the most significant factors influencing the development of innovation activities involve financial factors, size of a company, institutional factors, technological capabilities, customer preferences, economy factors, cultural factors, managerial skills, ability to learn, orientation on market and competition advantages.

In some other definition, intellectual capital is put forward as the economic value of intangible assets that a company owns such as human resources, organizational and societal resources (Choudhury, 2010).

Waiyawuththanapoom, et al. (2013) identifies the key internal and external factors that are crucial for open innovation implementation. Appropriate knowledge management, strategic management and change management are among the most important internal factors determining success of open innovation, while organizational culture, flexibility, innovativeness, outward focus and reflexivity are essential internal dimensions in the implementation process. When it comes to the external factors, authors identify relevant innovation process characteristics, appropriate external networks and environmental moderators, such as technological turbulence, transaction rate and competitive intensity, as the most important.

Kyläheiko et al. (2011) the choice of a strategy depends on the appropriate regime, technological opportunities faced by the company, and the degree of cumulateness and complexity of technological knowledge in the industry. Companies can choose an offensive or aggressive strategy, an opportunistic or specialized technology strategy, a defensive or dependent strategy or an imitative strategy.

Intangible assets of quality include also image, reputation and goodwill. Image is a product of a company live capital company. Image is composed of intellectual creative work of employees, which strengthens good traditions and overall image of a company. Reputed quality shapes reputation of a company in-between customers and competitors on both national and international level. It represents intangible asset of quality, that pays off in market economy directly from sales and incomes on the market, or indirectly from attracting new customers and forming new markets (we could also mention trademark – price of trademark). Goodwill is briefly calculated as a difference between charge price and market value of the company. It increases satisfaction and efficiency of production employees, confidence and reliability in their skills. It is market pricing of all intangible capital and it is reflected in loyalty of employees and pride of production mark of company's products.

Intellectual property protection is protection of human mind creations. We talk about products that are materialised into certain forms. As an example we can use a glass. Glass has a certain shape, design, it is produced by company under a brand name and it is produced a certain way. It is a result of a mind, as it was necessary to design it, a new idea was born. On day to day bases people come across and utilise legal properties, without being aware of it. They hold a mobile phone, which is also carrier of intellectual property rights such as design, trademark, production technology. Here we can see low awareness of intellectual property in Slovak Republic.

### **3. Data analysis**

The main objective of the research is to investigate and assess what elements of intangible company property are used in transformation process and its individual phases. Research has been executed in production companies located in Slovakia. Out of the all addressed 80 businesses, return represents 38,75 % which is 31 production companies.

Research shows that the biggest share of intangible assets in transformation process is represented by know-how, 34 %. In more detail it regards production know-how, which is not a result of scientific activity, but it is represented by production procedure, formulas, knowledge, technical parameters, technology utilised in production activity. Production businesses dispose with strong engineering know-how that secures competitive advantage on national and international markets. Know-how businesses treats trade secrets and their number



is due to remaining competitive a secret. The second biggest share of intangible elements represents designs by 25 %. Design enters production in every phase of transformation process from pre-production stages, through main production until after production services. It has not only formal aspect but it also has a functional purposes. It is part of the product value and customer experience. In pre-production stage, in development phase and production, aesthetic and functional aspects are considered as main production purposes.

In the main production, product gets the shape or consistence designed by constructors in technical documentation in order to achieve its utility function together with required level of quality and with minimal production costs. After production stage of transformation process very often involves packaging, loading, expedition, and takeover of the product by a customer. As we can see, intangible element – design enters in value and core of the product in every production stage.

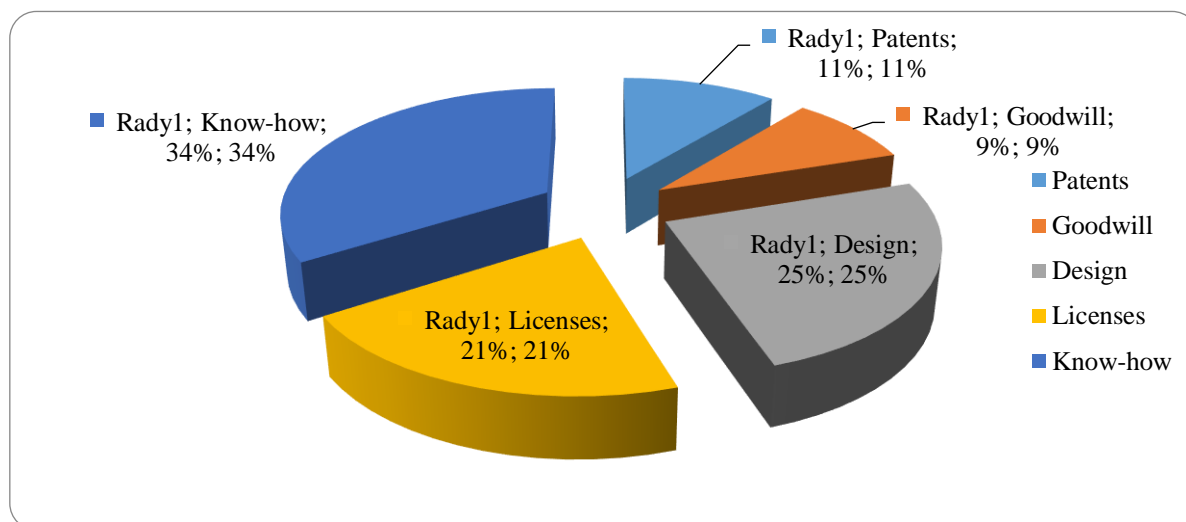
The third biggest share of intangible elements represents licence by 21 %. Licence enters transformation process in form of software, computer programs, purchased patents and trademarks based on license agreement. Relationship between patents and license granted is closely connected. Company with a possibility to patent its own products is not obliged to enter license agreements to be able to produce a new product. In Slovakia, the share of granted patents is lower than in any other country of European Union. Results of the research also prove that the second lowest share in transformation process is represented by patents by 11 %. It is a result of stagnation and downfall of research and development area in Slovakia. Before there were Slovak companies privatized by foreign business, almost every production company had departments of research and development established.

However, after mother businesses purchased these companies, research and development remained as a key activity remained in their companies and newly purchased businesses were only delegated production construction and technological preparation. Patents are currently considered only one tool of competitiveness of a company on national and international markets. The more patents owned by a company, the higher is its value. This way, company becomes a strong competition for national and international companies. The number of patents and licence plays an important role in sale of a company. Often, it is a determining element in strategic decision making of company management. Insignificant share of intangible assets entering production process is covered by goodwill by 9 %.

Companies understand goodwill as general and “good name of the company” and not as a business valuation of intangible assets of a company. Based on an interview carried out during the research, top managers understand goodwill as entering element of production process and that primary part included in goodwill is loyalty of employees emanating from their inclusion on production of high quality products. Loyalty of employees and customers are the best form of feedback for company management and it helps company achieve business prosperity in the future.

Share of intangible asset elements utilised in transformation processed are displayed in the following graph.

Figure 1: Share of intangible assets utilised in transformation process



Source: own processing

## 4. Conclusions

In this article, on bases of read literature and research, we came to conclusion that in process of globalisation product is a carrier of several elements of intangible assets that enter transformation process either directly or indirectly:

1. product without trademark is not possible to be commercialised on a market,
2. products to be competitive and increase demand must have a certain design,
3. within the transformation process, they are produced based on certain know-how, that might be protected by trade secret,
4. product is a property of a specific company, that operates under a specific name,
5. during the production, employees partaking on the production enrich the product in form of improved proposals, knowledge which increases share of intellectual property in production process,
6. in development of new products, company proceeds to patents,
7. licences enter transformation process in form of utilised software methods, utilised machinery, equipment hired from partners.

We can establish that in a current globalised world, in every step of transformation process intangible assets enter either directly or indirectly into production. Every product produced is a carrier of legal intellectual properties, it means intangible assets. Intangible assets and creative intellectual work contribute on increased productivity of work, improved product quality, development of innovation activities and qualified work force. Intangible assets contribute to enhancement and development of product quality in every phase of production process and hence increase economic prosperity of the business, customer satisfaction and they are one of the main completion means in times of globalisation.

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# THINK GLOBAL ACT LOCAL PURCHASING BEHAVIOR TOWARDS GREEN PRODUCTS IN ALBANIA

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**Abstract** Actual patterns of consumption are unsustainable. The demand for goods and services is beyond the capacity of natural resources and is causing natural degradation. Based on the facts and trends of actual consumption it is obvious that fundamental changes are required not only in technological level but also in consumer's behaviour. Every country should promote and encourage consumers to adapt sustainable patterns of consumption. In order to promote more sustainable patterns of consumption it is important to investigate the factors that influence consumers buying behaviour towards green products. The aim of this paper is to analyse the factors that influence the consumer's behaviour towards green products in Albania. A quantitative approach is used for data collection. Data are being analysed through multivariate analysis and Principal Component Analysis (PCA). The results of the study indicate that demographic variables have not a significant role in a consumer's decision-making process towards green products. On the other hand lifestyle and the consumer perceived effectiveness play's a significant role in consumer's decision making process towards green products in Albania. Also situational factors like availability of green products, price and quality have an important role in final decision making. The findings of this study will help decision makers and companies to find more efficient ways to influence consumers and to increase the market share of green products in Albania.

**Keywords:** Sustainable development, Sustainable consumption, Globalization

**JEL Classification:** Q01, Q55, Q56

## 1. Introduction

As a result of the problems encountered by current models of development a transition to a more sustainable path is needed. Sustainable development aims to develop while maintaining balance and harmony between the social, economic and environmental dimension of development. Efforts towards sustainability should be applied at all levels (micro, macro and micro-macro) by all actors of society (individuals, governments, companies and NGOs). Recent years the attention to the role of individual in achieving sustainable development has increased (Jones et. al 2001, Holt 2011, Jalas 2011, Lorek & Fuchs, 2011).

Nations through the global partnership are determined to transform our unsustainable models of development. On the world summit on Sustainable development is released a new Agenda that underlines 17 main goals towards SD. These goals take into account different countries

realities, priorities and level of development. These are universal goals that will be implemented in local level. One of the main objectives of UN is to make fundamental changes in the way that society produce and consume goods. All countries developed and developing countries take action (UN, 2015). Economist and public opinion argue that sustainable development must be placed in an economic system, the centre of which is the individuals. The role of state and the market will continue to be important. The state must develop a financial and regulatory structure to encourage economic development based on social justice and environmental sustainability. Companies affect the supply side by using less polluting technologies and producing more eco-friendly products. But the role of the individual is essential affecting the demand side (Kohle, 2015).

The intention of this paper is to examine the behaviour of Albanian consumers towards green products. We will investigate the factors that influence most the green purchasing behaviour. This information can be used by policy makers and by companies to promote in a more efficient ways sustainable consumption in Albania.

## 2. Literature review

Global population growth is accompanied by increased demand for products and services. These requirements are beyond natural regenerative system in the short and long term. The current rate of consumption has put under severe pressure natural resources (Baumol & Oates, 1998). As the global population will continue to grow there is no doubt that the demand for goods and services will continue to grow. These concerns should be addressed effectively in global, national and local level.

As is pointed out in agenda 21 (4.3) “...*the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in industrialized countries, which is a matter of grave concern, aggravating poverty and imbalances.*”

Sustainable consumption and production can help in achieving the goals of sustainability (UN, 2015). Oslo symposium defines SCP as: “*The use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations.*”

Scientific studies, policy makers, NGOs have emphasised the requirement for a great transition towards a more sustainable lifestyle. Some researchers believe that sustainability and sustainable lifestyle can be reached through technological progress (weak sustainability approach). On the other hand, according to the strong sustainability approach in order to achieve sustainable development fundamental changes are needed in consumer behaviour (Bina 2013, Neymar 2003, Hobson 2013).

In order to change consumer behaviour we should first analyse their actual behaviour and the factors that influence their behaviour. In literature exists two main approaches that analyse consumer's behaviour: *the internalization* approach, and *the externalization* approach. According to internalization approach consumer behaviour is influenced from personal factors (attitude, beliefs, personality). On the other hand the supporters of the externalization approach argue that consumer behaviour is influenced from the external environment (Jackson, 2005).

Empirical studies have shown that both factors influence consumer's behaviour toward sustainable consumption: internal factors (demographic, psychographic, lifestyle, social norms) and external factors (availability, price, perceived barriers) (Blend & van Ravenswaay, 1999; Von Meyer-Höfer, Wense, & Spiller, 2013; Pezzini, 2013, Thøgersen, J., 2010, Gumeni & Gorica, 2014). The factor influencing consumer's behaviour differs from country to country therefore is important to undertake studies for every country. In literature exists several studies for developed countries but there are a small number of studies that analyse consumer behaviour towards sustainable consumption in developing countries. Empirical results have shown that regardless the increased concern on unsustainable patterns of consumption the market share of green products is still very low. Different scholars have analysed the attitude behaviour gap toward sustainable consumption. They have marked up several factors that influence this gap like: consumers control on current behaviour (Carrington, Neville, & Whitwell, 2014); Situational factors (Vermier & Verebeke, 2006; Terlau & Hirsch, 2015); price, quality and distribution of sustainable products (Terlau & Hirsch, 2015); lack of information (Terlau & Hirsch, 2015; Ehrich & Irwin, 2005).

### 3. Methodology

For the purpose of this study we have selected a descriptive and explanatory research design. Data were collected by means of a structured questionnaire. Through the questionnaire we gathered information on the level of adoption of specific sustainable consumption behaviour. Consumers have chosen in a (Likert scaling 1-5) the frequency of carrying out activities related to sustainable consumption. After our data collection we included our findings in IBM Spss statistics. Our finding is composed on 660 valid responses. Multiple regression method and Exploratory Factor Analysis, EFA are used in order to develop relationship between the depended and independent variables. Factor analysis attempts to bring intercorrelated variables together. The factor analysis model expresses the variation and covariation in a set of observed continuous variables  $X$  as o function of  $F$  factors and residuals  $e$  for person  $i$  (Tucker & MacCallum, 1997) (Kootstra, 2004)

Multifactor model of EFA is as follows:

$$\begin{aligned} X_1 &= \lambda_{11}F_1 + \lambda_{12}F_2 + \dots + \lambda_{1m}F_m + e_1 \\ X_2 &= \lambda_{21}F_1 + \lambda_{22}F_2 + \dots + \lambda_{2m}F_m + e_2 \\ &\dots \\ X_n &= \lambda_{n1}F_1 + \lambda_{n2}F_2 + \dots + \lambda_{nm}F_m + e_n \end{aligned} \tag{1}$$

Matrix form:

$$X_{nx1} = \Lambda_{nxm} F_{mx1} + \varepsilon_{nx1} \tag{2}$$

$$\begin{pmatrix} X_1 \\ \vdots \\ X_n \end{pmatrix}_{nx1} = \begin{pmatrix} \lambda_{11} & \dots & \lambda_{1m} \\ \vdots & \ddots & \vdots \\ \lambda_{n1} & \dots & \lambda_{nm} \end{pmatrix}_{nxm} \begin{pmatrix} F_1 \\ \vdots \\ F_m \end{pmatrix}_{mx1} + \begin{pmatrix} \varepsilon_1 \\ \vdots \\ \varepsilon_n \end{pmatrix}_{nx1} \tag{3}$$

## 4. Findings

Our sample is composed of 660 respondents se 61% female respondents and 39% male respondents. 46% of our respondents are less than 25 years old, 25% are between 25-34 years old, 14% are between 35-44 years old and 14,5 % are more than 45 years old. Using the component principal analysis, we created the depended variable named *green purchasing behaviour*. This factor includes 4 different variables that are strongly related to green purchasing behaviour: (the buying of bio products, buying of local, seasonal products, buying of recycled products, buying of products with low negative impact on the environment). By using the multiple regression method we will analyse the factors that determine the green purchasing behaviour (Table 1). As is shown in table 1 civil status, perceived effectiveness, life style are the variables that influence positively green purchasing behaviour. Consumers that have an active life style, high consumers perceived effectiveness and married people are more likely to adapt green purchasing behaviour.

Table 1 Determiners of Green purchasing behavior

Variables	Green purchasing behaviour
Gender	-0.009
age18_24	0.011
age25_34	0.099
age35_44	-0.08
Education/university	0.091
Education/master degree	-0.026
income22_40All	-0.051
income40_90All	0.138
Civil status	0.271**
Employed	-0.19
Student	-0.099
Psychographic	0.066
Knowledge	0.057
Concerns	0.031
Perceived effectiveness	0.128***
Life style	0.259***
_cons	-0.044
N	568
R <sup>2</sup>	0.258
R <sup>2</sup> -adj	0.236
RESET	0.241
legend: * $p < .1$ ; ** $p < .05$ ; *** $p < .01$	

The multiple regression was calculated again (Table 2) after excluding all the non-significant statistically variables (concerns, knowledge, psychographic, gender age18\_24 age25\_34



age35\_44 education/university education/master degree income22\_40All income40\_90All)  
 (F(13,551) = 1.20, Prob > F = 0.2747). RESET test of functional form gave evidence for  
 appropriate form of the model (F(3, 568) = 1.07, Prob > F = 0.3623), based on the  
 heteroscedasticity test we reject null hypothesis ( $\chi^2(1) = 4.88$ , Prob >  $\chi^2 = 0.0272$ ) meaning  
 this that the error terms do not have constant variance. In order to deal with heteroscedasticity  
 we use robust standard error. The result of multiple regressions with robust standard error is  
 shown in Table 3. The three variables included in the regression are statistically significant.

Table 2 Reduced model of the determinants of green purchasing behavior

Green purchasing behaviour	Coef.	Std. Err.	T	P>t	[95% Interval]	Conf.
Married	0.196	0.088	2.23	0.026	0.024	0.368
Perceived effectiveness	0.194	0.039	4.92	0	0.117	0.272
Life style	0.152	0.049	3.11	0.002	0.056	0.247
_cons	-0.054	0.046	-1.17	0.241	-0.144	0.036
N=575		R-squared = 0.1453		Adj R-squared = 0.1409		
RESET test: F(3, 568) = 1.07 Prob > F = 0.3623						
Breusch-Pagan / Cook-Weisberg test of heteroskedasticity:						
chi2(1) = 4.88 Prob > chi2 = 0.0272						

Table 2 Reduced model of the determinants of green purchasing behavior with robust standard error

Green purchasing behaviour	Coef.	Robust Std. Err.	T	P> t	[95% Conf. Interval]
Married	0.196	0.091	2.16	0.031	0.018 0.374
Perceived effectiveness	0.19	0.043	4.52	0	0.11 0.279
Life style	0.299	0.04	7.47	0	0.22 0.377
_cons	-0.054	0.045	-1.19	0.234	-0.142 0.035
N=575		R-squared = 0.1096		Root MSE = 0.92758	
F(3, 571) = 34.13      Prob > F = 0.000					

## 5. Conclusions

The results of multiple regression analysis revealed that the green purchasing behaviour in Albania is influenced by, lifestyle, perceived effectiveness and social status. Consumers that have an active lifestyle, that have a healthy lifestyle are more likely to adopt green purchasing behaviour. Also civil society activists are more likely to change their unsustainable patterns of consumption towards more sustainable models.

Perceived effectiveness is another element that is positively correlated with green purchasing behaviour. Consumer that believe that their behaviour has an impact in improving the current global situation are more likely to purchase green products, recycled one, local products. Married people also are more prone to green purchasing behaviours.

Usually adopting sustainable consumption behaviours requires extra efforts from consumers. Traditional consumers usually avoid this additional effort and adopt unsustainable patterns of consumption.

In order to encourage green purchasing behaviour in Albania it is important to increase the consumer's awareness towards environmental problems and the roots of this problem. On the other hand, companies should manage to produce more convenient and affordable products in order to retain consumer satisfaction. Sustainable lifestyle behaviours should be enhanced by the appropriate infrastructure in order that adopting sustainable behaviours should not be accompanied with extra costs and/or extra efforts.

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## GLOBALIZATION IN THE CONTEXT OF COINTEGRATION SELECTED COUNTRIES

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**Abstract.** The observed changes in demographics indicate that the situation of Polish population and other countries is difficult. The changes are reflected in the labor market, capital market, globalization, standard of living and similar aspects. Given the importance and scale of the problem which is work, employment, globalization, unemployment, wages, fertility etc. in the article is an attempt to find a group of countries most similar to each other because of the analyzed factors, namely finding a country together most cointegrated. The condition to talk about cointegration two indicators, is the situation is that the two indicators are not stationary formed in subsequent periods in a similar way, ie. That changes in value are in a constant relationship. In the study, co-integration in a a global sense, used wavelet analysis. Using the properties approximating wavelets selected state cointegrated. Then they set a common wavelet trend line. In addition, in a article describes the basic properties of wavelet analysis and describes the algorithm of approximation. Presented in the article considering theoretical and mathematical, have been applied to the analysis of real data. The study covered the period 2000-2014 year. The data necessary for the calculations were taken from the Eurostat database. The study are based on Daubechies wavelet.

**Keywords:** cointegration, globalization, wavelet

**JEL Classification:** E2, E24, C45

### 1. Introduction

Taken in the article subject is the application of wavelet analysis to the problems of globalization. As you know, globalization leads to a growing interdependence and integration of the countries, societies, economies and cultures, resulting in the formation of "one world", the world's population. The analysis undertaken in the article, pointed out the group of countries with common indicators, and examined their level of integration in the context of globalization.

This article aims to isolate countries together cointegrated taking into account the fertility rate and the unemployment rate, employment rate and other macro-economic indicators and the construction of a select group of countries common development trend.

Moreover, the key aim of this article is the application of wavelet analysis to estimate the trend line for cointegrated groups of countries in terms of the studied phenomenon. Therefore, the article does not describe in detail the results related to cointegration, only focused on the results obtained from the wavelet analysis.

## 2. Cointegration

If two variables mutual, form in subsequent periods in a similar way, ie. That changes in value are in constant relationship that can be cointegrated. Therefore co-integration between the two time series, we can speak only when both series are integrated in the first stage [I (1)], moreover random component derived from the regression equation between these variables is not integrated, and thus stationary.

Time series  $x_t$  and  $y_t$  integrated degree  $(d, b)$  denoted  $x_t, y_t \sim CI(d, b)$ , if: both series are integrated degree  $d$ , and there is a linear combination of these variables, which is integrated degree  $d-b$ . In other words, series  $x_t$  and  $y_t$  are cointegrated if:

$$y_t \sim I(d); y_t \sim I(d); a_0 + a_1 X_t + a_2 Y_t \sim I(d-b); b > 0 \quad (1)$$

The most important case of cointegration between the two variables is the case when both variables are integrated in the first stage [I (1)], whereas their linear combination is not integrated. Cointegrated time series are characterized by a dynamic relationship between them and the long-term equilibrium path, which determines that the difference between these processes is practically constant in time.

The time series, which exhibit cointegration, characterized by long-term path of balance, the difference between these processes is practically constant in time. In research to test cointegration is most often used method Johannes, co-integration test Durbin-Watson (CIDW) and Engle Granger two-step procedure based on the Dickey-Fuller test. As mentioned, the rules used in the two-stage procedure Engel-Granger. In this procedure, the first step we examine the degree of integration of variables. The degree of integration of the dependent variable can not be higher than the degree of integration of any explanatory variable. The procedure utilizes the fact that, even if variables are integrated is a least-squares estimator is compliant. In the second step of this procedure are estimated co-integrating vector.

## 3. Wavelets

Wavelets we call function  $\Psi(x) \in L^2(\mathbb{R})$ , such that the system functions:

$$\dots\dots\dots B_\Psi = \left\{ 2^{\frac{j}{2}} \Psi(2^j x - k) \right\}; \quad j \in \mathbb{Z}, \quad k \in \mathbb{Z} \dots\dots\dots (2)$$

is an orthonormal basis in the space  $L^2(\mathbb{R})$ . Family  $B_\Psi$  will be called wavelet base.

The simplest wavelet is the Haar wavelet. “(...) In mathematics, the Haar wavelet is a sequence of rescaled ‘square-shaped’ functions which together form a wavelet family or basis. Wavelet analysis is similar to Fourier analysis in that it allows a target function over an interval to be represented in terms of an orthonormal function basis. The Haar sequence is now recognised as the first known wavelet basis and extensively used as a teaching example (...)” (Hadaś-Dyduch, 2015c). The Haar sequence was proposed in 1909 by Alfréd Haar. Haar used these functions to give an example of an orthonormal system for the space of squareintegrable functions on the unit interval  $[0, 1]$ . The study of wavelets, and even the term “wavelet”, did not come until much later. As a special case of the Daubechies wavelet, the Haar wavelet is also known as D2 (see more about wavelet in: (Dooms & Daubechies (2011) and Hadaś-Dyduch (2015a, 2015b, 2015c, 2016a, 2016b, 2016c, 2016d). Daubechies’ wavelets first row

(db1) is the Haar wavelets (Daubechies wavelets is wavelets created by Ingrid Daubechies in 1988 year).

## **4. Empirical analysis**

The aim of the article is to select the overall group of countries to be analyzed, most countries cointegrated with each other, taking into account the fertility rate and the unemployment rate, employment rate and other macro-economic indicators and the construction of a select group of countries common development trend. Due to the limited volume of the article shown only the most important results.

### **4.1 The aim and scope of the empirical study**

For the analysis were selected the following countries: Belgium, Bulgaria, Czech Republic, Denmark, Germany (until 1990 former territory of the FRG), Germany (including former GDR), Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden, Iceland, Liechtenstein, Norway, Switzerland. W badaniu uwzględniono również dane zbiorcze dla: European Union (28 countries), European Union (27 countries), Euro area (19 countries), Euro area (18 countries), European Economic Area (EU-28 plus IS, LI, NO), European Economic Area (EU-27 plus IS, LI, NO), European Free Trade Association. The data necessary to carry out calculations and simulations taken from the Eurostat database.

The main aim of this article is the application of wavelet analysis to estimate the trend line for cointegrated groups of countries in terms of the studied phenomenon. Therefore, the article does not describe in detail the results associated with cointegration. The focus is on the results of the wavelet level analysis. In addition, a two-step cointegration procedure Engel-Granger based on the Dickey-Fuller test is a known method in the study series cointegrated.

### **4.2 Wavelet trend**

To group selected for the study of countries in the group of countries cointegrated with each other, two-stage procedure was applied Engel-Granger, based on tests Dickey-Fuller. The analysis shows that the best cointegrated the following groups of countries:

Group 1: Czech Republic, Bulgaria, Latvia, Lithuania, Hungary, Poland, Romania.

Group 2: Denmark, Spain, Luxemburg, Austria, Switzerland, Sweden.

Group 3: Switzerland, Finland, Norway.

From the obtained results it can be concluded that Countries within one group have similar trends in macroeconomic indicators and fertility. Thus, for example it can be concluded that the birth rate in Norway will shape up like fertility in Finland and Sweden (group 3) or fertility in the Czech Republic will develop in the same way as fertility rates in Bulgaria, Latvia, Lithuania, Hungary, Poland, Romania (group 2).

To diagnose these hypotheses estimated wavelet functions, depicting the development of appropriate indicators in individual countries belonging to the group and the function of showing the tendency of all countries together. The approximating - wavelet, appropriate for studied phenomenon in general notation is:

$$\tilde{f}(r) = a_{-2}\varphi(r+2) + a_{-1}\varphi(r+1) + \dots + a_{2^n-1}\varphi(r - [2^n - 1]) \quad (3)$$

where:  $a_{-2}, a_{-1}, \dots, a_{2^n-1}$  - wavelet coefficients.

$$\varphi(r) = \frac{1+\sqrt{3}}{4}\varphi(2r) + \frac{3+\sqrt{3}}{4}\varphi(2r-1) + \frac{3-\sqrt{3}}{4}\varphi(2r-2) + \frac{1-\sqrt{3}}{4}\varphi(2r-3) \quad (4)$$

#### 4.2.1 Wavelet trend for group 1

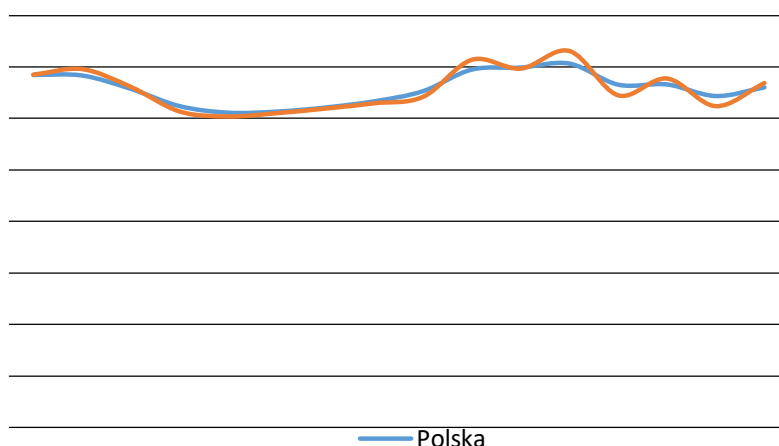
The estimated wavelet function (1) for the Polish index is as follows:

$$\begin{aligned} \tilde{f}(r) = & 1,36\varphi(r+2) + 1,36\varphi(r+1) + 1,39\varphi(r) + 1,34\varphi(r-1) + 1,26\varphi(r-2) \\ & + 1,22\varphi(r-3) + 1,20\varphi(r-4) + 1,23\varphi(r-5) + 1,25\varphi(r-6) + 1,27\varphi(r-7) \\ & + 1,39\varphi(r-8) + 1,39\varphi(r-9) + 1,44\varphi(r-10) + 1,33\varphi(r-11) + 1,35\varphi(r-12) \\ & + 1,27\varphi(r-13) + 1,32\varphi(r-14) + 1,33\varphi(r-15) \end{aligned} \quad (5)$$

$$\text{where: } \varphi(r) = \frac{1+\sqrt{3}}{4}\varphi(2r) + \frac{3+\sqrt{3}}{4}\varphi(2r-1) + \frac{3-\sqrt{3}}{4}\varphi(2r-2) + \frac{1-\sqrt{3}}{4}\varphi(2r-3) \quad (6)$$

As you can see illustrated in Figure 1, wavelet function trend is very well matched to the actual data (estimated error for forecasts expired MSE is 0.000615).

Figure 1: The wavelet (wavelet trend) - an indicator for Polish



Source: Own elaboration.

On the basis of the estimated function determined the rate of other countries belonging to the group 1. Errors forecasts expired estimated on the basis of function is presented in Tab. 1.

Table 1: Errors forecasts expired.

Country	Error				
	ME	MAE	MAPE	RMSE	RMSPE
Bulgaria	0,0262	0,1482	0,1047	0,1620	11,4465%
Czech Republic	0,0198	0,1202	0,0896	0,1408	10,4855%
Latvia	0,0249	0,1353	0,0968	0,1578	11,2924%
Lithuania	0,0229	0,1087	0,0766	0,1515	10,6773%
Hungary	0,0074	0,0746	0,0568	0,0863	6,5762%
Romania	0,0217	0,1364	0,0957	0,1475	10,3465%

Source: Own calculations.

As shown in Table 1, the root mean squared error of up to 11.3%. This value is quite large. Therefore, must be sought another line of presenting an overall indicator for the entire group of countries. Proposal is to estimate the wavelet function containing fluctuations all indicators of all countries belonging to the group.

Thus, the objective of the study is to estimate the wavelet function takes into account the volatility of the trend indicators for all countries within the group. Estimated wavelet function takes into account the variability of indicators for all countries in the group 1 is as follows:

$$\begin{aligned} \tilde{f}(r) = & 1,29\varphi(r+2) + 1,29\varphi(r+1) + 1,3\varphi(r) + 1,25\varphi(r-1) + 1,24\varphi(r-2) \\ & + 1,25\varphi(r-3) + 1,30\varphi(r-4) + 1,31\varphi(r-5) + 1,36\varphi(r-6) + 1,39\varphi(r-7) \\ & + 1,49\varphi(r-8) + 1,49\varphi(r-9) + 1,47\varphi(r-10) + 1,39\varphi(r-11) + 1,46\varphi(r-12) \\ & + 1,41\varphi(r-13) + 1,41\varphi(r-14) + 1,54\varphi(r-15) \end{aligned} \quad (7)$$

Table 2 shows the forecast errors expired estimated on the basis of the function. In comparison with Table 1 errors dropped significantly. As shown, the root mean squared error of up to 8.31% and a minimum of 4.67%. (See Table 2).

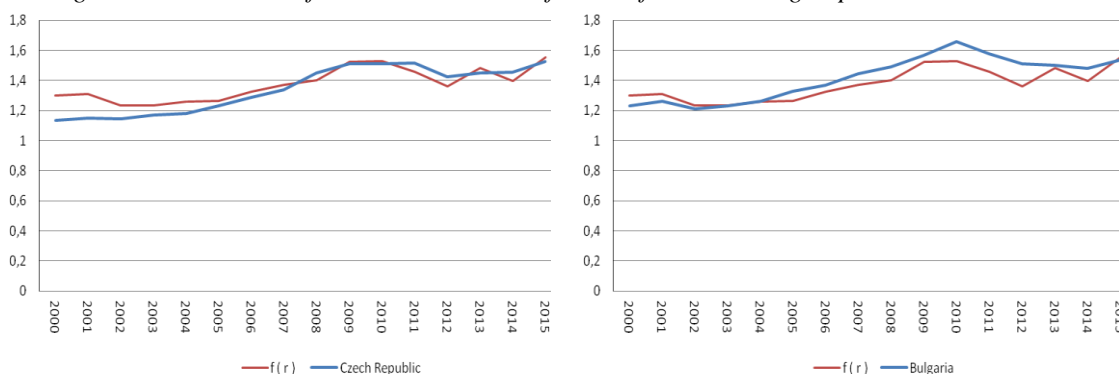
Table 2: Errors estimates of index based on wavelet functions presenting the indicators, all countries belonging to the group 1.

Country	Errors				
	ME	MAE	MAPE	RMSE	RMSPE
Bulgaria	0,0055	0,0602	0,0425	0,0742	5,2415%
Czech Republic	0,0057	0,0614	0,0458	0,0754	5,6135%
Polska	0,0107	0,0885	0,0673	0,1037	7,8856%
Latvia	0,0052	0,0613	0,0438	0,0722	5,1689%
Lithuania	0,0086	0,0707	0,0499	0,0928	6,5386%
Hungary	0,0119	0,0849	0,0647	0,1091	8,3149%
Romania	0,0044	0,0546	0,0383	0,0666	4,6743%

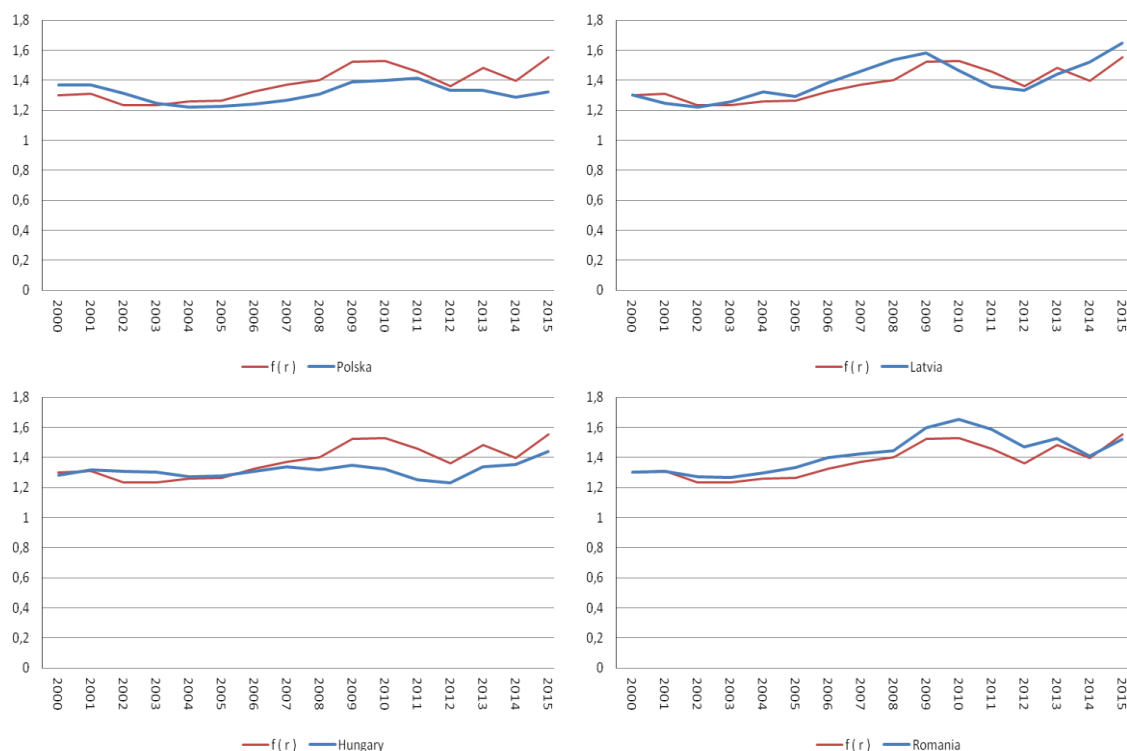
Source: Own calculations.

Figure 2 shows the fit of the estimated wavelet function real data.

Figure 2: The wavelet - fit the overall wavelet function for the whole group with the actual values.







Source: Own elaboration.

As can be seen from the data presented in Table 2 and the graphs above (Fig. 2), the largest deviation from the common to the entire group of wavelet function (trend wavelet) in the case of Hungary. While the best for Romania. Determining the coefficient of determination on the basis of the relationship:

$$R^2 = 1 - \frac{\sum_{t=1}^n (\tilde{f}(r) - y_t)^2}{\sum_{t=1}^n (\tilde{f}(r) - \bar{y})^2} \quad (8)$$

determining the coefficient of determination on the basis of the relationship: X, we get that the volatility the indicator of Romania in 99% depends on the factors having an impact on rates of countries such as the Czech Republic, Bulgaria, Latvia, Lithuania, Hungary, Poland. While in the case of Latvia only 69.11% volatility the indicator of the country depends on the same factors as the volatility indices such countries as the Czech Republic, Bulgaria, Lithuania, Hungary, Poland, Romania.

#### 4.2.2 Wavelet trend for group 2 and 3

Wavelet analysis also proved to be the right tool for the other two groups selected on the basis of series cointegrated. The estimated wavelet function, taking into account the variability of indicators for all countries included in the group, very well reflected the movement of the indicators of individual countries. Detailed results are shown in Table 3.

Table 3: Errors estimates of indicators based on wavelet functions presenting index of all countries belonging to the groups 2 and 3.

Country	CH	FI	NO	DK	ES	LU	AT	CH	SE
RMSPE	4,21%	4,02%	5,06%	3,11%	4,54%	3,01%	4,04%	3,05%	2,10%

## 5. Conclusion

The analysis based on wavelet trend function, let unequivocally verify the hypothesis about the dependence of indicators of several countries in the context of globalization. The results obtained in the first group of countries show that the rate of Romania depends on the same factors as indicator countries: Czech Republic, Bulgaria, Latvia, Lithuania, Hungary, Poland. Denmark while the index of indicators countries: Spain, Luxembourg, Austria, Switzerland, Sweden.

It should be noted that for the construction of a wavelet function (trend wavelet) verifies the hypothesis chosen weakest parameters. Therefore, the results may be even better (that is, carry a lower error), after taking into account the stronger parameters, such as the use of more professional extension of data series in the process of determining wavelet coefficients.

In further studies, may be applied, the proposed method for the analysis of the relationship between the different regions in the context of a multi-dimensional, taking into account macroeconomic indicators and determine the best extension for a series of related. The study will be used results from earlier studies as well as some interesting methods used so far to the other tests for example (Balcerzak & Pietrzak (2016a, 2016b, 2016c), Hadaś-Dyduch 2014, Pietrzak & Balcerzak, (2016a, 2016b), Biernacki (2007, 2009)). Research has shown that globalization is very important, it gives a lot of possibilities.

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## WAVELET ANALYSIS OF UNEMPLOYMENT RATE IN VISEGRAD COUNTRIES

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**Abstract.** Visegrad countries, Poland, Slovakia, Czech Republic and Hungary have common history and have faced the same challenges created by globalisation process for the last three decades. They have successfully transformed from central planned to market economies. They have implemented fundamental reforms of their whole institutional systems and finally joined the European Union in the year 2004. During this process the most significant changes, which were directly influenced by opening of these economies in the reality of globalisation, have been seen on the labour markets. From the policy point of view the labour markets are always considered as crucial for social and macroeconomic stability of economies. This forces the economists to constant empirical research in this field. In this context the aim of the article is to conduct comparative analysis of the unemployment phenomena in the four countries. For this purpose wavelet analysis was applied. In the research a discrete wavelet transformation was used, which has been recently effectively used for analysis of macroeconomic indicators. The empirical research was conducted for the years 1998-2016 and it was based on the Eurostat data. In the research the following hypothesis was verified: the phenomenon of unemployment in the case of Poland, Slovakia and Hungary is formed in a quite similar way, whereas in Czech Republic the situation on the labour markets is mainly determined by factors of different nature.

**Keywords:** unemployment, wavelet analysis, multiresolution analysis, Visegrad countries

**JEL Classification:** E2, E24, C45

### 1. Introduction

Visegrad countries are currently considered as an example of effective transformation from central planned to market economy. The countries are often pointed as benchmark cases of modernisation process, which have increased their competitiveness in globalised economy. This achievement was based on fundamental institutional reforms (Balcerzak, 2009; 2015; Balcerzak & Pietrzak, 2016a), significant technological changes and adequate improvement of quality of human capital (Cieślik, 2014; Balcerzak, 2016a; 2016b; Balcerzak & Pietrzak, 2016b), and finally relatively effective fiscal stabilisation policy (Balcerzak et al. 2016; Balcerzak & Rogalska, 2016). All these fundamental changes were affecting situation on labour markets in these countries (Müller-Frączek, & Pietrzak 2011; Zieliński, 2015; Bieszk-Stolorz & Markowicz, 2015; Woźniak-Jęchorek, 2015; Pietrzak & Balcerzak, 2016a). On the other hand, the situation on the labour markets was significantly affecting the above mentioned

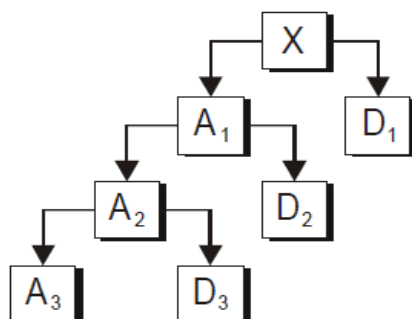
factors. As a result, relatively effective labour market policy was a key element supporting modernisation of these economies in the reality of globalisation. Thus, the labour markets of these economies can be the subject of interesting comparative research.

In this context, the aim of the article is the analysis of long term tendencies on the labour markets of Visegrad countries. Specifically the evaluation of fluctuations of unemployment rate for the pointed trends is conducted in the article. Large fluctuations of the unemployment rate indicate high vulnerability of labour markets to exogenous factors coming from global economy. Its low fluctuations indicate relatively high stability of the labour markets. In the research wavelet analysis was applied, which enabled to assess the tendencies and the scale of valuations of unemployment rate in the years 1998-2016. The research enables to conclude that the labour markets of the four Visegrad countries react differently to exogenous factors coming from the globalized economy.

## 2. Wavelet analysis

A multiresolution analysis can be considered as a tool for time series analysis that is relevant to wavelet analysis. This approach relies on a processing of time series at various levels of resolution as a result of their decomposition into two functions, which are known as approximation and detail. At each level the approximation from previous level is again decomposed into two parts: approximation and detail. The idea of multiresolution analysis is presented in Figure 1.

Figure 1: Multiresolution analysis



Source: own work

In the multiresolution analysis a wavelet decomposition is applied, where discrete wavelet transformation can be used. The wavelet analysis is the development of the Fourier analysis, which allows a presentation of a given process only in a frequency domain. The pointed development consists of adding time domain, which means that the wavelet analysis allows to determine the moments, in which significant changes in the process occurred. More specific presentations of the multiresolution analysis and applications of wavelets are given by Mix & Olejniczak (2003), Doms & Daubechies (2011) and Hadaś-Dyduch (2015a, 2016a, 2016b, 2016c, 2016d).

Wavelets we call function  $\Psi(x) \in L^2(\mathbb{R})$ , such that the system function (see: Mix, & Olejniczak, 2003):

$$B_\Psi = \left\{ 2^{\frac{j}{2}} \Psi(2^j x - k) \right\}; \quad j \in \mathbb{Z}, \quad k \in \mathbb{Z} \quad (1)$$

is an orthonormal basis in the space  $L^2(\mathbb{R})$ . Family  $B_\Psi$  is called wavelet base.

The simplest wavelet is the Haar wavelet. The Haar wavelets we call a function on the real line  $\mathbb{R}$  defined by the formula (see: Dooms & Daubechies (2011); Hadaś-Dyduch, 2015b, 2015c; Mix & Olejniczak, 2003):

$$H(x) = \begin{cases} 1 & \text{for } x \in \left[0, \frac{1}{2}\right) \\ -1 & \text{for } \left[\frac{1}{2}, 1\right) \\ 0 & \text{for other } x \end{cases} \quad (2)$$

The Haar wavelet is considered as a special case of Daubechies wavelet (db1). The Daubechies wavelets are marked db1, db2, db3 respectively, where the number on the right of the symbol describes the level of regularity of the wavelet. The Daubechies wavelet is a wavelet  $\psi$ , which is given with the formula 3 (see: Dooms & Daubechies (2011)):

$$\psi(r) = -\frac{1+\sqrt{3}}{4}\varphi(2r-1) + \frac{3+\sqrt{3}}{4}\varphi(2r) - \frac{3-\sqrt{3}}{4}\varphi(2r+1) + \frac{1-\sqrt{3}}{4}\varphi(2r+2) \quad (3)$$

$$\psi(r) = 0 \text{ dla } r < -1 \text{ lub } r > 2.$$

It should be mentioned that the wavelets are defined as wavelet functions and scaling functions. The wavelet functions are commonly called the mother wavelets, and the scaling wavelet are called the father wavelet. As Addison (2002) stresses: “(...) the wavelet function is in effect a band-pass filter and scaling it for each level halves its bandwidth. This creates the problem that in order to cover the entire spectrum, an infinite number of levels would be required. The scaling function filters the lowest level of the transform and ensures all the spectrum is covered (...). For a wavelet with compact support,  $\varphi$  can be considered finite in length and is equivalent to the scaling filter  $g$ ”.

For Daubechies wavelet  $\psi$  scaling function can be given with formula 4 (Dooms & Daubechies, 2011):

$$\varphi(r) = \frac{1+\sqrt{3}}{4}\varphi(2r) + \frac{3+\sqrt{3}}{4}\varphi(2r-1) + \frac{3-\sqrt{3}}{4}\varphi(2r-2) + \frac{1-\sqrt{3}}{4}\varphi(2r-3), \quad (4)$$

where:

$$\sum_{k \in \mathbb{Z}} \varphi(k) = 1, \quad \varphi(r) = 0 \text{ for } r \leq 0 \vee r \geq 3,$$

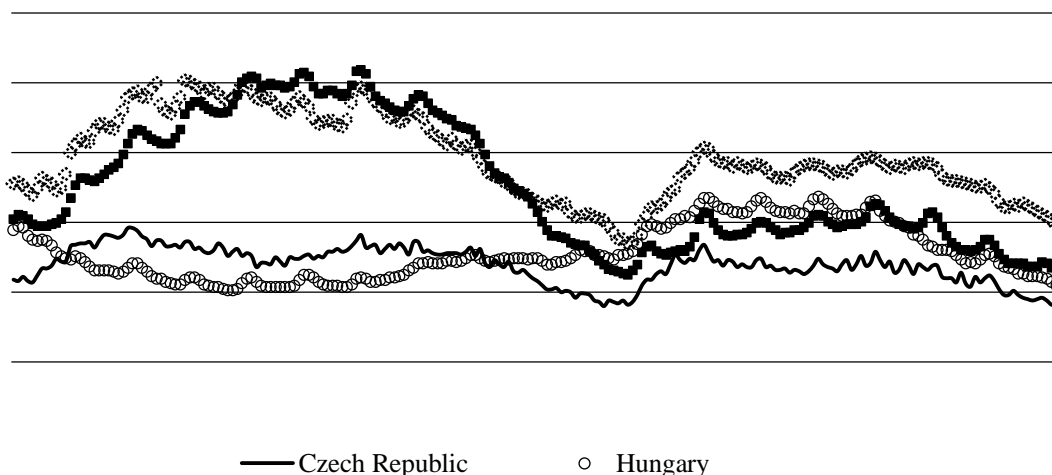
$$\varphi: D \rightarrow \mathbb{R}, \quad D_j = \{k2^j : k \in \mathbb{Z}\}, \quad D = \bigcup_{j \in \mathbb{Z}} D_j = \bigcup_{j=0}^{\infty} D_j.$$

Daubechies proved that the building block function  $\varphi$  does not admit any algebraic formula in terms of elementary mathematical functions.

### 3. Empirical analysis

The subject of the research is the unemployment rate in the Visegrad economies. In the analysis Eurostat monthly time series for the period: January 1998–April 2016 were used, which gave 220 observations. The data is presented in Figure 2.

Figure 2. Monthly unemployment rate in Visegrad Countries

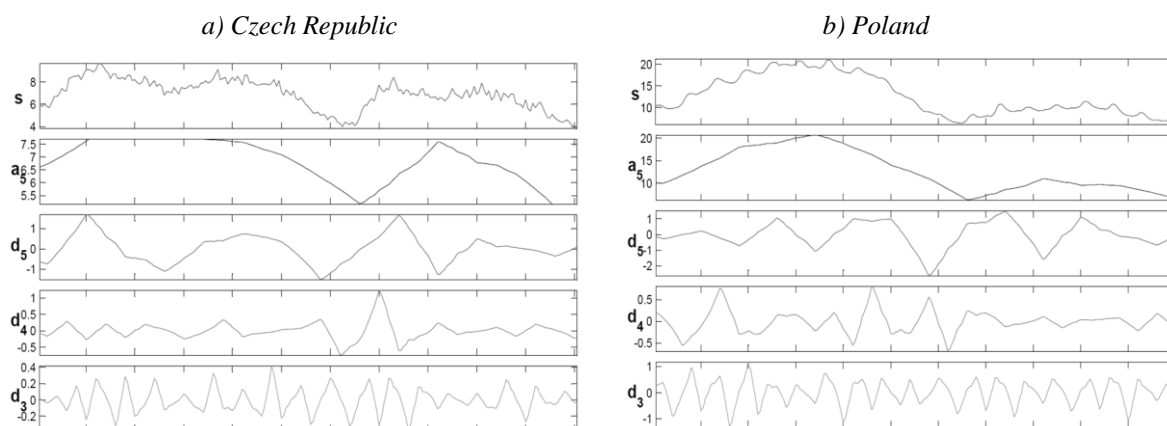


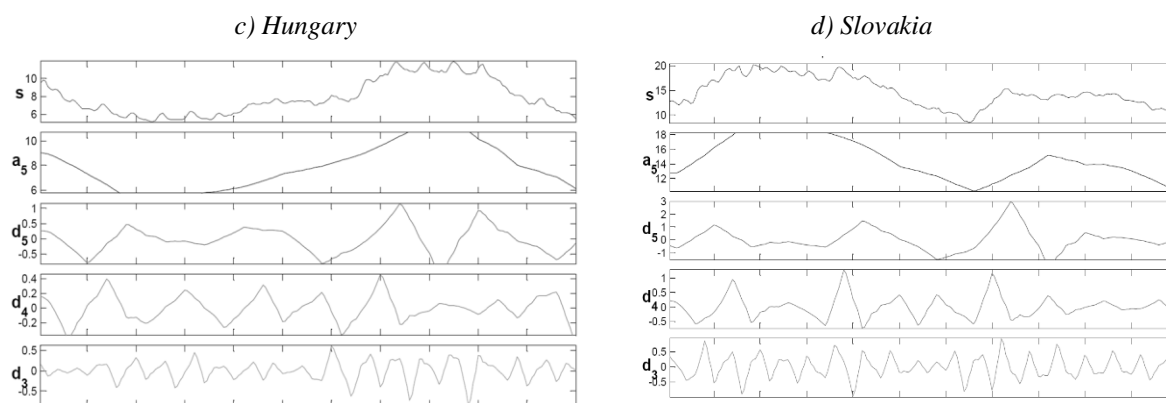
Source: Eurostat data. Retrieved from <http://appsso.eurostat.ec.europa.eu/>.

For the given time series five stage wavelet decomposition was conducted. In the research db3 wavelet was applied. The results of wavelet decomposition for the four Visegrad countries are presented in Figure 4. Based on the five-level wavelet decomposition approximation a5 and details d5, d4, d3 were chosen. Approximation a5 is the most smooth series. As a result, it presents long term tendencies of unemployment rate for analysed countries. On the other hand, the details d5, d4 and d3 describe the fluctuations of unemployment rate around the long term trend. Detail d5 describes the fluctuations around the trend in the period 16 to 32 months, and the detail d3 the fluctuations from 8 to 16 months.

An analysis of time series given in Figure 2 and approximations a5 presented in Figure 3 enables assessing long term tendencies for the unemployment in the years 1998-2016. From the long term perspective the best situation of a labour market can be found in Czech Republic, where unemployment rate varies from 4 to 10%, whereas in the case of Poland and Slovakia it is 7–21%. However, the most interesting difference between the countries can be seen in the case of Hungary. For Poland, Czech Republic and Slovakia the period after accession to the EU is a time of constant improvement of the situation on the labour markets, which was interrupted by the global financial crisis. However, the Hungarian labour market was not benefiting so much from the accession to the EU, as the unemployment rate was growing after the year 2004. Figures 2 and 3 also confirm the negative effect of the global financial crisis on the labour markets of the region, where the worst situation could be found in Slovakia.

Figure 3: Wavelet decomposition for Visegrad countries





Source: own calculation.

However, really interesting information on the given labour markets can be obtained after analysis of details d5, d4 and d3. Due to the fluctuation periods it can be established that the detail d5 indicates fluctuations around the long-term cycle (3-5 years). Detail d4 indicates fluctuations around the medium-term cycle (2-3 years), and detail d3 presents the annual variations. Taken into consideration the detail d3, it is clear that the smallest fluctuations could be found on the Czech market, whereas the largest once were present in Poland. This indicates that in Poland the labour market is strongly disturbed by annual variations of other macroeconomic economic factors, whereas in Czech Republic the negative consequences of these distributions are much lower. As a result, the Czech labour market is characterized with high stability with relatively low level of unemployment. From the perspective of social sustainability this stability hand in hand with relatively low level of unemployment can be considered as a strong point of Czech economy (see Pietrzak & Balcerzak, 2016b; Balcerzak & Pietrzak, 2016c).

Detail d4 volatility indicates that after the global financial crisis, there was a significant reduction in the 2-3 years fluctuations, which is the result of a stabilization of the labour market in Visegrad countries. For detail d4 in the case of Czech Republic one can find only one high peak associated with the global financial crisis.

Detail d5 analysis allows to conclude that as a result of the global financial crisis in Slovakia an increased fluctuations peak of the period 3-5 could be seen, which was significantly higher than in other countries. This factor confirms that the Slovak labour market was the most vulnerable in the region to exogenous global macroeconomic shocks.

In the end, it is also evident that the greatest downward peak, which was the result of an improvement in the labour market appeared for Poland in the period 2004-2007, and the lowest one for Hungary.

## 4. Conclusion

The article concentrated on the empirical analysis of unemployment rate for the Visegrad countries in the years 1998-2016 with application of wavelets. Simultaneous analysis of Polish, Czech, Hungarian and Slovak labour markets can be justified due to macroeconomic, institutional and historical similarities of these countries. The whole group was able to transform successfully their economies from central planned to market oriented systems, where the labour markets reforms were the crucial element of this process. Additionally, the simultaneous research on the labour markets of the group can be useful in assessing differences



in their vulnerability to global exogenous shocks, which is useful in finding good policy practices and guidelines for potential reforms.

In the paper based on the wavelet analysis long-term tendencies for the unemployment rate were identified and the middle and short term fluctuations from the established trends were analysed. The research has revealed significant differences in the functioning of the labour market in the group and confirmed that the markets are characterized with a different stability.

In the group of analyses countries the best situation on the labour market can be found in Czech Republic, which is characterized not only with relatively low level of unemployment rate, but the market can be characterized with relatively high stability. On the other hand, the lowest effectiveness of the labour markets can be found in the case of Poland and Slovakia.

In the end, it can be also seen that after the disturbances resulted from the global financial crisis the situation on the labour markets of the Visegrad countries appears to be stabilizing.

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## **PROBLEMS WITH THE BREACH OF THE OBLIGATION TO PUBLISH FINANCIAL STATEMENTS AND ANNUAL REPORTS OF BUSINESS ENTITIES IN THE CZECH AND SLOVAK REPUBLIC IN THE CONTEXT OF GLOBAL REQUIREMENTS FOR REPORTING AND DISCLOSING INFORMATION**

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**Abstract:** The present paper analyses the long-term problem of business entities in the Czech and Slovak Republic in connection with the breach of the obligation to publish their annual financial statements and annual report. This legal obligation has been intentionally breached by business entities in the Czech and Slovak Republic for a long time because of their ignorance of the relevant legislation, their indifference as well as their fear of disclosing data from the accounting prior to the competition and the concern about possible abuse. If a company fails to disclose its financial statements and annual reports, it can be viewed as a company where corruption and possible distortion of the economic state can occur, including the possibility of hiding their bad financial situation. This paper aims to define the basic information related to financial statements and annual reports, the meaning, steps and form of disclosing financial statements and annual reports, including the analysis of the current state in the context of global requirements for reporting and disclosing information within the ongoing globalization trends. The paper also mentions possible sanctions for the failure to comply with the legal obligations, including own proposals and recommendations to eliminate this negative situation. Although there are several options to penalize the non-disclosure of financial statements and annual reports in the collection of the documents in the public register, these penalties and sanctions are rarely used in practise, and accounting entities are well aware of that fact, which leads to the long-term non-compliance with the obligation.

**Keywords:** financial statements, annual report, disclosure, public register, sanction

**JEL Classification:** M41, M42, M48, K22

## 1. Introduction

According to Section 21 of the Act No. 563/1991 Sb., on accounting (hereinafter referred to as ZoÚ), the domestic legal persons, foreign persons, state organisational components and natural persons which are listed in a public (or more precisely commercial) register are under the obligation to publish their financial statements or even annual report (if they are obliged to have their financial statement audited). The main purpose of the financial statements and annual report is to provide users with information on assets, debt, equity, costs and revenues as well as profit, including the ability of the accounting entity to continue its activities. This is why they need to be prepared according to the principles of comprehensibility, materiality, reliability and comparability, which is the basis for assessing the economic situation, property and resource structures and for monitoring tendencies and trends in a company. The financial statements are also used as an effective managing and controlling tool in a company, and they are a basic source for evaluating the performance of the company. The disclosure obligation is known to the accounting entities and even if it may be sanctioned, it is a common practise that accounting entities tend to fail this obligation, usually on purpose. If a company fails to disclose its financial statements and annual reports, it can be viewed as a company where corruption and possible distortion of the economic state of the company can occur, including covering their bad financial situation or avoiding regular tax payments. (McGee & Tušan, 2008).

## 2. Financial statements and annual report in the Czech Republic

For business entities, the prepared financial statements and annual report are a final stage of processing accounting information for an accounting period and are one of the main sources of information about the economic result of the entity. Pursuant to Sec 18 of ZoÚ, the financial statements in the accounting comprise of balance sheet, profit and loss statement and explanatory notes, which explain and supplement the information provided in the balance sheet and profit and loss statement. Since 1 January 2016 there has been a substantial change associated with the introduction of the new categorization of accounting entities (micro, small, medium-sized and large accounting entities; see table 1), which brought an obligation for large and middle-sized accounting entities to prepare statement of cash flows and statement of changes in equity (reference to IAS 1 – Presentation of Financial Statements). This change is related to the harmonization of Czech accounting legislation and IAS/IFRS. The purpose of IAS/IFRS is to ensure that information obtained from accounting is comparable and understandable for all their users (Krajňák, 2014). Findings of the study Yip & Young (2012) or Ahmed et al. (2013) show that by preparing the financial statements according to IFRS, the comparability of the information derived from the financial statements increased.

Table 1: New categorization of accounting entities from 1 January 2016

Accounting entity category *)	Turnover (m CZK)	Assets (m CZK)	Number of employees
Micro	up to 18	up to 9	up to 10
Small	up to 200	up to 100	up to 50
Medium-sized	up to 1,000	up to 500	up to 250
Large	1,000+	500+	250+

Source: Act No. 563/1991 Sb., on accounting, as amended

\*) Inclusion in the higher category if min. 2 of 3 criteria are exceeded at balance sheet date.

A Public Interest Entity and Selected Accounting Entity are always considered as large accounting entity. The financial statements can be prepared in a full or abbreviated form. Accounting entities without the obligation to have their financial statements audited prepare their financial statements under the Sec 20 of ZoÚ in the abbreviated form. Based on their decision, however, these accounting entities may prepare the financial statements in the full format (Hakalová et al., 2015). Pursuant to Sec 37 of ZoÚ, the failure of not preparing the financial statements and annual report is considered to be an administrative offence, and it may be fined up to 6% of total net assets; until the end of 2015, it was in the value of gross net assets.

The annual report is an important part of the information flow among a company, business partners, associates, stakeholders, potential investors, financial institutions, customers and its employees. The basic requirements for the preparation of an annual report include especially the clarity, transparency, openness, high information value and impressive visual solution (Hakalová, 2010). Pursuant to Sec 21 of ZoÚ, the annual report is prepared by accounting entities which are required to have their financial statements audited according to Sec 20 of this Act. The quality of the annual report, including the information it contains, is verified (Hakalová et al., 2016). Pursuant to Sec 21 of ZoÚ, an accounting entity is required to include in its annual report financial and non-financial information at least to the extent specified by the law. Since 1 January 2016, it is also necessary to provide information on the acquisition of own stocks or shares. Middle-sized small or micro accounting entities no longer provide non-financial information in their annual report with the effect from 1st January 2016.

## **2.1 Disclosure of financial statements and annual report in the Czech Republic**

The disclosure obligation is defined in Sec 21a of ZoÚ. Accounting entities defined in Sec 20 of ZoÚ are obliged to disclose their financial statements and annual report after it is audited (if they are required to be audited) and after approval by a relevant authority (usually general meeting) within 30 days after the fulfilment of the two conditions, unless a special law stipulates a different period, but not later than 12 months from the balance sheet date of the disclosed financial statements. Accounting entities which are registered in the public register disclose their financial statements and annual report by filing into the collection of documents of the public register, which is open to public and everyone can inspect it, make copies or excerpts from it (Hakalová et al., 2014).

## **2.2 Imposing sanctions for the breach of the obligation and the situation in practice**

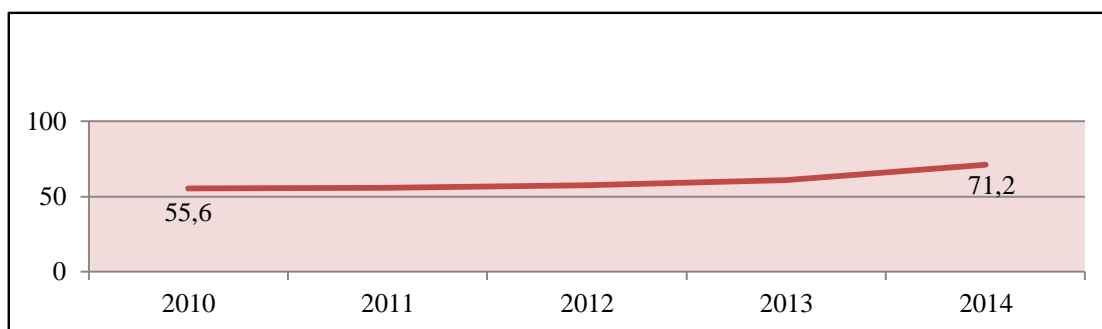
The non-disclosure of the financial statements or annual report may result in imposing several sanctions in the form of:

- a fee up to 3 % of the assets value pursuant to Sec 37 of ZoÚ (this sanction is in practise imposed to a lesser extent, usually in connection with the inspection by the competent authorities of Financial Administration of the Czech Republic and on the initiative of third parties),
- of a fee up to 20,000 CZK (it may be imposed by regional registration courts in connection with cases solved or on the initiative of third parties; it is rarely used),
- prohibition of activities for up to 1 year and a fee up to 50,000 CZK (it is imposed by trade department of municipalities with extended powers, and it is hardly ever used),
- a sanction according to the damage associated with the distortion of economic results and related threats and limitations to rights up to 8 years of imprisonment (it may be

imposed by the authorities involved in criminal proceedings; it is almost never used in practise).

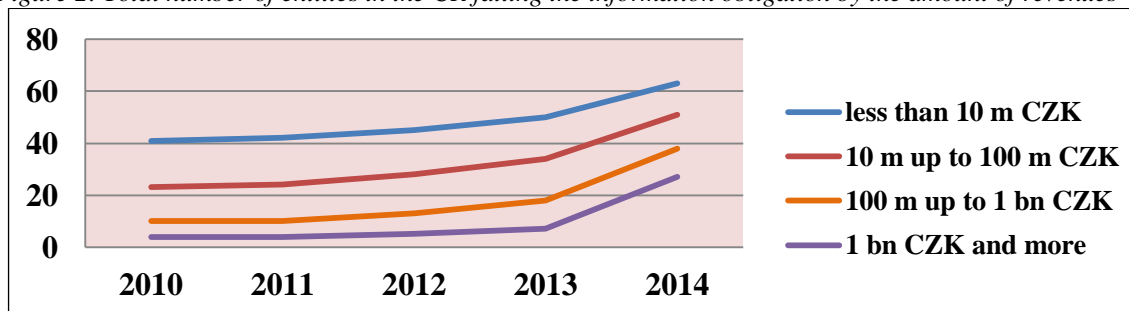
Although there are several options to penalise the non-disclosure of the financial statements and annual reports in the collection of the documents in the public register, these are rarely used in practise, and accounting entities are well aware of that fact which leads to the long-term non-compliance. In the past few years, there have been several surveys dealing with this topic, for example the analysis by CCB - Credit Bureau of the Dun and Brandstreet found that on a long-term basis approximately 50-60% of entities do not disclose their financial statements and annual report. According to the analysis by Bisnode, 76% of companies even failed their obligation to provide information for 2014 (Bisnode, 2016). This situation is in the long term unacceptable and unsatisfactory. The least disciplined are accounting entities with the line of business in financial intermediation and retail. The situation is illustrated in the graph 1 and 2.

Figure 1: Total number of entities in the CR failing the obligation to disclose their financial statements and annual reports in %



Source: Bisnode (2016), own processing

Figure 2: Total number of entities in the CR failing the information obligation by the amount of revenues



Source: Bisnode (2016), own processing

This obligation of business entities has been repetitively and intentionally breached because of their ignorance of the relevant legislation, unwillingness as well as fear of disclosing data from accounting prior to the competition or because of the concern about possible abuse, considering that the public register in the Czech Republic is open to public without any limitations or charges. On the other hand, it is the public register which allows to verify the information about business partners and so protects the accounting entities before entering into business relationships with untrustworthy partners or corporations which are at risk of insolvency (Bánociová, 2014). The non-disclosure of financial statements and annual report hinders the chance of a quick screening of business partners, and may in practice constitute a higher risk in the form of possible bankruptcies for the very companies that violate this obligation in the long term.

### **3. Financial statements and annual report in the Slovak Republic**

According to the Slovak ZoÚ, the financial statements are a structured presentation of the facts which are a subject to accounting, and they are provided to persons who utilize such information. An accounting entity is required to prepare the final statements within 6 months from the date to which they are prepared. In the system of double-entry bookkeeping, the financial statements comprise of balance sheet, profit and loss statement and explanatory notes. The notes contain information which explain and supplement data in the balance sheet and the profit and loss statement. If the accounting entity is subject to an audit, the notes also include the statement of cash flow and statement of changes in equity (Andrejovská, 2014). The accounting entity will state in the notes information about facts which are not reported in other parts of the financial statements, but consequences of which have a significant impact on the view of the financial situation of the accounting entity (Tušan & Stašová, 2008). The Ministry of Finance SR defined by a regulation the layout, labelling and the content of the financial statement for businesses which use the double-entry accounting system.

The obligation to prepare an annual report is mandatory for accounting entities which financial statements are subject to audit (except for branches of foreign banks, insurance companies and branches of foreign traders with securities). The annual report includes financial statements for the accounting period for which it is prepared and auditor's report on the financial statements (Tušan et al., 2013). The annual report contains other information required by the law. An accounting entity which issued securities on a regulated market includes a corporate governance statement in its annual report, the content of which is defined in Slovak ZoÚ. Such accounting entity is obliged to provide in its annual report information on the structure of the capital, shareholders, agreements between shareholders, restrictions on the transferability of shares, details of the appointing and dismissing members of its statutory body and changes to the statutes (Tušan, 2014). Individual and consolidated annual report are also disclosed by filing in the register of financial statements.

#### **3.1 Disclosure of financial statements and annual report in the Slovak Republic**

According to the Commercial Code, public limited company, limited liability company, cooperative and state company store their ordinary financial statements and extraordinary financial statements into the collection of documents after it is approved by a competent authority. The competent authority of these entities must submit ordinary financial statements and extraordinary individual financial statements for approval within six months after the end of the accounting period. If the law requires the registered entity to have its financial statements audited, the audited statements are filed in the collection of documents along with the auditor's report (Andrejovská & Bánociová, 2014). If the law requires the registered entity to prepare an annual report and the report includes audited financial statements, the financial statements can be filed as a part of the annual report. Since 2014, the financial statements have been filed in the register of financial statements, which terminates their duplicate submission to various institutions (such as Commercial Register). The establishment of the register does not terminate the submission of the files to the collection of documents, but the files are filed by the registry administrator and not the entity. The register of financial statements is a public administration information system which is administrated by the Slovak Ministry of Finance (Slovak ZoÚ, Sec 23). The register has a public and a non-public part. The operator of the register makes the documents from accounting entities available in the public part of the register to all persons



through a website in an electronic form and free of charge. Special provisions of the Accounting Act apply to the disclosure of documents from the non-public section of the register.

### **3.2 Imposing Sanctions for the Breach of the obligation and the Situation in Practice**

Failure to comply with the Slovak ZoÚ is considered an administrative offense. The tax office will impose a fine to an accounting entity, if the entity had not filed or disclosed documents in the register of financial statements, or if it did not comply with the notice from the tax office to remedy deficiencies relating to the correctness, veracity or completeness of stored documents. The fine is up to 2% of the total assets (net value) recognized in the balance sheet prepared for the inspected accounting period; the maximum fine is, however, no more than 1,000,000 EUR. Commercial code obliges the public liability companies, limited liability companies, cooperatives and state enterprises to file their financial statements into the register of financial statements. Pursuant to Sec 68, the court on the proposal from a person which can demonstrate a legitimate interest or of its own initiative decides to dissolve a company if the company failed its obligation to file the individual financial statements for at least two accounting periods consecutively in the collection of documents, that is to the register of financial statements.

## **4. Conclusion**

Financial statements and annual report are an important source of information about assets and sources of coverage, costs and revenues, economic results of accounting entities, about their current financial situation, but also about the ability to continue to do business according to the going concern principle, and they are indicative of the health or potential threats in a particular company. Obligations to disclose financial statements and annual reports, which usually also contain auditor's report if they were audited, has been intentionally breached by accounting entities in the Czech and the Slovak Republic for a long time, and it is often considered as an unreasonable request from the state. Unlike the Czech Republic, the fine for an administrative offense of non-disclosure in the Slovak Republic is lower, but pursuant to the Commercial Code there is an option that in case of non-disclosure (for 2 consecutive accounting periods) a company may be removed from the Commercial Register. The analysis shows that the financial statements are not disclosed by most companies, including those who are audited. A declaration of the General Financial Directorate of the Czech Republic (at the meeting of the Coordination Committee with the Chamber of Tax Advisers of the Czech Republic in December 2015) shows that apart from the non-disclosure, companies also have problems with the fact that the published statements are incomplete (for example signature records and other mandatory requirements according to ZoÚ are missing). Another significant issue is that accounting entities disclose their financial statements as several different documents while violating Sec 18 of ZoÚ which defines the financial statements as an integral whole. Accounting entities which publish the statements, but in an incorrect way, are in danger of the same sanctions as those who do not disclose the financial statements at all. Accounting entities are mainly concerned with the publication of sensitive information and their misuse by competition. Since 1 January 2016 pursuant to the amendment of ZoÚ, the obligation to disclose statements has been mitigated for micro and small accounting entities which are not audited and are not required to publish their profit and loss statement (for the first time for the accounting period of 2016). The question remains whether this mitigation will make accounting entities to publish other required components of the financial statements; we believe that this is not the case. Since

the sanctions for breaching the ZoÚ are not used to a greater extent, the accounting entities are not motivated to change the current state, and the breach of the obligation is perceived as a normal state. Accounting entities also ignore the legal obligation because the possibility of sanctions from the state is actually minimal. The inspection of disclosing financial statements and annual reports is in fact not the main activity of the tax administration. According to the survey of Bisnode, the Czech Republic could obtain at least 13.7 billion CZK in fines for failure to comply with reporting obligation, or up to 256 billion CZK as an additional income to the state budget (Bisnode, 2016). It is arguable that the repeated failure to disclose financial statements and annual reports may be associated with hiding corrupt behaviour or distorting economic results and financial situation of the accounting entity.

The resolution of the long-lasting issue has been largely discussed for several years. In view of the above mentioned negligence of Czech companies to publish their financial statements and annual reports, changes can be suggested in four main areas:

- To actively impose potential penalties for the failure to comply with this obligation and regularly notify accounting entities that they failed to comply with the obligation;
- Alternatively, to introduce other "hard" measures, like for example Germany or the Slovak Republic, where for the breach of the disclosure obligations applies much tougher sanctions in the form of removal from a public register (after introducing sanction and thorough inspection of the breach, 90% of accounting entities started to disclose their statements);
- To introduce a fee for accessing the public register, which would partly alleviate the concerns of companies about competitor's easy access to information (charges were for example implemented in Austria, Poland and other countries);
- Alternatively, to introduce automatic submission of financial accounts to the public register (so-called sharing documents between different authorities). Financial statements are a mandatory supplement to the tax return and are filed in the relevant regional office of the Financial authority, so if the accounting entity does not comply with the obligation itself and no disclosure takes place, the statements would be automatically shared between the authorities; this activity would be charged and a sanction would be imposed on the accounting entity.

In our opinion, these measures would lead to a significant increase in compliance with the obligation to publish financial statements and annual report, and fewer accounting entities would intentionally avoid this important requirement. Global requirements for reporting and disclosure of financial statements and annual reports, which are set in national but also international standards, ensure a high level of transparency and comparability of financial reporting for all publicly-traded companies in the European Union, which is a necessary condition for the creation of an integrated capital market under the current globalization trends.

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# THE DEVELOPMENT OF UNEMPLOYMENT IN SLOVAKIA IN THE CONDITIONS OF GLOBALIZATION

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**Abstract.** Globalization of the world economy considered essentially positive phenomenon, since it promotes the exchange of material and spiritual values. On the other hand, the global economy develops as a polycentric system, which involves different parts of the world meet are enforced power interests. Uniformity offered by the grouping of multinational companies has resulted in a negative action, under which the disappearing local, regional and even national cultural features. In many countries, the multinational group held protests through which it is pointed out that their wealth gives them the power to influence economic and political decisions of governments, particularly in the area of trade restrictions. Some multinational groupings are even accused of abuse of cheap labor to produce goods to be sold at a profit Western consumers. Conversely, in some countries, the positive trends of globalization, as an example of the benefits of globalization are often referred fast growing Chinese economy. Unemployment of each country influences its performance and is deeply connected to work productivity, inflation and living standard of population. Inflation and unemployment are phenomena, to which modern economy pays higher attention.

**Keywords:** globalization, unemployment, regions, wages, inclusive labor markets

**JEL Classification:** H25, M21, M50

## 1. Introduction

Unemployment in conditions of Slovak republic reaches in some regions the number of over 20 % and our country is on the first place in ranking of long-term unemployment within member countries of European Union. Recent situation in particular regions of Slovakia varies. In some of them are mechanisms working on the market relatively sufficient and the unemployment has rather short-term character. In others, the unemployment rate, also after executed precautions, increases and still greater part of unemployed remains without work more than one year. Tools functioning in regions with lower long-term unemployment rate are becoming ineffective in problematic regions and wrongly set precautions (activation works, graduate practice, grants) only drain out resources, which could be used in more effective way. Therefore, there is an effort to find new tools for solution of this issue. Strategy Europe 2020 was introduced on March 3<sup>rd</sup>, 2010 by chairman of European Commission, José Manuel Barroso. It has 32 pages and it has defined three main pillars of economical growth, and it is growth intelligent, sustainable and inclusive at the same time. Intelligent and sustainable growth is already for a longer period the part of most of visions and strategies of economies' and regions' development, but the inclusive growth is still overshadowed. The objective of inclusive growth is that the

overall economical growth will be generated by all areas of economy and that all areas will also be profitable. However, simplified view on economical indicators of Slovak republic indicates the opposite - Bratislava is highly over the national average, West Slovakia culminates around the average rate, but Central and East Slovakia significantly fall behind. According to Eurostat (2015), some countries have persistently low unemployment, such as Austria, the Netherlands and Germany. In other countries, however, economic uncertainty caused by the crisis keeps unemployment high (Copuš, 2015). Since Slovakia troubled by high unemployment, it is important to create new jobs as a filling state coffers. With employment growth does come to the state and money (Vavrová, 2015). On corporate governance is constantly pressured with a requirement for involvement in globalization and demands for as greater flexibility for with respect to its own employees and the surroundings of the company (Němcová & Marková, 2015).

## 2. Theoretical approaches to unemployment in the world

The term unemployment was for the first time used in the beginning of the 20<sup>th</sup> century. Great unemployment appeared in 1930's, during the Great Depression. In this period started to occur various theories, causes, analyzes and approaches to the unemployment. According to Uramová, theoretical movements significantly differ mainly in the question of what causes the unemployment. „As causes are frequently determined states, unions, enterprises and individuals. Generally, we can speak of two basic marginal approaches: liberalistic, which is based on classical understating of labor market, and on the other side is interventional, which recommends to solve the issue of unemployment by active policy from the state's party.” — (Uramová, 2005).

*Liberalistic economy* – is characterized by market conception and market balance, which is ensured by so called invisible hand on the market. Each market is in balance, when the supply of work opportunities is equal to demand for jobs. The balance is ensured by market mechanism, which works without and intervention of the state; but on the other hand, the regulation of the state obstructs formation of natural balance. „Workforce is goods as any other, and unemployment is therefore only the result of market mechanism effect, the demonstration of short-term imbalance between demand and supply of work. Decrease of production costs and growth of marginal usefulness of capital leads to increase of investments and also to growing demand for work. (Mareš, 1994).

*Keynes's approach* – Keynes in his work General theory of employment, interests and money (Keynes, 1936) negates the liberal approach to the unemployment. There, he refused the idea of existence of solely voluntary unemployment and introduced the theory of permanent involuntary unemployment. This theory was introduced in the period of Great Depression, when the aggregate demand was in decrease, as well as output and employment rate. As the main reason for long-term unemployment he saw the technological progress; another reason was the demand ineffectiveness. The consequence of technological progress was crowding out and replacement of live work.

*Neokeynes's approach* to the unemployment tried to unify two significant conceptions – the theory of J. M. Keynes and neoclassical economics. The theory was based on the ability of labor market self-regulation. In the precondition that prices and salaries are perfectly elastic, market balance is formed automatically, and this balance is reached by the full employment. Representatives of neoclassical synthesis acknowledged validity of Keynes's employment

model in the short-term period; however in long-term period they think that valid are outcomes of neoclassical approach about elastic salaries and voluntary unemployment.

An English economist A. W. *Phillips* created the curve, by which he demonstrated the substitution relationship between the unemployment and inflation. Phillips, in his work as first put reasons for his thesis, that the lower is the unemployment rate, the higher is the inflation rate (Phillips, 1958). He analyzed changes of nominal salary rate in dependence on the level of unemployment. This consideration is based on the precondition that the low rate of unemployment depends on high demand in economy. The asset of Phillips's curve is that it enables to measure the conflict between the full unemployment and price stability. Simultaneously is considered the relation between the change of salary rate of economy as the whole and the change of price level. The original curve was modified several times, until it was stabilized on, so called, modified Phillips's curve suggested by Samuelson and Solow, who have replaced the growth rate of nominal salaries by inflation. The initial formulation of Phillips's curve is not used nowadays anymore, but in 1960's was this theory really breaking. Nowadays, this curve is most frequently used in the form, where the pace of salary inflation decreases with the growth of unemployment rate.

*Work flexibility* brings to the labor market solution of problems connected with the unemployment and bad structure of demand and supply. Work flexibility means adaptation of employment to economical requirements. In the broadest sense, S. Procter and S. Ackroyd define the flexibility as a certain quality, by means of which the entity adapts to the change in to it directed requirements (Procter & Ackroyd, 2001). The aim of quantitative flexibility was to adapt the amount of workforce to needs of production. One of possible ways how to reach this goal is to freely hire and fire. The second way is the temporary supply of workforce, when the company rents employees for the certain period. The last kind of quantitative flexibility is elastic working hours. It is the option to modify the work period by the most various ways in dependence on needs of the company. The result is that the work will become unstable and its character may be modified. Changes may appear during the working hours, but also by the change of the type of work contract. Negative sign of this theory is increased risk of loss of employment.

*The term flexicurity* in regards to the labor market, used as the combination of words flexibility and security, was introduced into practice by Danes. Flexicurity characterizes generally the whole Danish labor market. Its asset is that the security and flexibility are not in contradiction, so the security is not to the exclusion of flexibility and vice versa (Schmid, 2009). Danish system of labor market is positioned near the liberal systems with the low protection of employees against the dismissal, but at the same time, there is built the network of social insurance with high compensations of salary. The Danish model combines the dynamics of free market economy with social insurance and social balance of Scandinavian type. Danish model of labor market solves in socially balanced way the macroeconomical issues, together with imbalance on the labor market. Its main features are flexibility and security, which are deeply connected to socialization of workforces. This brings on one side collective social sense in regards to the financing of regulations, but at the same time the liberality, as it brings the option to adapt usage of workforces. The model stands on three pillars:

- relatively high compensation of salaries by unemployment,
- great flexibility on labor market in the form of flexible rules of protection against dismissal, for example short period of notice,
- active policy of labor market;

The model ensures that unemployed people actively look for jobs or complete some education. In the Danish model, the state takes care about education financing, and that mainly by people with lowest degree of education and with the lowest possibility of connection to the labor market. Flexicurity is focused on greater security in employment and for ensuring the protection of still more complex occupational procedures within the company, but also by transfer into another company and simplification of employment change. Companies' adaptability can be strengthened by means of flexible work schedule and in this way to achieve higher level of elasticity. For companies is also deciding to support the development of internal functional flexibility, related to types of works, forms of work organization and qualification of employees.

*In France* was in companies with more than 300 employees introduced the system regarding to "prognostic management of workplaces and qualifications." — Discussion about the company's strategy and future needs from the point of view of workplaces and qualifications of employees has to ensure better in-house management of human resources.

*In Spain* is the key objective the improvement of professional training system. Since 2007, when was signed the trilateral agreement on professional training, employees have the right to take professional holiday for the purpose of specialized professional training, while companies have the option to receive the financial aid for support of projects for specialized professional trainings.

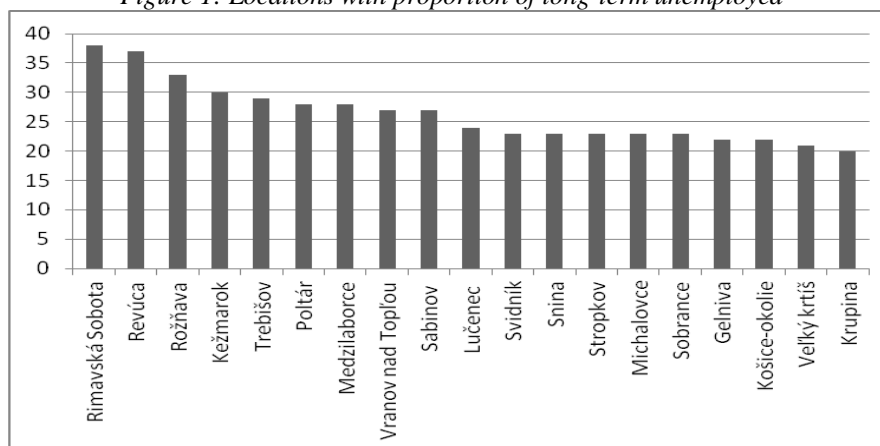
Employees, who lost their jobs as a consequence of restructuring, may become long-term unemployed. In connection to the *trilateral agreement*, in 2005, *Finland created* the model of security in changes to the support of employees requalification dismissed for economical reasons. To those are given free days within the period of notice, which can be used for searching for new job; they will receive higher severance pay for the reason of dismissal and they can also use the special program of public services for professional training and searching for a job. On these programs are reserved funds from European fund for adaptation and globalization, European social fund and European fund for regional development. In *Sweden are applied* "transitional agreements", with the same objective. They include two million employees and are focused on simplification of working inclusion of employees in the case of restructuring.

### **3. The current development of unemployment in the Slovakia**

Long-term unemployment is one of factors and also consequences of regional differences in Slovak republic. On one hand, the weak economical development of region is the cause of lack of workplaces, of which consequence is the increase of unemployment rate, and also long-term unemployment. While regions with the strong economical development and growth can generate new workplaces also in the period of crisis, other regions are doubly affected. On the other hand, consequence of unemployment is the lower standard of living, as incomes of unemployed from social benefits are lower, than income from work. In regards to the lower living standard, unemployed do not purchase selected goods and services, and if they do, they do it in lower rate and structure than employed. High rate of unemployment pushes the price of work down, as employers have enough potential employees applying for free work positions. The consequence is lower purchasing power of the region, and by this also non-existing generation of workplaces (for example in restaurants, population services, and so on).

Long-term unemployment, in contrast to short-term unemployment, has also other negative features. It is unrealistic to assume that long-term unemployed person will after start of working perform like standard employee, with standard work performance. Also, the change of tax rates or volume of levies will not have appropriate effect comparable with regions, where the labor market works. Consequences of long-term unemployment are negative also outside of economical indicators – they start from grown apathy and satisfaction with the current condition, continue in occasional slight criminality, then follows the transfer on next generations and lowering of their chances in the future, and it all ends in unfriendly moods of majority population. With the growing number of long-term unemployed falling on the total number of economically active, still less economically active people have to feed more long-term unemployed. In districts like Rimavská Sobota, Revúca and Rožňava form from the total number of economically active people more than 30 % of long-term unemployed; in districts Kežmarok and Trebišov the situation does not differ much (Figure 1). More than 25 % of long-term unemployed of the number of economically active people live also in Poltár, Medzilaborce, Vranov nad Topľou and Sabinov; and less than 25 %, but more than 20 % of long-term unemployed live in another ten cities. On the basis of mentioned facts, it is clear that in areas with below-average results of monitored indicators live inappropriate number of people, who moreover take a large part of this area – so, the current situation is really far from the inclusive situation (Páleník & Oravcová, 2013).

Figure 1: Locations with proportion of long-term unemployed



Source: Páleník & Oravcová (2013), own work

According to „Report on country, Slovakia 2015“ European Commission states that the rate of unemployment slightly decreased in 2014, but it remains over the average of EU (12,5 % in comparison with 9,9 % in EU-28 in December 2014), while is it mostly structural and it has a long-term character. Weak demand for workplace and low number of free work positions in connection with one of the lowest fluctuation of workplace within EU cause one of the highest rates of long-term unemployment in EU (10 % in comparison with 5,1 % in EU-28 in 2013). Unemployment of young people in December 2014 slightly decreased to 28,9 % (on the lowest rate since 2009), but Slovakia has still one of eight highest rates of young people unemployment in EU. Almost two thirds of unemployed young people search for job a year or longer, which is the largest part from states of EU. The proportion of young people, who are not employed, and are not in the process of education or professional training, is close to average of EU. In February 2014 was adopted updated plan of guarantee execution for young people and implemented were several reforms (e.g. reform of specialized education and training, mentioned below). In 2014 was on salary granted work positions positioned 1 694 young



people. However, in 2014 only about 10 % of unemployed young people, who were authorized to receive guarantee for young people, really received one of four offers (work offer, specialized education or training, scholarship). In 2015 should be launched new programs focused on ensuring of employment for long-term unemployed employees with low degree of qualification and other risk groups. Besides this, Slovak offices plan to address inactive young people by means of existing community centers and social workers in practice, but it is not completely clear, how will the concrete support look like. Realization of guarantee system for young people will depend on ensuring of appropriate financing, strengthening of administrative capacities and building of partnerships on local level, to address also broader crowds of unregistered young people, who are not employed or in the process of education or specialized professional training.

Slovakia has launched several reforms focused on elimination of factors discouraging from work in the system of social benefits. Despite significant regional differences in rates of unemployment, the regional mobility of workplace in Slovakia is relatively low and limits assigning of free work positions to suitable applications for work. Minimal wage increased in 2015 by almost 8 % (to 380 EUR) and net minimal wage (339 EUR) nowadays exceeds the poverty income threshold (337 €).

Approximately 60 % of unemployed in Slovakia are workers with the low qualification and almost 70 % are long-term unemployed (without work longer than one year), while both numbers belong to worst in EU-28. In this regard, European Commission further states that the quality of education and results in the area of education in Slovakia are still very poor. Increase of salaries is still insufficient to attract and maintain talented young people, while mainly initial wages are very low. Slovakia puts in science and research only minimal percent of GDP. The consequence can be further leave of intelligence and loss of competitiveness.

At present, compared with the end of April 2016 the registered unemployment rate decreased by 0.19 a percentage point year on year was lower by 2.03 a percentage points. Labour offices registered at the end of last month, 256,742 of the available jobseekers. Compared to the end of April this year, a fall of 5,172 people. Yoy number of candidates who could immediately start work dropped by 52,781 persons.

*Table 1: Basic indicators on unemployment in Slovakia - May 2016*

Basic indicators on unemployment in Slovakia - May 2016				
Region	Economically actively of population	Number of unemployed	Unemployment rate (in %)	The registered unemployment (in %)
Bratislava	338 799	16 177	5,17	4,77
Trnava	291 569	16 523	6,58	5,67
Trenčín	299 838	19 982	7,68	6,66
Nitra	348 866	28 902	9,64	8,28
Žilina	344 039	25 130	8,53	7,3
Banská Bystrica	323 483	44 242	16,29	13,68
Prešov	398 554	57 038	17,01	14,31
Košice	371 405	48 748	15,91	13,13
Slovakia	2 716 553	256 742	11,13	9,45

*Source: Office of Labour, Social Affairs and Family, the customizations*

The unemployment rate calculated from the total number of job seekers reached 11.13% last month. Month to month a fall of 0.27 percentage point year on year it was lower by 1.93 percentage points. The total number of registered job seekers accounted for at the end of May this year 302,264 people. Compared to the end of April this year, a decrease by 7,319 persons compared with May last year, it's less about 49,878 people. The unemployment rate thus remained at its lowest level since January 2009 when it amounted to 9.03%. The registered unemployment rate in Slovakia reached the end of May this year, 9.45%.

#### **4. Conclusion**

Globalization is the integration of economies, industries, markets, culture and politics around the world. (Ceniga & Šukalová, 2015). Many international companies are being forced address the issue of domestic transfer rate of remuneration practices of the host country (Cocuľová & Svetozárovová, 2015). Addressing various crises accompany people on a daily basis over a lifetime (Bednárík & Čapkovičová, 2015). Changing distribution of economic activities in the area and their very structure of peripheral and socially excluded areas (Botlík & Botlíková & Pellešová, 2015). The educational level of the country forms important conditions for the business environment of the country and for individual business entities (Buňo, 2015). The main objective of Slovak national employment strategy achieves 72% of employment, reduction of unemployment and long term unemployment of the young generation (Béřešová, 2015). In order to create jobs, states create different kinds of subsidies, which apply only further burden the state budget (Butek, 2015).

According to Employment Institute, in order to inclusive market could have sufficient volume for employing of target number of employees, it is necessary to diversify resources of finances and purchasers, and that from villages and towns, through the state budget, up to public institutions and enterprises. The registration is currently 38.5 thousand of such long-term unemployed who have never worked. Of those not be complete or only primary school or are about 26 thousand people, but nearly 10 thousand received vocational and about 2,200 people complete higher education. Three-quarters of these persons do not exceed the age of 40 years.

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Indicate in the form of text with reference for example: "This contribution is the result of the project VEGA VEGA (1/1067/15) "Verification, and implementation of modeling business performance in financial decision-making tools".

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# MACROECONOMIC ANALYSIS OF SELECTED ASPECTS OF EUROPEAN MONETARY INTEGRATION

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**Abstract.** The paper focuses on the problem of the appropriateness of the monetary integration of heterogeneous states of the European Union. Its aim is to assess whether the common currency contributes to the convergence of economies in terms of selected macroeconomic indicators to comparable values. The analysis of the convergence is supported by discussion of the results of scientific literature and the results of the comparative analysis of cyclical alignment, or respectively misalignment, of the economies in the framework of economic cycle. The cyclical alignment/misalignment captures the extent of differences in the phase of the economic cycle, on which the economies are found due to the effect of asymmetric shocks. Furthermore, the heterogeneity of economies is studied in terms of the rate of growth/decline in inflation. The mobility of the labour factor in the framework of the European Union countries, which is one of the basic requirements of monetary integration, is analysed and evaluated on the basis of development of the long-term unemployment indicator. All quantitative analysis include statistical data from the last decade. The results indicate that differentiated monetary policies can better face the asymmetric shocks, unlike some economies with euro currency, in which the common currency acts counterproductively - the problems of recession caused by the shocks are deepened rather than absorbed. The paper also discusses the causes of this, which include, for instance, the tendency of diversion from economic considerations to political aspects.

**Keywords:** common currency, asymmetric shocks, heterogeneity, labour factor mobility, political aspects

**JEL Classification:** E23, E42, E60

## 1. Introduction

„Umění ekonomie“ spočívá ve zkoumání nejen bezprostředních, ale i dlouhodobých důsledků daného činu nebo opatření a ve sledování dopadů tohoto opatření nejen na jednu skupinu, ale také na všechny ostatní skupiny (Rogers, 1996; Hašková et al., 2016). Tato teze byla podle Krugmana (2014), Germain & Schwartz, 2014 a De Grauwe & Ji (2013) ignorována v oblasti monetární politiky, konkrétně při zavádění jednotné měny pro heterogenní státy Evropské unie. Dopady měnové integrace obecně z rozdílných hledisek posuzovali např. Mundell (1961), Krugman (2014), Scitovsky (1978), Bellofiore et al. (2015) aj. s rozdílnými závěry.

Např. Mundell v (1961) stojí za názorem, že k úspěšné měnové integraci je nutná s vysoká míra mobility faktorů uvnitř geografické oblasti a imobilita vně této oblasti (hlavní předpoklad teorie optimální měnové zóny); koncept optimální měnové zóny je aplikovatelný pouze v regionech, kde organizace politické struktury je ve stavu neustálé změny (např. v bývalých koloniích a státech západní Evropy). Samotný předpoklad dostatečné mobility faktorů označuje Krugman v (2014) za nereálný kvůli jazykovým, kulturním, historickým a dalším bariérám. Dále zdůrazňuje, že absence fiskální integrace znemožňuje zvládnutí problémů s přizpůsobením se jednotné měně. Rozdílný názor z hlediska úspěšného fungování jednotné měny zastává Flandreau & Maurel (2005) – podmínkou úspěchu není společná fiskální politika, nýbrž podobná úroveň hospodářské výkonnosti všech členských zemí a společná centrální banka. K nastolení fiskální disciplíny je dostatečně silným mechanismem efektivní kapitálový trh.

Smyslem příspěvku je zhodnotit, zda jednotná měna Euro zvýhodňuje či znevýhodňuje některé ekonomiky vůči jiným, resp. zda Euro přispívá k prohlubování rozdílů mezi ekonomikami Eurozóny z pohledu jejich cyklické polohy, inflace a dlouhodobé nezaměstnanosti. Asymetrické dopady jednotné měny na ekonomiky Eurozóny budou zhodnoceny na základě komparativní a statistické analýzy základních makroekonomických ukazatelů zahrnujících mezeru produkce hrubého domácího produktu (HDP), tempo růstu/poklesu inflace (HISP) a ukazatele vývoje dlouhodobé nezaměstnanosti. Kvantitativní analýzy vycházejí z databází Eurostat a OECD (Eurostat, 2016A; Eurostat, 2016B; OECD.stat, 2016) v letech 2006 až 2015. Kvalitativní analýza konvergence ekonomik Eurozóny je opřena o diskuzi výsledků vědecké literatury.

## 2. Metodika

Pro účely zhodnocení míry konvergence byla vymezena skupina západoevropských států Eurozóny. V dalším je tato skupina označena jako referenční ekonomika „*Region I*“ a tvoří ji Belgie, Francie, Německo, Irsko a Nizozemí. Druhou skupinu tvoří jednotlivé ekonomiky Eurozóny, jejíž zástupci jsou Itálie, Řecko, Španělsko, Rakousko, Portugalsko, Irsko, Německo a Slovenská republika. Komparativní skupina je tvořena státy Evropské unie s národní měnou: Česká republika, Maďarsko, Polsko, Švédsko a Velká Británie.

Analýza cyklické sladění, resp. nesladění (heterogenity) sledované ekonomiky s ekonomikou *Regionu I* v rámci deseti let (období 2006-2015) hospodářského cyklu, ve kterém se ekonomiky nacházely v důsledku působení různých nabídkových a poptávkových šoků, vychází z mezer produkce sledované ekonomiky a z mezer produkce referenční ekonomiky *Regionu I* jako celku, přičemž mezerou produkce každé z nich v daném roce je rozdíl jejího reálného a potenciálního produktu měřený v % HDP. Průměr z absolutních hodnot rozdílů mezer produkce sledované a referenční ekonomiky zjištěných v letech 2006-2015 definuje k tomuto období příslušnou odchylku cyklické pozice sledované ekonomiky od cyklické pozice ekonomiky referenční. Odhlíží se od nedokonalostí měrného kritéria HDP a předpokládá se, že potenciální produkt přibližně vyjadřuje nejvyšší udržitelný výkon sledovaných ekonomik za podmínek disponibilního množství a kvality výrobních faktorů.

Heterogenita ekonomik z pohledu odlišností v mírách inflace je založena na vyjádření diferencí mezi souhrnným nárůstem cenové hladiny měřeným indexem spotřebitelských cen za sledované období u jednotlivých ekonomik a průměrem ze souhrnných hodnot cenových hladin *Regionu I* (podrobněji k analytickým postupům v (Stehel & Vochozka, 2016)). Mobilita faktoru práce v rámci zemí Eurozóny je posuzována z hlediska ukazatele vývoje dlouhodobých

měr nezaměstnanosti sledovaných ekonomik vzhledem k *Regionu I*. Míra dlouhodobé nezaměstnanosti je procentuálně vyjádřena jako počet osob nezaměstnaných rok či déle v poměru k ekonomicky aktivní populaci.

### 3. Analýza cyklické heterogenity

Dopady poptávkových a nabídkových šoků na země Eurozóny v období 2006-2015 zachycují příslušné odchylky cyklických pozic sledovaných ekonomik od cyklické pozice ekonomiky *Regionu I* (viz Tab. 1).

Čím vyšší hodnoty, tím je rozdílnost v cyklické pozici sledovaných zemí oproti *Regionu I* zásadnější. Podle kritéria „sladěnosti“ je z Tab. 1 zřejmá podobnost hospodářského cyklu s *Regionem I* v Rakousku, Německu, Itálii a Slovenské republice. Naopak, největší rozdíly vykazuje Řecko a Irsko, a v menší intenzitě pak Portugalsko a Španělsko.

Table 1: Cyklická heterogenita zemí Eurozóny a cyklická heterogenita zemí Evropské unie s národní měnou

Země Eurozóny	Průměrná odchylka od cyklické pozice zemí <i>Regionu I</i> (v % HDP za období 2006 až 2015)	Země s národními měnami	Průměrná odchylka od cyklické pozice zemí <i>Regionu I</i> (v % z HDP za období 2006 až 2015)
Rakousko	0,87	Česká republika	1,26
Německo	1,59	Maďarsko	0,94
Řecko	7,47	Polsko	2,09
Irsko	3,79	Švédsko	0,72
Itálie	1,32	Velká Británie	1,04
Portugalsko	2,89	Dánsko	0,39
Slovenská republika	1,52		
Španělsko	2,82		

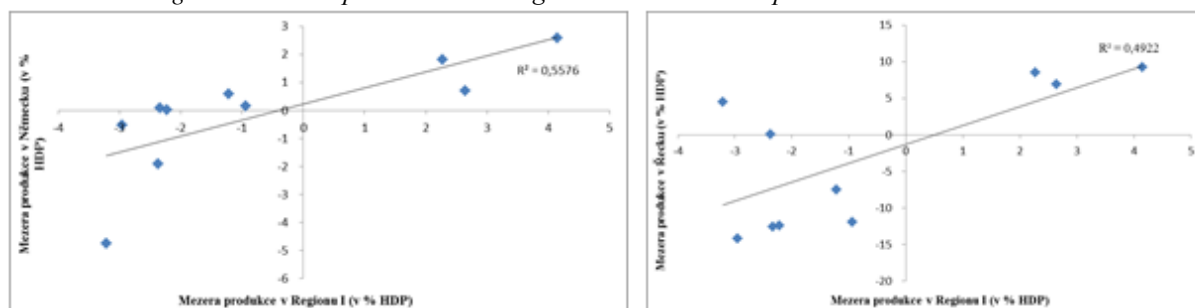
Source: OECD.stat, 2016 a vlastní výpočty

Alternativní přístup založený na komparaci složek cyklických pozic sledovaných ekonomik se složkami cyklické pozice *Regionu I* je vtělen do podoby dílčích grafů na Obr. 1. Zobrazené hodnoty mezer produkce zemí Řecka a Německa lze pokládat za realizace příslušných statistických závislostí na hodnotách mezer produkce ekonomiky *Regionu I*. Regresní přímkou definovaný vztah má své opodstatnění – ačkoli je jednotná měnová politika určena pro Eurozónu jako celek, nejlépe reflektuje národní zájmy hospodářsky nejsilnějších zemí měnové unie (v regresním modelu jsou prezentovány zeměmi ekonomiky *Regionu I*). Vztah mezi složkami cyklické pozice Řecka a cyklické pozice *Regionu I* (viz pravý graf na Obr. 1), tedy země nejméně cyklicky sladěné s cyklem *Regionu I*, vykazuje nízkou hodnotu koeficientu determinace ( $R^2 = 0,4922$ ) udávající nízkou predikční schopnost modelu. Z grafu lze vyčíst např. to, že když byla v ekonomice *Regionu I* mezera produkce ve výši 2,275, resp. 2,642, resp. 4,147 procent HDP, odpovídající hodnoty mezer produkce v Řecku činily 8,565, resp. 6,9, resp. 9,26 procent HDP. V oblasti pod potenciálem činila řecká mezera produkce -14,153, resp. -12,413, resp. -11,964 procent HDP; odpovídající mezera produkce *Regionu I* byla podstatně nižší, tj. -2,957, resp. -2,223, resp. -0,944 procent HDP. Tyto výsledky potvrzují výrazný cyklický nesoulad v hospodářském cyklu řecké ekonomiky a ekonomiky *Regionu I* jak v období expanze tak recese s důsledky, které jsou popsány níže (viz oddíl 3.1 a 3.2).

Jiného charakteru je regresní vztah mezi hodnotami mezer *Regionu I* a Německa (viz levý graf na Obr. 1). Model má podobně nízkou predikční schopnost ( $R^2 = 0,5576$ ) jako předchozí, nicméně, z opačného důvodu. Hodnoty mezer nad i pod potenciálem zemí *Regionu I* evokují

nižší hodnoty mezer produktu Německa téměř ve všech zkoumaných letech (např. roku 2007 činila mezer produkce *Regionu I* 4,147 procent HDP, Německo překračovalo svůj potenciál jen o 2,572 procent HDP; v době recese, např. v roce 2013, činila mezer *Regionu I* -2,957, v Německu šlo pouze o -0,527 procentní pokles HDP pod potenciál). To ukazuje mimo jiné na fakt, že ve srovnání s referenční ekonomikou *Regionu I* vyhovuje jednotná eurová měna potřebám ekonomiky Německa lépe.

Figure 1: Mezera produkce zemí *Regionu I* versus mezer produkce Německa a Řecka



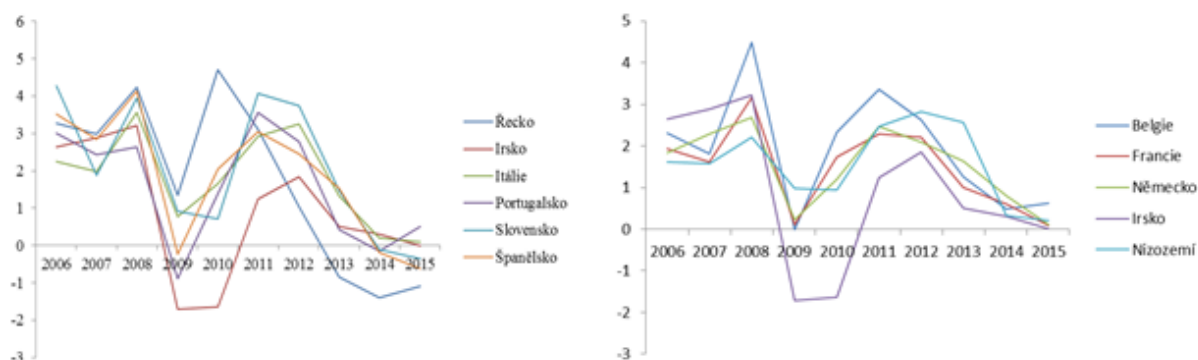
Source: OECD.stat, 2016 a vlastní zpracování

Odchyly cyklických pozic států Evropské unie s měnovou suverenitou od cyklické pozice *Regionu I* jsou zaznamenány v pravé části Tab. 1. Ve srovnání s hodnotami odchylek sledovaných zemí v levé části Tab. 1 jsou jejich cyklické pozice blíže průměrným bazickým hodnotám *Regionu I*. Lze předpokládat, že zásluhu na tom, kromě jiného, mají i účinné nástroje hospodářské politiky (regionální úrokové sazby či měnové kurzy); tento předpoklad je v dalším blíže diskutován.

### 3.1 Heterogenita v mírách inflace

Časové průběhy inflace spotřebitelských cen (HISP) ve sledovaných ekonomikách Eurozóny jsou znázorněny v levém grafu na Obr. 2, pravý graf pak znázorňuje totéž v ekonomikách tvořících referenční *Region I*. V obou grafech je vývoj inflace do jisté míry „homogenní“ v tom smyslu, že všechny ekonomiky (až na výjimky v některých letech) kopírují trend vývoje inflace/deflace ve stejném směru v reakci na makroekonomické šoky. Dalším společným rysem je pokles cenové hladiny o sto a více procent u většiny sledovaných ekonomik Eurozóny (výjimkou je ekonomika Rakouska, kde došlo jen k „mírnému“, tj. 50 % poklesu) v rámci sledovaného období deseti let. Zjevné rozdíly lze vysledovat v intenzitě změn inflačního a deflačního trendu v období světové finanční krize a následného oživení.

Figure 2: Vývoj inflace HISP vyjádřen indexem spotřebitelských cen HISP v (%)

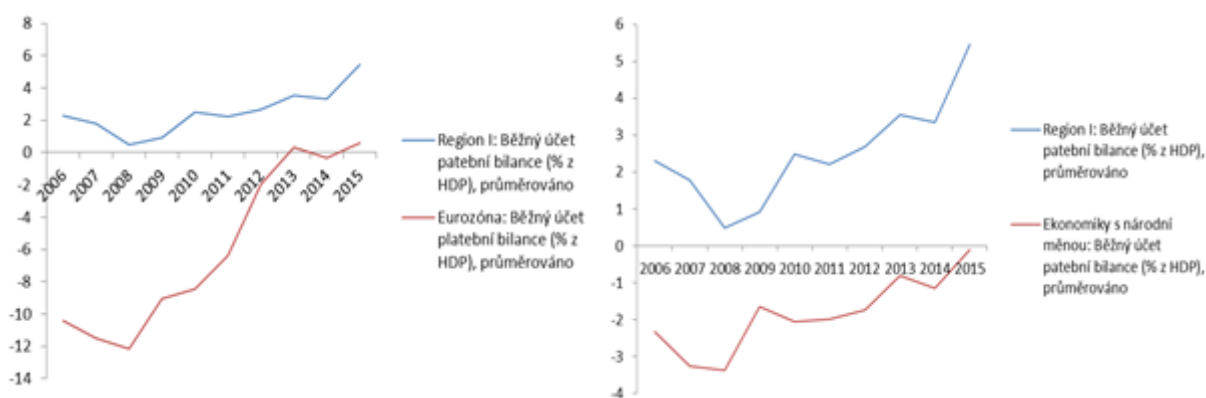


Source: Eurostat, 2016B a vlastní zpracování



Výrazné výkyvy v mírách inflace se v reálných ekonomikách promítají do odlišných reálných úrokových měr, jejichž důsledkem je, mimo jiné, heterogenita v saldech běžných účtů platební bilance. Nízké reálné úrokové sazby bývají původcem deficitních sald – zvyšují se domácí investice na úkor domácích úspor; vysoké reálné úrokové sazby mají na salda opačný efekt. To potvrzuje Tomšík v (2011), kde uvádí, že krátkodobé i dlouhodobé průměrné reálné úrokové sazby v letech 1999-2010 byly systematicky nižší v Řecku, Španělsku, Portugalsku a Irsku (zároveň se prohlubovala záporná salda jejich běžných účtů platební bilance), naopak tomu bylo v Německu, Belgii a Rakousku.

Figure 3: Časové průběhy relativních sald běžného účtu platební bilance v období 2006 – 2015 (horní křivka: referenční ekonomika Region I; křivka vlevo dole: ekonomika skupiny států Eurozóny (Řecko, Portugalsko, Španělsko) zastupujících země s nejvyšším záporným saldem běžného účtu v období 2007 – 2010; graf vpravo dole: ekonomika skupiny států s národními měnami specifikované v části 2 Metodika)



Source: OECD.stat, 2016 a vlastní zpracování

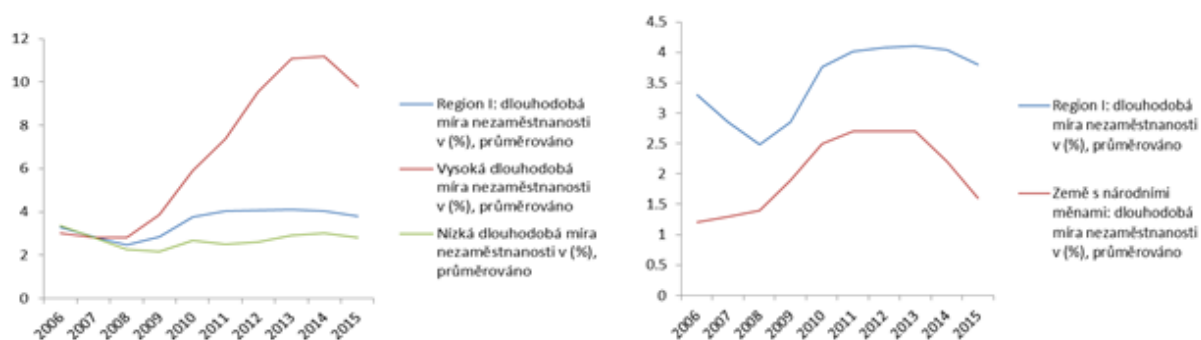
Relativní salda běžných účtů platební bilance vyjádřená v procentech z HDP jsou znázorněna v Obr. 3. V obou jeho grafech modré křivky znázorňují tentýž časový průběh salda referenční ekonomiky *Regionu I*, červené křivky časový průběh salda ekonomik Řecka, Portugalska a Španělska (levý graf) a salda ekonomik s národními měnami (pravý graf); průběhy relativních sald ekonomik těchto skupin států korespondují s výsledky analýz uvedených v (Tomšík, 2011).

Z Obr. 3 jsou patrné především dvě věci: značná vzájemná rozdílnost strmosti průběhů spodních křivek dvojice grafů, a téměř paralelní průběh obou křivek v pravém grafu. Jedna zde téměř kopíruje druhou, přičemž mezi sebou udržují rozestup od 2 do 5 procentních bodů. Naproti tomu v levém grafu rozestup křivek kolísá zhruba od 3 do 12,5 procentních bodů s maximy v letech 2007 – 2008. Svědčí to o tom, že ekonomiky s národními měnami se s nabídkovými a poptávkovými šoky vyrovnávají přibližně stejně jako ekonomiky *Regionu I*. Jedním z důvodů je možnost manipulace s měnovými kurzy, které zajistí potřebnou korekci reálných toků zboží a služeb v rámci mezinárodního obchodu a ovlivní tak objem peněžních toků vhodnými změnami regionálních úrokových sazeb (Birch, 2014). Naproti tomu státy, které tyto předpoklady nesplňují, mají tendenci realizovat hluboké saldo; to se v ekonomické realitě projevuje ztrátou konkurenceschopnosti a hospodářskou recesí. Za stěžejní příčinu lze označit uměle nadhodnocený měnový kurz (Grauwe & Ji, 2015; Grauwe, 2012).

### 3.2 Heterogenita v mírách dlouhodobé nezaměstnanosti

Diskuse výsledků předchozích oddílů naznačuje, že jednotná měna Euro znevýhodňuje některé ekonomiky vůči jiným, což z pohledu kritéria dlouhodobé míry nezaměstnanosti lze dedukovat z Obr. 4.

Figure 4: Vývoj dlouhodobé nezaměstnanosti 2006 – 2015 (vlevo Region I versus země s vysokou mírou dlouhodobé nezaměstnanosti (Řecko, Portugalsko, Španělsko, Itálie, Irsko), země s nízkou mírou dlouhodobé nezaměstnanosti (Rakousko, Německo, Slovenská republika), vpravo Region I versus země s národní měnou), průměrováno



Zdroj: Eurostat, 2016A a vlastní zpracování

Levý graf na Obr. 4 znázorňuje vývoj dlouhodobé míry nezaměstnanosti pro dvě skupiny ekonomik Eurozóny – skupina s vysokou a nízkou dlouhodobou nezaměstnaností a referenční ekonomika *Regionu I*. Zařazení euro-ekonomik do skupin je arbitrárním rozhodnutím, kde referenčním kritériem je maximálně dosažená míra dlouhodobé nezaměstnanosti 5,5 % pro zařazení do skupiny zemí s nízkou mírou nezaměstnanosti. Pravý graf porovnává tutéž míru mezi ekonomikou *Regionu I* a ekonomikami s národními měnami.

Vývoj průměrných měr nezaměstnanosti u ekonomik s národními měnami (viz pravý graf na Obr. 4) přibližně kopíruje vývoj měr *Regionu I* s tím, že dlouhodobá nezaměstnanost těchto ekonomik dosahuje nižších hodnot zhruba o 1 - 2 %. Mezi skupinami s vysokou a s nízkou mírou nezaměstnanosti je vzhledem k referenční ekonomice *Regionu I* vývoj průměrné nezaměstnanosti velmi rozdílný. V obou grafech na Obr. 4 lze identifikovat okamžik dopadu hospodářské recese způsobené světovou finanční krizí. Zatímco ekonomiky s národní měnou a skupina ekonomik s nízkou mírou nezaměstnanosti (Rakousko, Německo, Slovenská republika) vykazují podobný trend růstu a následného poklesu vzhledem k *Regionu I*, skupina států Eurozóny (Řecko, Portugalsko, Španělsko, Itálie, Irsko) je v důsledku nucené „vnitřní“ devalvace a/nebo restriktivních opatření sužována vysokou nezaměstnaností (Berger & Everaert, 2009).

### 4. Conclusion

Analýza konvergence ekonomik Eurozóny opřená o výsledky komparativní a regresní analýzy cyklické sladění/nesladění ukázala na významné rozdíly v odlišnosti ve fázi hospodářského cyklu, ve kterém se sledované ekonomiky (Itálie, Řecko, Španělsko, Rakousko, Portugalsko, Irsko, Německo a Slovenská republika) nacházejí vzhledem k referenční ekonomice *Regionu I* v důsledku působení různých makroekonomických šoků. Nejbližší ekonomice *Regionu I* jsou Německo, Rakousko, Slovensko a Itálie. Naopak, značná rozdílnost v cyklické pozici byla zjištěna v Řecku, Irsku, Španělsku a Portugalsku. Heterogenita

ekonomik z pohledu odlišného vývoje inflace, jejímž důsledkem je kumulace schodků či přebytků běžných účtů platebních bilancí, byla zkoumána prostřednictvím sald účtů platební bilance. Zatímco ekonomiky s národními měnami nemají tendenci odchylovat časový průběh stavu tohoto účtu od časového průběhu téhož v ekonomice *Regionu I*, některé ekonomiky Eurozóny, konkrétně Řecko, Portugalsko a Španělsko, zaznamenaly hluboký propad salda a jeho následné snižování nástroji „vnitřní“ devalvace. Důsledky restriktivních opatření se v těchto ekonomikách promítají do exponenciálního růstu dlouhodobé nezaměstnanosti, na rozdíl od ekonomiky *Regionu I* a ekonomik Německa, Rakouska a Slovenska. Příčin stojících za výrazně horšími výsledky jihoevropských států lze identifikovat několik (např. špatná rozpočtová politika), nicméně, za jednu z nejvýznamnějších je považována nadhodnocená měna Euro.

Ekonomiky s národními měnami vykazují ve všech sledovaných oblastech výrazně lepších, ve smyslu blízkých, výsledků výsledkům ekonomiky *Regionu I*. Lze proto usuzovat, že diferencované měnové politiky zemí nesvázaných společnou měnou dokáží čelit asymetrickým šokům a svými zásahy (např. manipulací měnových kurzů či změnami regionálních úrokových sazeb) takto vzniklé asymetrické mezery produkce potlačovat. Měnové unii však nezbývá než přihlížet tomu, jak její jednotná měnová politika v některých regionech působí zcela protichůdně a vzniklé problémy tam prohlubuje.

Na základě výsledků předložené analýzy lze tvrdit, že ze sledovaných ekonomik (Itálie, Řecko, Španělsko, Rakousko, Portugalsko, Irsko, Německo a Slovenská republika) úroveň referenční ekonomiky *Regionu I* dosahuje Německo, Rakousko, Slovensko.

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## THE GLOBALIZED WORLD AND MIGRANTS: IMPACTS ON HEALTHCARE MARKETS

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**Abstract.** The eminent impacts of migration we can also find in the healthcare sector. These topics such as globalization and healthcare markets are a frequently discussed theme both in terms of the history, the present, but also are subject to future discussions, given the economic and demographic forecasts, especially in Western countries. Globalisation and migration are not the new concepts, but it gives more and more into the context of many issues, both at the level economic and social needs. And considering to the development of globalization trends, it is expected that this concept is being discussed more and more often. For key manager of the global economy, including the World Trade Organization, the migration of workers forms an integral and beneficial component of globalization and the liberalization of the service sector. On the other hand the International Labour Office and the International Organization for Migration, whilst recognizing the benefits of managed migration. These negative effects of the migration in the healthcare markets include the consequences of a brain drain of highly skilled workers, the dislocation associated with migration and the gender consequences of these trends. The impacts of international migration are very complex both for health workers and for the countries involved. The paper defines the interaction between globalization and migration in the healthcare markets, analyses the impacts of the migration into healthcare sector in selected European countries and compares the results. There are used data from OECD, Eurostat Database, World Health Organization and statistical methods in this paper.

**Keywords:** globalization, migration, healthcare markets, impacts, brain drain

**JEL Classification:** C1, E6, F6, J6, I1

### 1. Introduction

Globalization is very important phenomenon in current constantly changing world. Globalization takes place across continents, time, cultural values, economics, political and social attitudes. An important impact of globalization is thus evident in human capital (Hejduková, 2015). This current wave of globalization named Donato & Massey (2016) like proceeded slowly at first, as the economies of Europe and Japan were rebuilt after the war; but the pace of change accelerated after 1970 when the digital revolution advanced to create a new, knowledge based economy. Although human migration is hardly new, undocumented, unauthorized, or in many causes also illegal what is in migration a recent concept.

As we suggested, very important role plays globalization in migration of human resources (very specific are human resources on healthcare markets) and by reason of this we have chosen for our paper just this topic: globalization and migration and their impacts on the healthcare markets. The impacts of international migration are very complex both for health workers and for the countries involved. There is defined the interaction between globalization and migration in the healthcare markets, analysed the impacts of the migration into healthcare sector in selected European countries and compared the results in the paper. This paper begins with a brief overview of the current view on globalized world and migration on healthcare markets. Then, the methodology and results of the empirical study are presented and discussed. At the end of the paper we mentioned some suggestions for future research.

## **2. Globalized world and migration on healthcare markets: existing perspectives**

Ongoing process of globalization offers a new challenges and opportunities for moving of human capital. The effects of globalization on the health sector are appreciable and globalization operates on the healthcare markets at several levels. The basic aspects of globalization on the health market may include: the creation and development of global healthcare markets, migration, pressures on balancing the level of healthcare (in particular, this can be seen in developed countries), deepening of economic differentiation and using of new technologies (Hejduková, 2015). The international migration lies at the core of the ongoing process of globalization. The reasons of migration can be different, the main of them are following: people want to improve their economic prospects, ensure a more secure living environment, re-unite with their family members, or avoid persecution in their country of origin (Kahanec & Zimmermann, 2008). Many research studies highlights the problems of migration of health personnel; see for example Dragoi (2015); Connell & Stilwell (2006); Eyal & Hurst (2008), Ahmad (2005) etc. but almost of these studies do not solve this problematic from econometrics perspectives. On the other hand all research studies which solve this very important problematic are beneficial, provide interesting insights and underscore fact that the health is the important factor of the economic growth, how mentioned for example Lucas (1988), Salai (1996) and as mentioned Hejduková (2009), it is important to recognize that the quality of health care is one of the key factors in the development of the country. Not only globalization have impacts on the migration of health personnel; the burgeoning aging population, and in high-income countries, growing demands and expectations for affordable, quality long-term care services, create abundant opportunity in this niche of the increasingly-globalized care labor market (OECD, 2005). Source countries, destination countries, and their health care settings require and are due such social change (Eckenwiler, 2014) it is not only question of migration and economy. So we can call the interaction between globalization and migration on the healthcare markets like very complex problem. Nair & Webster (2013) defined that the migration of health professionals has led to two types of discrepancies between health needs and healthcare workers and that migration made “brain drain”. The phenomenon “brain drain” is multi-directional and this term circulation appears to replace “brain drain”. For example many health professionals from Canada migrate to the USA and the vacancies left behind are filled by health professionals from India, Philippines, South Africa and other EMEs (Serour, 2009). But we want highlight the problem of migration of health professionals and also the problem of “brain drain” we can find also in European countries. Walton-Roberts (2015) has written that skilled health workers represent a resource that can be allocated through the

relative power of state immigration and private corporate attraction policies. This model of circulation, determined that very important role play public policies. Stilwell et al. (2004) have summarized that the migration of health-care workers is a feature of globalized labour markets and although knowledge about the itineraries of health-care workers who migrate is incomplete, it is thought that migration is influenced by many factors, some of which are amenable to strategic interventions. Prescott & Nichter (2014) mentioned that many research highlight the migration of doctors (in many causes the doctors are employed in similar job positions in comparison with “old” country), but not less important is the problem of migration at the level of nurses. There can be more problems: many nurses cannot pass exams for this job abroad, training is expensive, time-consuming. Nursing workforce policies are far from uniform across countries even with similar levels of development (Buchan et al., 2015). From reason of this some nurses migrate as domestic helpers or caregivers (Pratt, 1999) or at worst the nurses are leaved the health sector and are employed in low paying retail positions at the mall, food service in fast food chains. It is also necessary to note that the problem of migration on the healthcare markets has many general but also specific factors which are influenced the moving of healthcare professional. The key factors are different in economics, demography, work force, quality of health care, culture and social aspects and politics.

### 3. Methodology, research questions and data collection

The purpose of this study was to investigate and compare migration on healthcare markets in selected countries of Europe. Since the migration of doctors is still perceived as an important phenomenon in Europe, the descriptive (initial mapping of migration) and explanatory (clarifying differences in migration of doctors in different countries) research approaches have been chosen. This study provides an answer to the following central research question: What is migration on healthcare markets today? In addition to the central research question, the following specific research questions, based on the desk research results, were formulated: What countries in Europe have positive net migration? What is migration of foreign doctors in selected countries? How pull and push factor affect migration of doctors in Czech Republic? Based on the literature review and given the specific research questions, the following data-collection questions and three null hypotheses were formulated:

**Hypothesis A:** Net migration does not correlate with migration of doctors.

**Hypothesis B:** Pull factor do not affect migration of doctors in the Czech Republic.

**Hypothesis C:** Push factor do not affect migration of doctors in the Czech Republic.

The migration of health personnel is complex issue and there is a wide spectrum of potential uses of statistics. For purpose of this study were chosen following variables, their description and data source are in Table 1.

*Table 1: Variables and their description*

Variable	Description	Unit	Source
Net migration	The indicator is defined as the ratio of net migration (including statistical adjustment) during the year to the average population in that year.	Per 1 000 inhabitants	EUROSTAT
Foreign doctors	The number of doctors who have obtained their first medical qualification (degree) in another country and are entitled to practice in the receiving country.	% of total	OECD

Inflow	The number of doctors who have obtained their first medical qualification (degree) in another country and are receiving a new authorisation in a given year to practice in the receiving country.	The number of doctors	OECD
Outflow	The number of doctors who have obtained their first medical qualification (degree) in their country and are receiving a new authorisation in a given year to practice in the receiving country.	The number of doctors	OECD
Salary	Salaries as % of total public health expenditure.	%	WHO - HFA

Source: own based on Eurostat, OECD, WHO-HFA

## 4. Results and discussion

### Question No. 1: Which states in Europe have positive net migration?

To answer research question 1 were calculated basic statistics of net migration, the reference period is from 2000 to 2015 and the basic statistics are represented in Table 2. The results indicate that most countries have positive net migration in average. Only three of them have negative net migration: Estonia, Poland and Slovakia.

Table 2: Net migration and basic statistics

	Mean	Std. Dev.	Min	Max		Mean	Std. Dev.	Min	Max
AT	5.02	3.01	2.10	14.20	IT	4.63	4.66	0.50	19.70
BE	4.47	1.74	1.30	7.90	NL	1.31	1.62	-1.60	3.60
CZ	1.87	2.54	-2.70	7.70	NO	6.02	2.82	1.80	9.40
DK	2.92	1.67	0.90	7.40	PL	-0.36	0.25	-0.90	0.10
EE	-2.09	1.60	-4.00	3.00	SK	-0.20	1.13	-4.10	0.60
FR	1.67	1.15	0.30	3.20	SI	2.32	2.77	-0.30	9.20
DE	3.05	3.66	-0.70	14.10	SE	5.06	1.82	2.70	8.10
HU	1.38	0.46	0.30	2.10	UK	3.88	0.95	2.40	6.10
IE	4.41	9.59	-7.60	22.20					

Source: own based on Eurostat

### Question No. 2: What is migration of foreign doctors in selected countries?

Variables Foreign doctors and inflow were chosen for evaluations over time. The variables were used to compare and to describe developments of migration on healthcare market over time and across international borders in selected Europe countries. As a reference period for further analysis were selected years from 2008 to 2014, but unfortunately not all data were complete at national level, so we had to reduce some of examination periods and it may lead to difficulties with comparison within countries. Even for Slovakia there was no data for annual inflow. The two indexes were used for description of the development of variables over time: (i) relative change and (ii) the geometric mean, furthermore the graphical demonstration of the absolute trend was depicted (see Figure 1). The relative change expresses the absolute change as a percentage of the value of the indicator in the earlier period, the geometric mean is a measure of mean that indicates the typical value of a set of numbers (see more Arlt & Arltová, 2009). Based on calculated means of net migration it may be assumed that growth of variable foreign-doctors even variable inflow would be highest in countries with quite high net migration and vice versa. The results showed that the highest growth of ratio of Foreign doctors was in Estonia between 2008 and 2014. It seems thus that there is not positive correlation between net



migration and growth of ratio of foreign doctors in selected countries. In the most of selected countries was the growth less than 15 %, there are 6 countries with declining values of this ration. The highest decline was in the Czech Republic, it declined by 5.78 %. The supreme ratio was in Norway and reached almost 37.3 %, in Estonia it was only 2.64 %. The differences in absolute value could be seen in mini-graphs in Figure 1. For annual inflow of foreign doctors we should expect positive value if the growth of ratio is positive as well. This expectation was tested within Hypothesis A. Again, we can see that the biggest growth was in Estonia. The absolute value was highest in the UK and the lowest was one in Estonia.

Figure 1: Foreign-trained doctors and flows in selected countries

	% of foreign-trained doctors				Foreign-trained doctors - Annual inflow		
	Relative change	Growth	Trend		Relative change	Growth	Trend
Austria 2008-2014	31.35%	↗ 6.00%		Austria 2008-2014	48.59%	↗ 2.06%	
Belgium 2008-2014	67.83%	↗ 9.54%		Belgium 2008-2014	21.57%	↗ 4.21%	
Czech Republic 2008-2014	-35.08%	↘ -5.78%		Czech Republic 2008-2014	179.75%	↗ 7.52%	
Denmark 2008-2013	-14.02%	↘ -2.44%		Denmark 2008-2014	-9.87%	↘ -1.74%	
Estonia 2008-2014	165.03%	↑ 19.95%		Estonia 2008-2014	40.00%	↗ 11.18%	
France 2008-2014	46.34%	↗ 6.52%		France 2011-2014	9.76%	↗ 3.15%	
Germany 2008-2014	66.29%	↗ 8.56%		Germany 2008-2014	85.22%	↗ 10.08%	
Hungary 2008-2014	-1.82%	↘ -0.24%		Hungary 2008-2014	49.09%	↘ -4.11%	
Ireland 2011-2014	1.15%	↗ 0.38%		Ireland 2010-2014	27.53%	↗ 6.27%	
Italy 2008-2014	17.08%	↗ 2.82%		Italy 2008-2014	-52.38%	↘ -8.99%	
Netherlands 2008-2013	-11.29%	↘ -1.08%		Netherlands 2008-2013	-43.37%	↘ -7.60%	
Norway 2008-2014	15.38%	↗ 2.41%		Norway 2008-2014	10.60%	↗ 1.02%	
Poland 2008-2012	-16.70%	↘ -4.46%		Poland 2008-2012	21.54%	↗ 3.66%	
Slovakia 2008-2011	NA	NA		Slovakia none	NA	NA	
Slovenia 2010-2014	32.97%	↗ 7.38%		Slovenia 2008-2014	-3.33%	↗ 5.45%	
Sweden 2008-2013	19.81%	↗ 4.09%		Sweden 2008-2013	-1.82%	↗ 0.94%	
United Kingdom 2008-2014	-5.44%	↘ -0.93%		United Kingdom 2008-2014	18.26%	↗ 2.33%	
Legend	(-∞;-0.15>    ↓ (-0.15;0>    ↘			(0;0.15>    ↗ (0.15;∞>    ↑			

Source: own based on OECD

**Hypothesis A:** Net migration does not correlate with migration of doctors.

For verify this hypothesis we tested if there is linear dependence between variables net migration, foreign doctors and inflow. Pearson correlation coefficient indicates negative linear dependence, but the value is quite small moreover at the 5% significance level we are not able to reject null hypothesis. Therefore, we conclude that net migration does not correlate with migration of foreign doctors.

Table 3: Correlation matrix of variables: Net migration, Foreign doctors, Inflow

	Net migration	Foreign doctors	Inflow
Net migration	1		
Foreign doctors	-0.176	1	
	0.515		
Inflow	-0.262	0.441	1
	0.328	0.087	

Source: own based on Eurostat, OECD

**Question No. 3:** How pull and push factor affect migration of doctors in Czech Republic?

The problem with incomplete data was one of the reasons why we reduce our examination of pull and push factors only on Czech Republic. The period for testing hypothesis B and C contains years from 2000 to 2009 and we used variables salary, inflow and outflow. Most doctors coming from Slovakia and the Ukraine, probably because of the relative ease overcoming the language barriers. The largest number of Czech doctors frequently migrates to the United Kingdom, Germany, and then with a slight gap to the Nordic countries: Norway, Ireland and Sweden.

**Hypothesis B:** Pull factor do not affect migration of doctors in the Czech Republic.

**Hypothesis C:** Push factor do not affect migration of doctors in the Czech Republic.

We assume that the variable Salary in the Czech Republic may act as push factor for the outflow of the Czech doctors and also as a pull factor for foreign doctors. So, to test hypotheses B and C was calculated Pearson's correlation coefficient, which allows observe linear relationship between two variables. The results with the calculated P-value are shown in the correlation matrix in Table 4.

Table 4: Salary as pull or push factor for doctors flow in the Czech Republic

	salary	inflow			salary	outflow
salary	1			salary	1	
inflow	0.151	1		outflow	0.759	1
	0.678				0.011	

Source: own based on OECD, WHO - HFA

According results, it is clear that at the 5% significance level we are not able to reject both null hypothesis B and C. Thus we are able to claim according these data that the salary in the Czech Republic did not affect inflow and outflow of doctors in the Czech Republic.

## 5. Conclusion

Globalization plays important role on healthcare markets and we can observe significant migration flows of health professionals in current world. Impacts of globalization on healthcare

markets we can see primary in following aspects: the creation and development of global healthcare markets, migration, pressures on balancing the level of health care, deepening of economic differentiation and using of new technologies etc.

The role of migration on the healthcare markets is growing in major over time. Therefore the aim of this paper was to investigate and compare migration on healthcare markets in selected countries of Europe. Three hypotheses were formulated in this study. They allowed us to conclude that net migration does not correlate with migration of foreign doctors and the salary in Czech Republic did not affect inflow and outflow of doctors in Czech Republic. This results based on macroeconomics data about healthcare staff is inconsistent with many facts which are presented by professional public in the health service.

The results of our study show interesting information about healthcare migration and push and pull factors. There are many theoretical studies but without sufficient statistical and empirical bases in this field. This fact provides us wide range of possible extension of this study.

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## ASPECTS OF GLOBAL COMMUNICATION IN POST MODERN SOCIETY

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**Abstract.** The fact that communication is significantly changing in the connection with the contemporary development of information technologies refers especially to the forms of information passing and conveying. This situation overcomes distances and borders among countries, regions and continents and it represents the basic prerequisite of global communication. Information, knowledge and skills became the source of the economic growth and information is accessible in the postmodern society nearly to all people. The development of new interactive media caused the situation in which not only the receipt of information from unlimited number of participants but simultaneously sending them to this number of people are enabled. We are witnesses predominantly of a rapid internet development and its different interactions which are implemented on the ever growing higher technological and cybernetic level and quality. E.g., corporate companies are able to utilize opportunities with the assistance of global communication and through regional world markets with the lightning speed reaction of business partners from different cultures. Globalization trends brought not only a series of negative phenomena (e.g. environmental threats, the increase of migration) but they have also positive contributions (e.g. technological development, innovation). All these processes are connected with the growing media influence, especially those that are at the latest time acting in the internet digital environment. All mentioned facts form the inhabitants needs and values from the economic point of view that are moving in the environment of super production (more products are made than there is the social consumption and it represents higher profits from enterprises) and super consumption (more products are consumed than is the total social and individual consumption what represents the higher utilization of non-renewable sources and wastes). The essay is oriented to changes and aspects of global communication in the relationship to values preferences in the postmodern society.

**Key words:** social innovations, values, communication, globalism, postmodern society

**JEL Classification:** R23, J19, O35

### 1. Introduction

Česká republika v současné době prochází poměrně složitou transformací, kdy ze značně izolované a monokulturní společnosti se stává společností otevřenou a pluralitní. Je to dáno tím, že se v 2. pol. 90. let minulého století Česká republika otevřela zahraničním ekonomickým subjektům a do republiky přišly nové zvyky a uzance zahraničních investorů. Tím naše společnost začala stále častěji přicházet do kontaktu s příslušníky odlišných kultur a je postavena před úkolem nalézt fungující formy komunikace přispívající ke vzájemné toleranci.

Tato komunikace se v současném období neustále rozvíjí a to jak na úrovni verbální či neverbální, tak mediální. S těmito procesy souvisí i rostoucí význam interkulturní komunikace, která představuje v konvenčním i v digitálním prostředí podstatu celosvětové (globální) komunikace. Právě s rostoucími globalizačními procesy světové populace je komunikace důležitým prostředkem stability post moderní společnosti, která je charakteristická konzumním způsobem života, daná významným působením otevřené společnosti a trendem globalizace. Může nastolit i odstranit příčiny vzniků komunikačních šumů, které se mohou rozrůst i do konfliktní podoby. Trend globalizace (svět bez hranic) skutečně významně souvisí s konzumní společností. Nelze jednoduše hodnotit globální přístupy pouze pozitivně či jenom negativně. Globální trendy mají jak pozitivní přínosy, např. rozvoj technologií, digitální komunikace, inovace výrobků a služeb, tak negativní dopady na společnost, např. ztráta sociální identity, ekologické hrozby, nárůst migrace, turbulentní jevy, produkce rizik. Všechny tyto procesy jsou spojovány s rostoucím vlivem médií, zejména těch nejnovějších pracujících v digitálním prostředí. To samozřejmě formuje potřeby a hodnoty obyvatelstva, které se pohybují v prostředí nadprodukce (vyrábí se více výrobků než je celková společenská potřeba a představuje vyšší zisky pro podniky) a nadspotřeby (spotřebuje se více výrobků než je celková společenská i individuální potřeba a kupní síla obyvatel a představuje vyšší čerpání neobnovitelných zdrojů a plýtvání). Z hlediska utváření a formování hodnot obyvatel představuje toto prostředí jednak pozitivní dopad na obyvatelstvo tím, že mu nabízí široký výběr jakéhokoliv zboží a v jakémkoliv objemu a na druhé straně přináší negativní efekty v podobě růstu zadluženosti obyvatel, prioritu vydělávání peněz, frustraci obyvatel, rozšíření konzumace škodlivých látek (cigarety, alkohol, drogy). V hodnotových preferencích se objevuje priorita vydělávání peněz jako determinant vyššího sociálního statusu a na druhé straně se vzdalují tradiční hodnotové preference, mezi které patří: vytváření rodiny, přátelských vztahů, respektování morálky. Začínají převládat zejména ve velkých aglomeracích lidské vlastnosti jako: sobectví, bezohlednost a lhostejnost, lidé žijí v nadměrném spěchu, stresu, jsou zaslepeny hromaděním bohatství po vzoru mediálních obrazů bohatých a populárních osob. Těžko lze hodnotit celou charakteristiku současné konzumní společnosti jako apokalypsu tradičních hodnot. Jisté je, že současná generace neprožila žádný negativní turbulentní jev, který by měl dopady na všechny, bez rozdílu. Generace, které prožily světové války nebo totalitní politiky, (současná generace si pamatuje druhou světovou válku, nacismus, socialismus), patří mezi ty, které současnou formu vývoje společnosti těžko chápou. Ony byly zasaženy nedostatkem základních potravin, neustálým strachem o vlastní bezpečnost, byla znemožněna svoboda projevu a vlastní osobní růst, vše probíhalo pod silnou mentální i emoční kontrolou, což způsobovalo stagnaci ve vývoji jak společnosti, tak jedinců. Současná generace do 25 let již přímo vyrůstá v konzumním způsobu života post-moderní společnosti, který je charakteristický zlepšováním kvality života, nadprodukcí spotřebního zboží a intenzivním působením marketingových a komunikačních nástrojů. S tím je možné pozorovat různé aspekty, které v globální komunikaci tvoří páteř komunikačních schopností a dovedností a představují charakteristické znaky komunikace současné post-moderní společnosti.

## 2. Materiál a metodika

Hlavní metody, které byly využity při zpracování uvedeného tématu, byly strukturovaná analýza a jednoduchá deskripce faktů, dále metody syntézy, logické a dedukční postupy s cílem identifikovat a formulovat aspekty globální komunikaci, které formují vztahy mezi různými kulturami v post-moderní otevřené společnosti. Téma je uspořádáno podle logiky faktů a

dedukce výsledků z analýz odborných vědeckých textů do zcela jedinečného významového celku, který formuluje základní aspekty současné komunikace v globálním prostředí.

### 3. Výsledky a diskuse

Současná otevřená společnost je charakteristická rozvojem globálních procesů a propojováním národních ekonomik. V historii jedním z nejvlivnějších evropských odborných autorů - filosofů, který otevřenou společnost charakterizoval, byl Karl Raimund Popper (nar. 1902) a který ve své knize „Otevřená společnost a její nepřátelé“ rozlišuje společnost na uzavřenou a otevřenou (Popper, 1902). Uzavřená společnost je charakteristická tím, že je společností kmenovou, založenou na nejružnějších tabu. Otevřená společnost je typická svým individualismem, poskytující více prostoru rozumu oproti emocím. Myšlenka otevřené společnosti se objevila již u Hérakleita a Platóna. Popper právě Platóna silně kritizuje v nesprávné vývojové interpretaci v otázce vládnutí. Platón se vyznačoval tím, že neměl rád radikální politickou změnu a ve svých dílech ustanovuje kastovní systém tří tříd, který Popper označuje jako panskou rasu. Dává dílům Platóna znak utopického sociálního inženýrství a sám ve svých dílech otevřenou společnost charakterizuje pomocí znaků, které vyčítá Platónovi. Nelze tedy hodnotit jeho dílo jako reformistické vůči dílům Platóna, ale je v nich obsažena hluboká analýza otevřené společnosti s faktory ovlivňujícími další její celospolečenský vývoj. Faktory, kterými se dnes otevřená společnost projevuje, vycházejí z mohutného industriálního rozvoje, kdy pomocí vědeckých objevů a technologického rozvoje, se společnost zabývá více mentální sférou než sférou produkční. Období je označováno jako období post-moderní společnosti. Přejít od tradiční, moderní společnosti k post-moderní společnosti měl svůj historický základ a vývoj. Podle sociologických modernizačních teorií se po roce 1945 rozlišují dvě vlny modernizace, které se týkaly změn v rámci celého světa. První vlna modernizace se časově vztahuje k období po druhé světové válce, kdy byl svět ostře rozdělený na kapitalistický a socialistický a mezi kterými panovaly napjaté vztahy označované jako „studená válka“. Charakteristickými rysy této vlny byly nástup a rozvoj informačních technologií a zdokonalování řízení výrobních procesů ve společnosti. Vznikaly velké korporace, rostl význam vědy a výzkumu, hovořilo se o vědecko technické revoluci. V sociální oblasti rostl význam a početnost střední vrstvy obyvatel. Ekonomická prosperita vytvořila podmínky pro vznik sociálního státu s rostoucím významem vzdělání. Druhá vlna poválečné modernizace společnosti je situována do období konce 20. století a zahrnuje rozpad socialistického systému (Zich, Anýžová, 2016). Zásadní změny nastávají v oblasti průmyslu, kdy zeštíhlují velké korporace, objevuje se redukce sociálního státu, privatizují se některé sociální služby a obnovuje se rozvoj v sociální oblasti. (Keller, 2007) V ekonomické oblasti se dále předpokládá ekonomický růst a stoupající blahobyt, postupuje deregulace trhu. Vše je spojeno s rozvojem osobní svobody v duchu liberálně demokratických idejí, včetně růstu požadavků na odpovědnost každého sama za sebe. V důsledku neustálé racionalizace a technologických změn v oblasti výroby však ubývá práce a roste nezaměstnanost s tím, že rozvoj médií přináší nové uspořádání prostoru a času a významně stále proměňuje moderní svět a společnost, ve které lze nalézt a formulovat určité aspekty, které se stávají klíčovými pro komunikaci v současné post-moderní společnosti. V historických souvislostech lze objevit komunikační prostředky, které se staly podstatnými milníky utváření současných globálních komunikačních sítí. Předpoklady, které se musely naplnit, aby globální komunikační síť vůbec vznikly, se objevily již v 2. polovině 19. století a na začátku 20. století. Patřily sem především:

- Budování a rozvoj podmořských kabelových systémů podporované imperiálními mocnostmi v Evropě.
- Vznik mezinárodních zpravodajských agentur.
- Vznik mezinárodních organizací, které přidělovaly kmitočty elektromagnetických vln.

Tím se začaly komunikační sítě systematicky organizovat v celosvětovém měřítku. V první fázi sloužily především komerčním a průmyslovým účelům, v dalším technologickém rozvoji se staly důležitým prostředkem předávání důležitých sdělení. Nicméně lze říci, že právě celý proces rozvoje technologií schopných přenášet sdělení pomocí elektromagnetických vln spolu s nástupem mezinárodních zpravodajských agentur a organizací, které měly v kompetenci přidělovat kmitočty elektromagnetických vln, představoval rozhodující krok pro globalizaci komunikace. (Warden et al., 2002). Dalšími významnými kroky ve 20. století se stalo využívání satelitů pro potřeby komunikace na velké vzdálenosti (systémem DBS – direct broadcasting by satellite) a v současné době digitalizace zpracování, ukládání a opětovné vyhledávání informací, která je propojena s rozvojem IT technologiemi, především s rozvojem mikroprocesorů. To vše vytvořilo skutečnost, že mediální produkty obíhají stále více na mezinárodní úrovni. Jak se tento stále pokračující vývoj projevuje v současné moderní společnosti, jak ovlivňuje hodnotovou strukturu společnosti, co přináší digitalizace komunikace současné i budoucí generaci a jaké lze očekávat další vývoj komunikace?

Na tyto otázky lze odpovědět formulací aspektů, které jsou klíčové pro naši současnou společnost.

### **3.1 Aspekt globální komunikace společnosti – změna hodnotových struktur**

Z hlediska utváření a formování hodnot obyvatel představuje prostředí post-moderní společnosti jednak pozitivní dopad na obyvatelstvo tím, že mu nabízí široký výběr jakéhokoli zboží a v jakémkoliv objemu a na druhé straně přináší negativní efekty v podobě růstu zadluženosti obyvatel, priority vydělávání peněz, frustraci obyvatel, rozšíření konzumace škodlivých látek (cigarety, alkohol, drogy). V hodnotových preferencích se objevuje priorita vydělávání peněz jako determinant vyššího sociálního statusu a na druhé straně se vzdalují tradiční hodnotové preference, mezi které patří: vytváření rodiny, přátelských vztahů, respektování morálky. Začínají převládat zejména ve velkých aglomeracích lidské vlastnosti jako: sobectví, bezohlednost a lhostejnost, lidé žijí v nadměrném spěchu, stresu, jsou zaslepeny hromaděním bohatství po vzoru mediálních obrazů bohatých a populárních osob. Těžko lze hodnotit celou charakteristiku současné konzumní společnosti jako apokalypsu tradičních hodnot. Jisté je, že současná generace neprožila žádný negativní turbulentní jev, který by měl dopady na všechny, bez rozdílu. Generace, které prožily světové války nebo totalitní politiky, (současná si pamatuje druhou světovou válku, nacismus, socialismus), patří mezi ty, které současnou formu vývoje společnosti těžko pochopí. Ony byly zasaženy nedostatkem základních potravin, neustálým strachem o vlastní bezpečnost, byla znemožněna svoboda projevu a vlastní osobní růst, vše probíhalo pod silnou mentální i emoční kontrolou, což způsobovalo stagnaci ve vývoji jak společnosti, tak jedinců. Současná generace do 25 let již přímo vyrůstá v konzumním způsobu života post-moderní společnosti, který je charakteristický zlepšováním kvality života, nadprodukcí spotřebního zboží a intenzivním působením marketingových a komunikačních nástrojů. (Wright & Narrow, 2001).

Mezi základní tendence této současné společnosti lze zařadit:

- Fundamentální transformace v dopravě a komunikaci.



- Nové technologie přinášející nové rysy ve výrobě (plná automatizace bez potřeby lidské síly) a ve spotřebě.
- Masový konzum přináší zvýraznění sociálního a ekonomického statusu, životního stylu a osobní identity.
- Velký výběr individuálních stylů. (Danaher & Rossiter, 2011).

Příkladem post-moderního současného vzorce života mohou posloužit následující fungující faktory:

- Životní styl
- Práce, zaměstnání.
- Nakupování.
- Turistika.
- Elektronické a komunikační sítě.
- Zábava.
- Růst nových sociálních nerovností. (Petersen et al., 2015).

Konzumní trend je ale neudržitelný. Velkým problémem se stávají ekologické hrozby v podobě hromadění odpadů, špatné hospodaření až plýtvání se základními důležitými životními zdroji jako je voda, přírodní suroviny, znečištění ovzduší a celkově přírody. Pozitivní trendy lze vyzorovat ve státních strategiích do budoucího období. Téměř ve všech státních projektech je zdůrazněn trvale udržitelný rozvoj pro zachování kvalitního života budoucích generací. Zdůrazňují rozvoj etických hodnot v souladu s kulturními tradicemi, zpřístupnění kultury všem lidem. (Rosenbloom & Larsen, 2003).

### 3.2 Aspekt globální komunikace společnosti- digitální prostředí komunikace

S nástupem nových médií se začíná velmi progresivně prosazovat mladé marketingové odvětví – digitální marketingová komunikace. (Cheung, 2010). Je součástí marketingové komunikace a ke komunikaci využívá digitální technologie, kterými jsou vybavena nová média. Principem komunikace je výměna názorů a postojů, tj. dialog mezi vysílajícím subjektem a přijímacím subjektem. Podstatou této komunikace je zvýšit vliv na zákazníka a zvýšit jeho pozornost tím, že se očekává od něho zpětná vazba. Využívají se k tomu především pohyb, změny, akce, zvuky a od., které dokážou vyprovokovat smyslové reakce zákazníků (Janouch, 2010).

Mezi výhody tohoto přístupu patří:

- Cílení a individualizace – prostřednictvím obousměrné komunikace se dokážou pochopit individuální potřeby a preference zákazníků.
- Monitorování a měření – výhodou dialogového systému je měřitelnost mnoha ukazatelů, které probíhají v reálném čase. Mezi základní měřitelné ukazatele patří např. počty návštěvníků na stránkách, reálné kliky na reklamu a nákupy, ale i získávání názorů a postřehů ze sociálních sítí.
- Zpětná vazba zákazníků – oproti analogovému systému masmediálního jednostranného působení, je digitální marketing obousměrnou komunikací mezi obchodníkem a zákazníkem, kdy si zákazník může vyžádat další podrobnější informace o výrobku a v případě nespokojenosti to sdělit obchodníkovi i okolí, což je pro firmy velmi nebezpečné. Proto došlo ze strany obchodníků i výrobců k většímu důrazu na kvalitu a služby.

- Komplexnost – internetové prostředí nabízí širokou škálu použitelných metod a nástrojů, které lze využít k oslovení zákazníků.
- Efektivita – v oblasti podpory prodeje nabízí digitální marketing v porovnání s ostatními druhy reklamy levnější možnost propagace či podpory prodeje.
- Dostupnost – internet funguje 24 hodin denně po celý rok i v noci a o svátcích.
- Globální dopad – je možné prostřednictvím těchto technologií oslovit kohokoliv s přístupem na internet, kdekoli na světě. (Evans, McKee, 2010).

Mezi nevýhody digitálního marketingu a komunikace patří:

- Důvěryhodnost – velký počet podvodů na internetu není dobrým hodnocením při používání tohoto média. Nejčastěji se jedná o fiktivní prodeje výrobků nebo služeb či nárůst kriminality na sociálních sítích.
- Všichni nejsou online – v r. 2011 využíval internet 6,5 milionů populace, nyní je číslo vyšší kolem 8 milionů.
- Menší využitelnost pro lokální firmy – globální dopad může způsobit nevýhody v konkurenci pro malé lokální firmy. (Jensen, 2008).

### 3.3 Aspekt globální komunikace společnosti - změny v projevu komunikace

Změny, které se nejvíce projevily v kulturním a komunikačním prostředí současné celosvětové společnosti, jsou inspirovány čínskými ekonomickými úspěchy a mohou posloužit jako celosvětové (globální) charakteristické rysy v komunikaci v současné společnosti. (Bush et al., 1998). Jsou rozděleny na osm komunikačních oblastí:

1. *Posun od národních států k sítím.* Čína i ostatní země se zapojily do mezinárodní soustavy ekonomických a informačních systémů a začínají v nich nabírat vůdčí postavení.
2. *Posílení exportní orientace a výrazný posun ke spotřebitelům.* Tradiční zvyklosti kolektivismu se posilují o prvky individuálních spotřebitelských motivů s cílem více ovlivnit myšlení spotřebitelů a více je zapojit do marketingových komunikačních aktivit, zejména prostřednictvím nebránění rostoucímu vlivu digitálního prostředí na mladou generaci (sociální sítě), přesto stále silně monitorovaného státními orgány.
3. *Vytvoření podmínek pro implementaci asijské cesty na západní trhy.* Zde je zřejmá velká ctizádobnost asijských podnikatelských skupin ovládnout určitá průmyslová či zpracovatelská odvětví na Západě (automobilový – Jižní Korea, Japonsko, textilní, výroba hraček, finančníctví – Čína).
4. *Podpora tržní ekonomiky s kontrolním mechanismem státu.* V této oblasti se v Číně projevuje nebývalý posun v podpoře tržní a podnikatelské sféry, která se stává motorem rychlého hospodářského růstu Číny.
5. *Od vesnic k super městům.* V Číně stále existují značné rozdíly v životní úrovni obyvatel mezi jejími jednotlivými oblastmi. Bohaté východní a jižní oblasti Číny stále silně kontrastují s chudými oblastmi na severu a na západě země. Vytvoření soustavy projektů pro minimalizaci této disparity jsou stále v minoritě oproti těm, které zajišťují Číně ekonomickou prosperitu a její majoritní celosvětové postavení. Proto vytvářejí svobodná celní pásma, umožňují kapitálový vstup nadnárodních západních korporací do Číny, čínské organizace a instituty vstupují do celosvětových finančních kruhů. V Číně vyrůstají super města s životní úrovní, dnes již rovnající se západním moderním velkoměstům.

6. *Podpora progresivních technologií, ústup od pracovně náročných oborů.* Čína se chce v celosvětové hospodářské hyperkonkurenci vyrovnat kvalitou světovým značkám. Investuje proto značné finanční částky do nejmodernějších technologií a tím se v současné době zmírnil i její hospodářská růst (z 11 % na 7 % růstu HDP v roce 2014-2015).
7. *Posun od mužské nadvlády k nástupu žen.* I Čína si uvědomuje důležitou roli a postavení žen v podnikatelském a v řídicím prostředí globální společnosti. Přes určitý posun k této problematice je Čína stále „svá“. Kompromisy, které Čína vytváří se západní kulturou, je kompenzována i jejím vlivem a implementací jejích kulturních odkazů do kultury západní. Zdá se, že tento vliv je významně silnější než trend opačný (Nový, Schroll-Machl, 2005).

Uvedené komunikační oblasti představují nové výzvy a příležitosti pro západní kulturu, jak zvýšit a ozdravit svoje stagnující kulturní i mentální oblasti. Proto spolupráce s východními kulturami (nejen s Čínou) je pro západní kulturu nezbytností. Tento významný úkol by se měl stát součástí interkulturní komunikace západní společnosti. (Mohr & Nevin, 1990).

### 3.4 Aspekt globální komunikace společnosti – následky digitální komunikace

Internet a nová digitální média představují v současné post-moderní společnosti klíčové prostředí pro komunikaci. Téměř žádné odvětví se bez nich neobejde, staly se součástí našeho životního stylu a projevu. Jejich vliv na mentální sféru lidí je ale varovný. (Thomas & Sullivan, 2010). V oblasti neurobiologie se používání chytrých médií projevuje v určitých změnách chování a myšlení lidí. Vnímání, myšlení, prožívání, cítění a jednání zanechávají v mozku paměťové stopy, které se dnes dokážou vyfotografovat či nafilmovat. Tyto synapse s elektrickými signály mezi nervovými buňkami se začínají od přelomu tisíciletí (kdy byly poprvé zobrazeny) měnit. Lidský mozek se rozvíjí neustálým učením. Ovšem čas strávený s digitálními médii je pro mozek obdobím stagnujícím. (Prins & Verhoef, 2007). Za dlouhou dobu evoluce se mozek stále něčemu přizpůsoboval, z čehož vznikaly civilizační choroby, které jsou v současné době četnější. Duševní a mentální sféra společnosti se determinuje a začínají se projevovat rozdílnými mechanismy a procesy, které postihují kognitivní výkony člověka, jako např. pozornost, rozvoj řeči nebo inteligence. Je jisté, že média podstatně ovlivňují emocionální a sociálně-psychické procesy, včetně morálně etických postojů i osobní identitu. Dokonce se o tomto jevu hovoří jako o digitální demenci. Digitální demence se vytváří tím, že mozek se nerovnoměrně vyvíjí. Současná mladá generace se neučí, ale pracuje s již vytvořenými informacemi, které nemusejí být ani ověřené a pravdivé. Vnímání je zúženo na informaci a předáno dále, aniž by utkvělo v paměti (Spitzer, 2014). Demence ale není pouze zapomnětlivost, přestože je jasně prokázané už od r. 2007, že mladí lidé jsou zapomnětlivější (Studie korejských vědců), ale jedná se o komplex předpokladů pro mentální úpadek člověka. Prokázalo se, že výkony žáků ve čtení a počítání je výrazně horší u těch, kteří počítač využívají několikrát týdně (Cacioppo J.T. et al., 2009). Například, pokud se pokladní výrazně splete ve sčítání nebo že bankéř se přepočítá o 55 miliard eur, může to znamenat, že dotyční nemyslí současně s technikou. Místo, aby se uvedení spoléhali na vlastní rozum, spolehli se na digitální pomocníky. Oponenti tohoto tvrzení mohou oprávněně namítnout, že řídicí centra například ve zdravotnictví, v dopravě jsou mnohem spolehlivější než člověk. (Cho & Khang, 2006). V podstatě se však jedná pouze o bezchybný programový mechanismus, který vytvořil člověk a který pracuje za něj. Potvrzuje se zde to, že digitalizace komerční sféry je příčinou nutné transformace zaměstnanosti v moderní společnosti. Lidé jsou nahrazováni samo řídicími (automatickými, robotickými) technologiemi. Podobnosti s komerčním pronikáním a jeho

rozvojem počítačů do oblasti vzdělávání jsou zarážející. Počítače se staly stejně nutné jako jízdní kolo k plavání nebo rentgenový přístroj ke zkoušení bot (Spitzer, 2012).

Lze konstatovat, že systém vzdělávání se podřizuje externím faktorům konzumní společnosti a stává se značně povrchní záležitostí, která vede k rozpolcenosti a k rozdílnosti úrovně vědomostí absolventů vzdělávacích institucí. (Schroeder & Borgerson, 2005). Důkazem tohoto tvrzení je, že řada soudobých reforem vzdělávacího systému evropských zemí vede k nehodnotným formám vědění, založených pouze na povrchních a krátkodobě upotřebitelných kompetencích zcela odcizených tradičním idejím vzdělanosti (Roubal, 2013). Z tohoto tvrzení je možné usoudit, že vzdělávací systémy stále více pracují s technikou místo toho, aby rozvíjely myšlení. Používání počítačů v raném dětství může vést k poruchám pozornosti (Christakis et al, 2004) a v předškolním věku pak k poruchám čtení (Ennemoser, Schneider, 2007).

Počítače zpracovávají informace, stejně jako učící se lidé. Z toho se mylně vyvozuje, že počítače jsou ideálními učebními pomůckami. Učení předpokládá samostatnou duševní práci: čím více a především čím hlouběji nějaký věcný obsah duševně zpracováváme, tím lépe si jej osvojíme. Moderní technika přináší ve škole povrchnost myšlení, rozptyluje pozornost a má navíc různé nežádoucí účinky (dětská pornografie, násilí) (Spitzer, 2012).

#### 4. Conclusion

Post-moderní společnosti se neustále vyvíjí a to čím dál tím rychleji. Dochází k významným posunům v hodnotových preferencích u různých kultur, které jsou v současném globálním prostředí stále preferovanější jejími nositeli a zástupci. Shrňme-li vše, co bylo o hodnotách a hodnotových preferencích a orientacích uvedeno, je jisté, že se i česká populace bude v těchto oblastech vyvíjet. Budou se měnit váhy a skladby životních hodnot v souvislosti s rozvojem nadnárodního korporátního ekonomického systému založeného na síťovém uspořádání ekonomiky s „oligarchistickým“ vlastnictvím majetku a kapitálu. Společnost bude obtížněji souměřitelná, bude plná vlivných racionálních úsudků a výroků podporovaných informačními technologiemi, médii a virtuálním vzděláváním. Lze očekávat, že tradiční hodnotový rámec se promění ve prospěch volnočasových aktivit a zábavy, dále bude narůstat i váha přátel a známých, naopak poklesne hodnotová preference práce, politiky a náboženství. Zde se spíše bude vyhledávat spirituální svět, ve kterém se mohou projevit individualistické zájmy jeho zastánců. Hodnotové orientace budou více vycházet z hédonismu, kde bude převažovat příjemnost života nad skromností a altruismem. Rovněž lze očekávat, že rovnostářské hodnotové orientace převáží nad nerovnostářskými a většina populace v České republice bude dávat přednost ke snižování sociálních diferencí, pokud se tato orientace nesetká s ego individualismem. Potom by mohlo dojít k partikularitě osobních zájmů v návaznosti na koncentraci moci malého počtu osob, což by ve svém důsledku mohlo znamenat konec úlohy a role sociálního státu a nastolení vlivné diktatury. S tím souvisí i vyšší preference hodnoty bohatství a bezpečí před svobodou, přestože ta zůstává v hodnotových preferencích stále velmi ceněna. Co se týká stupně integrace jednotlivců ve skupinách, tato veličina souvisí s kulturami individualistickými a kolektivistickými, stupeň očekávané průbojnosti je veličina závislá na kulturách asertivních a zdvořilých. (Například americká asertivita a zdvořilá jihovýchodně asijská), způsob zacházení s nerovností mezi lidmi je veličina provázaná se společenskou disparitou mezi mocnými a slabými. Platí pro všechny kultury v současném globálním prostředí a stupeň tolerance nejistoty a neznámého rozlišuje kultury s malým a velkým vyhybáním se nejistotě (Kolman, 2005) Post moderní česká společnost ovlivněna globálními procesy bude

muset i ve vzdělávacích systémech více prosazovat interkulturalitu mezi mladou generací. Výcvikové programy musí být v této souvislosti s interkulturalitou postaveny jak na prožitkovém, tak na didaktickém základě. Různé tréninky senzitivity a nácviky asertivního jednání jsou předpokladem pro uplatnění vlastní kultury v cizím prostředí. Pocity, které vzniknou u komunikujících stran, přinesou jak pozitivní, tak negativní stránky a představí se tak jejich znalosti o cizí kultuře. V oblasti didaktické je důležitá forma podávání informací a to se zřetelem na zvyšování znalostí studentů o cizí kultuře. Česká společnost se bude muset vypořádat s nárůstem vlastností svých občanů, které souvisejí s nadprodukcí a s nadspotřebou. Jsou to vlastnosti, podporující celkovou frustraci „sociální“ společnosti, jako jsou: sobeckost, egoismus, bezohlednost a lhostejnost. Vše je propojeno s konzumním životním stylem a s plýtváním neobnovitelných zdrojů. Co se týká digitálního prostředí a jeho rostoucí váha v jeho využívání již v předškolním i školním období, je nutné si uvědomit u dětí vážnost a serióznost celého edukačního procesu. Představuje to proces rovnoměrné a vyvážené kombinace na jedné straně rozvoje myšlení a na druhé straně vnímání a zpracovávání informací v internetovém prostředí. Internet je plný negativních sociálních kontaktů, to platí především v sociálních online sítích, které způsobují u mladé generace osamělost a deprese (Spitzer, 2012) a které jsou počátkem začínající digitální demence společnosti se všemi jejími následky.

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## UNIVERSITY AS INNOVATIVE ORGANIZATION IN THE ERA OF GLOBALIZATION

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**Abstract.** The article is concerned with innovations as a driving force of general development and sustainability and their significance and specifics in the university environment. Universities undoubtedly have the huge potential to become leaders in the area of R & D, education and learning. Likewise, they may become a significant driving force in supporting involvement and cooperation of subjects within a certain locality and creation of a certain community. In the beginning of the article it characterizes innovations by means of selected indicators. Main attention is paid to the role of a university in the process of increasing the innovative potential of individuals, the university itself as well as the whole society. Generally, innovation barriers are classified into two groups – internal and external. Internal - subjective barriers affect a certain subject in such an extent in which a single organization intensively eliminates their influence by its targeted innovation policy. External barriers, largely have an objective character. The objective of the article is to define a university as one of key innovative organizations in the era of globalization and identify major barriers to the development of its innovative potential.

**Keywords:** innovations, innovative organization, university

**JEL Classification:** I23, O31, O43

### 1. Introduction

Globalizácia predstavuje fenomén, ktorý výrazne zmenil ekonomické vzťahy na národnej a aj nadnárodnej úrovni (Butek, 2015). Aj dôsledkom globalizácie sa stali inovácie kľúčovým faktorom pre podnikateľskú aktivitu (Šipikal, Pisár & Uramová, 2010; Krolczyk & Legutko, 2014). Predstavujú jeden z najlepších nástrojov, ako udržať a zlepšiť nielen vývoj ekonomiky štátu, ale aj zlepšiť postavenie organizácií v porovnaní s konkurenciou v lokálnom aj globálnom podnikateľskom prostredí (Foltys, Dębicka-Ozorkiewicz, Królczyk & Hiadlovský, 2015). Ich podstatným znakom je realizácia novej pridanej hodnoty produktu, technológie alebo služby na

trhu (Inovačná stratégia SR na roky 2014 – 2020). Jedným z faktorov, ktoré ovplyvňujú úspešné riadenie inovácií, je tvorivosť. Ako uvádzajú Lesáková et al. (2008, s. 16), tvorivosť, schopnosť prichádzať s novými myšlienkami, nápadmi, unikátnym spôsobom ich kombinovať alebo ich spájať môžeme označiť ako inovatívnosť, pričom organizácia, ktorá podporuje inovatívnosť, vytvára predpoklady pre nové postupy a riešenia. Cieľom predloženého príspevku je definovať vysokú školu ako jednu z kľúčových inovačných organizácií v ére globalizácie a identifikovať hlavné bariéry brániace v rozvoji jej inovačného potenciálu. Úvod príspevku predstavuje všeobecný vstup do skúmanej problematiky – stručne definuje inovácie prostredníctvom vybraných ukazovateľov. Kľúčovou časťou príspevku je priblíženie úlohy vysokej školy pri zvyšovaní inovačného potenciálu nielen jednotlivca, ale aj samotnej organizácie – vysokej školy a aj celej spoločnosti. Záver príspevku je venovaný najmä bariéram voči inováciám v podmienkach verejných vysokých škôl.

## 2. Inovácie ako zdroj udržateľného rozvoja

Inovácie môžeme považovať za hybné sily ekonomického rastu (Galia & Legros, 2004). Podľa Lesákovvej (2012) sú inovácie dokonca celosvetovo považované za jednu z možností, ako zrýchliť prechod z pokrízovej ekonomiky na silnejšiu a trvalo udržateľnú ekonomiku. Hoci nejde o riešenie pre všetky svetové problémy, inovácie vytvárajú predpoklady pre vznik nových odvetví, podnikov i pracovných miest a sú predpokladom zvýšenia konkurencieschopnosti v najširšom slova zmysle. Pod inováciou rozumieme zavedenie nových, významne zlepšených produktov alebo procesov, zavedenie novej marketingovej metódy alebo novej organizačnej metódy vo vnútri podnikateľského subjektu alebo v externých vzťahoch (Oslo Manuál, 2005, s. 31). Od roku 2001 Európska komisia sleduje inovačnú výkonnosť krajín prostredníctvom hodnotiacej správy EIS – European Innovation Scoreboard a neskôr IUS – Innovation Union Scoreboard. Celkový obraz o inovačnej výkonnosti poskytuje Súhrnný inovačný index (SII) – súhrnný indikátor získaný agregáciou 25 ukazovateľov používaných na meranie inovačnej výkonnosti. Na základe výkonnosti v oblasti inovácií sa členské štáty EÚ klasifikujú do štyroch výkonnostných skupín: „inovační lídri“ (Dánsko, Fínsko, Nemecko a Švédsko), „úspešní inovátori“ (Belgicko, Francúzsko, Holandsko, Írsko, Luxembursko, Rakúsko, Slovinsko a Spojené kráľovstvo), „mierni inovátori“ (Cyprus, Česká republika, Estónsko, Grécko, Chorvátsko, Litva, Maďarsko, Malta, Poľsko, Portugalsko, Slovensko, Španielsko a Taliansko) a „slabší inovátori“ (Bulharsko, Lotyšsko a Rumunsko). Škandinávské krajiny spolu s Nemeckom patria ku krajinám, ktoré dlhodobo dosahujú najvyššiu inovačnú výkonnosť. Švédsko dosiahlo v roku 2014 najlepšiu pozíciu (SII predstavoval hodnotu 0,7401, priemer celej EÚ v roku 2014 0,551), pričom tento stav bol dosiahnutý najmä vďaka vyšším (podielom k HDP) a stabilným investíciám do výskumu a vývoja. V roku 2014 boli všetky krajiny V4 zaradené na základe hodnoty SII do skupiny tzv. miernych inovátorov, pričom hodnota SII Slovenskej republiky bola 0,3602. Slovensko má preukázateľný inovačný potenciál, ktorého rast však treba stimulovať a podporovať. V rámci krajín V4 má najlepšie postavenie Česká republika, ktorej hodnota SII v roku 2014 bola 0,4471. Približne rovnakú inovačnú výkonnosť ako Slovenská republika dosiahlo aj Maďarsko (SII 0,3692). Hodnota SII Poľska v roku 2014 predstavovala 0,3127.

Základné zdroje technického pokroku a vzniku inovácií predstavujú veda, výskum, vývoj (Horký & Kouba, 2013). Pod pojmom veda rozumieme systém overiteľných poznatkov o určitej množine javov a metód využívaných na ich získavanie, spracovanie, implementáciu a prezentáciu. Výskum je systematická a tvorivá činnosť, ktorej úlohou je rozširovať existujúce



poznatky o javoch a hľadať nové možnosti ich uplatňovania (Kucharčíková, 2013). Práve preto ďalším dôležitým ukazovateľom, ktorý ovplyvňuje inovačnú výkonnosť krajiny, je podiel výdavkov na vedu a výskum z HDP. Priemer celej EÚ v roku 2014 predstavoval 1,936%. Podľa OECD medzi rokmi 2010 a 2012 klesli výdavky na vzdelávanie, čo je považované za oneskorený dôsledok svetovej hospodárskej krízy z roku 2008. Daná skutočnosť neplatila v krajinách V4, čo môžeme vidieť v tabuľke.

Table 1 Vývoj výdavkov na vedu a výskum z HDP v krajinách V4 (%)

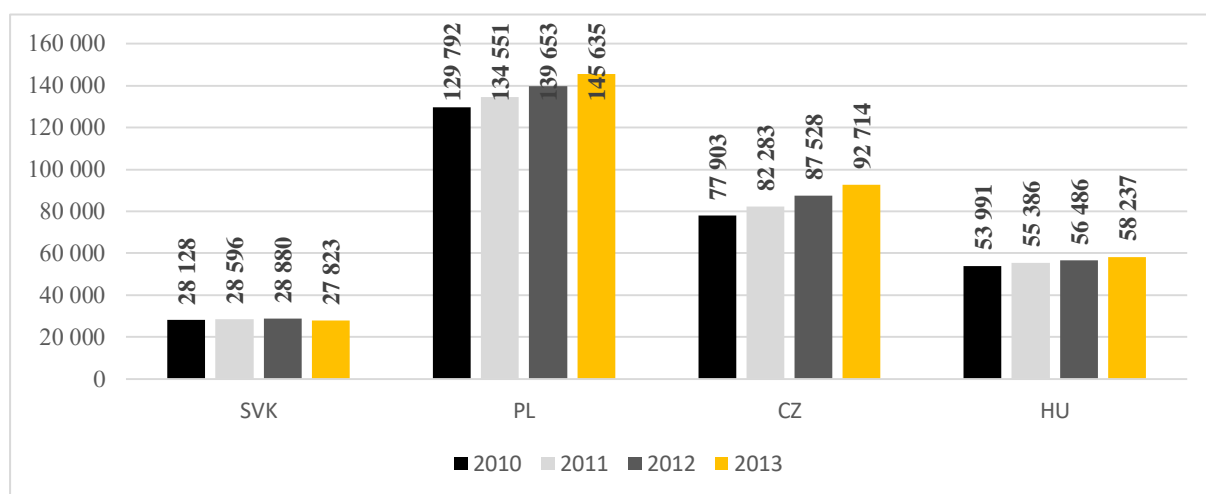
Krajina	2010	2011	2012	2013	2014
Slovenská republika	0,618	0,665	0,808	0,827	0,886
Poľsko	0,721	0,746	0,881	0,871	0,941
Česká republika	1,34	1,56	1,79	1,91	1,997
Maďarsko	1,47	1,196	1,27	1,397	1,371

Source: OECD <<https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm>>

Vo vyššie uvedenej tabuľke vidíme, že najvyšší podiel z HDP na výskum a vývoj bol dosiahnutý v Českej republike. Za pozitívne môžeme považovať, že vo všetkých krajinách (s výnimkou Maďarska v roku 2011 a Poľska v roku 2013) sledujeme od roku 2010 rastúcu tendenciu daného ukazovateľa. V Slovenskej republike bola hodnota ukazovateľa v roku 2014 0,886 % HDP, pričom bežné výdavky na vedu a výskum spolu v roku 2014 boli 553 934 tis. eur (Ročenka vedy a techniky v Slovenskej republike 2015).

Realizácia výskumu a vývoja si vyžaduje aj personálne zabezpečenie, pričom v nasledujúcom grafe uvádzame vývoj počtu zamestnancov výskumu a vývoja v krajinách V4. V Poľsku, Česku a aj Maďarsku počet týchto zamestnancov v sledovanom období rastie. V prípade Slovenska došlo k poklesu v roku 2013 v porovnaní s rokom 2012 o 3,66 %.

Figure 1: Vývoj počtu zamestnancov výskumu a vývoja



Source: Eurostat, 2016. <<http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>>.

Posledným nami sledovaným ukazovateľom je hrubá pridaná hodnota. Kým v období od roku 2003 do roku 2013 vykazoval najvyšší podiel na tvorbe hrubej pridanej hodnoty priemysel, v roku 2013 sa na prvé miesto dostala oblasť verejnej správy, vzdelávania a zdravotníctva s 19,4% podielom na tvorbe hrubej pridanej hodnoty.

Dôsledkom realizácie inovácií sú pozitívne efekty nielen na národnej úrovni, ale aj na úrovni organizácií. Organizácia môže prostredníctvom inovácie získať strategické výhody, ktorými je schopnosť ponúknuť niečo výnimočné, niečo, čo je pre ostatných ťažko zvládnuteľné, získať značný trhovú podiel na poli nového produktu alebo služby, prejsť ku konkurencii cenou, kvalitou a výberom, ponúknuť niečo, čo predstavuje úplne nový koncept a zmeniť spôsob pohľadu na to, ako jednotlivé časti systému spolupracujú (Tidd, 2007). V inovatívnych organizáciách sa udržateľným spôsobom menia organizačné aktivity zlepšovaním produktivity a kvality pracovného života, čo je založené hlavne na kombinácii technológií a schopností zamestnancov, angažovanosti a motivácii zamestnancov i vedenia prinášať nové výrobky, služby a postupy. Zvýšená inovačná kapacita organizácie vytvára priaznivý kolobeh, v ktorom inovatívnosť vedie k produktivite, na základe čoho je možné investovať zisk späť do organizácie, aby sa tak opäť podporila inovatívnosť (EHSV, 2011). Vrcholový manažment prisudzuje inovácii prirodzene vysokú prioritu, čím dochádza k pochopeniu nutnosti zmeny, k zmene kultúry, k vytvoreniu novej otvorenej atmosféry, k zmene myslenia, zmene hodnôt, počúvaniu nových hlasov, akceptácii nových myšlienok z nových zdrojov, k tvorbe multidisciplinárnych tímov, pochopeniu potreby osobnej zmeny, rešpektovaniu iných názorov, k pochopeniu novej roly vedúcich pracovníkov, k schopnosti generovať zdroje – ľudské aj finančné na zabezpečenie tvorby nových myšlienok, experimentov a nových príležitostí (Strhan, 2012). Čím rozvinutejšie postupy uplatňuje organizácia pri svojich inovačných aktivitách, tým lepšia je jej schopnosť implementovať inovácie (EHSV, 2011). Súčasťou podpory inovácií je aj zmena organizačnej kultúry, ktorá patrí k zložitým manažérskym úlohám. Netreba tiež zabúdať na faktory, ktoré vplyvajú na úspech inovačných aktivít organizácie. Medzi tieto patrí výhodná orientácia na portfólio inovácií s rovnomerným zastúpením rôznych inovačných koncepcií, rýchlosť reakcie na požiadavky trhu, využívanie svojich silných stránok, technická úroveň, podpora vrcholového vedenia organizácie, aplikácia systému riadenia inovačného procesu. Faktormi neúspechu sú zväčša nerešpektovanie podmienok trhu, nízka kvalita spracovania inovačných projektov a nedostatočná diferenciácia (Strhan, 2012).

### **3. Udržateľnosť inovačného potenciálu vysokej školy**

Vysoké školy majú v globálnej ére obrovský potenciál stať sa lídrami v oblasti výskumu a vývoja, výučby a učenia sa. Rovnako sa môžu stať významnou hybnou silou v podpore angažovanosti a spolupráce subjektov v rámci určitej lokality a pri tvorbe a rozvoji danej komunity. Vysoká škola je miestom, kde je možné slobodne vyjadrovať myšlienky a názory, kde sa podporuje tvorivý, inovatívny, ale zároveň aj kritický prístup k riešeniu problémov, vytvárajú sa nové znalosti a dochádza tu k zániku zaužívaných paradigiem a k ich výmene za nové. Vzdelávací systém je v každej krajine jedným z najvýznamnejších indikátorov rozvoja a jeho úroveň a kvalita podľa nášho názoru predstavujú jeden z kľúčových predpokladov prosperity krajiny a jej trvalo udržateľného rastu. Udržateľnosť v tomto zmysle môžeme chápať aj ako proces alebo stratégiu, ktorá vedie k udržateľnej budúcnosti. Udržateľnosť môžeme vnímať ako schopnosť organizácie udržať si určitú úroveň alebo mieru výkonnosti a schopnosť pokračovať vo svojej činnosti počas neurčite dlhého obdobia. Udržateľnosť preto predstavuje činnosť, alebo lepšie povedané súhrn vzájomne súvisiacich činností, ktoré sú uskutočniteľné počas dlhého obdobia, pretože sa môže prispôbovať a adaptovať na zmeny fyzického, spoločenského, ekonomického a intelektuálneho prostredia. V súčasnosti teda udržateľnosť zahŕňa holistický prístup, v rámci ktorého otázky spoločenskej, finančnej, zdravotnej a vzdelanostnej udržateľnosti predstavujú základ pre environmentálnu udržateľnosť (Barnard & Van der Merwe, 2016). Udržateľnosť v prostredí vysokej školy považuje za dôležitú aj

Mooreová (2005), ktorá tvrdí, že sa musí stať fundamentálnou prioritou. Podľa nej politika trvalo udržateľného rozvoja vysokej školy predstavuje potrebu udržateľného rozvoja jej prevádzky, ako aj vzdelávania súvisiaceho s udržateľnosťou. Princíp a koncepcia trvalo udržateľného rastu zahŕňa mnohé perspektívy, inovatívne prístupy, iniciatívy a stratégie, ktoré by mali byť integrované v najvyšších úrovniach manažmentu.

Vzdelanostná úroveň obyvateľstva je jedným z faktorov podmienujúcich konkurencieschopnosť každej krajiny, umožňuje rozvíjať jej „excelentnosť“, determinuje mnohé jej konkurenčné výhody (ale aj nevýhody) oproti iným krajinám. Vzdelanie sa teda v súčasnosti, ktorú môžeme charakterizovať ako éru znalostnej spoločnosti, stáva hlavným zdrojom rozvoja a ekonomického rastu. Môžeme tiež povedať, že rovnako ako v podnikateľskej sfére, tak aj v iných oblastiach vrátane vysokých škôl a vedecko-výskumných inštitúcií platí, že inovácie sú kľúčom k prežitiu a k zabezpečeniu trvalo udržateľného rozvoja. Podľa Barnarda a Van der Merweho (2016) sa pritom dôraz kladie na aktívny prístup jednotlivcov a organizácií a ich flexibilitu s cieľom umožniť implementáciu proaktívnych stratégií v spojitosti s neustále sa meniacimi podmienkami.

Globalizačný proces môže predstavovať na jednej strane katalyzátor urýchľujúci rozvoj, ale na druhej strane môže tiež byť nositeľom chaotického rozvratu systému, ktorý vyúsťuje do spoločensko-ekonomických a politických problémov. Vo svetle toho sa ako kľúčová javí myšlienka, že heterogenita môže byť vnímaná ako súhrn postojov a praktík, v ktorých sú komplexnosť a diverzita strategicky vyvážené spôsobom podporujúcim organizačnú udržateľnosť (Carayannis, Sindakis & Walter, 2015). Myslíme si, že snaha o dlhodobú udržateľnosť a konkurencieschopnosť vysokej školy v súčasnom turbulentnom prostredí charakterizovanom neustálymi zmenami, ale tiež v čase, keď spoločnosť, v ktorej vysoká škola pôsobí, nazývame znalostnou, bude čoraz prirodzenejšie viesť k formovaniu prostredia podporujúceho tvorbu inovácií a ich komercializáciu v praxi. Vychádzajúc z práce Carayannisa, Sindakisa a Waltera (2015) môžeme v súlade s Barnardom a Van der Merwem (2016) vymedziť organizačnú udržateľnosť (aj v súvislosti s chápaním vysokej školy ako inovatívnej inštitúcie) ako súhrn nasledovných charakteristík:

1. zdrojovo vyvážená a jasne definovaná inštitucionálna identita vysokej školy, vymedzená v jej základných akademických funkciách, ktorá je nielen finančne a environmentálne udržateľná, ale je udržateľná aj v rámci jej širšieho spoločenského postavenia; kultúra udržateľnosti podporuje prostredie priateľské k inováciám a podnikaniu; technologické zameranie by malo mať v sebe integrovanú jasnú kultúru udržateľnosti, aby nemohlo byť včlenené do tradičnej formatívnej, „akademickej“ úlohy vysokej školy;
2. systém správy, riadenia a organizačná štruktúra, ktorá podporuje a chráni akademické a iné inštitucionálne hodnoty, z ktorých vychádza fungovanie vysokej školy a na základe ktorých je hodnotená všetkými zainteresovanými subjektmi,
3. agenda, ktorá vytvára sociálne a ekonomické podmienky nevyhnutné pre úplnú rovnosť príležitostí všetkých zamestnancov a študentov.

#### **4. Inštitucionálna odolnosť voči inováciám v podmienkach verejných VŠ**

Ako už bolo uvedené, jeden z kľúčových predpokladov inovačného potenciálu organizácie je pozitívny prístup manažmentu k inováciám na všetkých úrovniach riadenia a miera flexibility organizácie v širšom význame. Dynamická reakcia manažmentu na operatívne a strategické

zmeny, resp. miera zotrvačnosti k historicky vžitému spôsobu riadenia a myslenia významným spôsobom vplývajú na efektívnosť inovačného procesu.

Vo všeobecnosti je možné bariéry inovácií rozdeliť na vnútorné a vonkajšie. Vnútorné, subjektívne bariéry pôsobia na daný subjekt do takej miery, ako intenzívne samotná organizácia v rámci cielenej inovačnej politiky eliminuje ich vplyv. Vonkajšie bariéry, prevažne objektívneho charakteru, pôsobia na všetky subjekty približne rovnakým spôsobom, hoci cieľovým strategickým riadením je možné ich čiastočne eliminovať, čím sa v praxi dosahuje individuálne rôzna úroveň ich vplyvu.

V podmienkach verejných vysokých škôl patria medzi rozhodujúce vonkajšie bariéry inovácií:

- legislatívne vymedzenie manévrovacieho priestoru vo viacerých kľúčových oblastiach rozvoja inovačného potenciálu a s tým spojené obmedzenie pôsobnosti a kompetencií,
- určené pravidlá financovania, v širšom kontexte najmä politika vlády vo vzťahu k objemu financovania vysokých škôl, prevažne v oblasti podielu zdrojov určených na financovanie vedy, ktorý je silne korelovaný s inovačným potenciálom univerzity,
- riešenie problému štrukturálnej nezamestnanosti v kontexte cieľového vynakladania verejných zdrojov na univerzitné štúdium s cieľom zosúladenia potrieb trhu práce s ponukou vysokých škôl na strane produkovaných absolventov,
- miera pyramidálneho vnímania inovačného potenciálu krajiny vo vzťahu k školstvu; efektívne využitie inovačného potenciálu sa nedosiahne až na univerzitnej úrovni, ale len v prípade zásadného vnímania dôležitosti kvality vzdelávacieho systému ako celku, v ktorom základné školstvo plní rozhodujúcu úlohu,
- absencia dlhodobu stabilnej a efektívnej stratégie v oblasti vzdelávania z úrovne ministerstva školstva.

Medzi vnútorné bariéry rozvoja inovačného potenciálu univerzity možno zaradiť (z pohľadu verejných vysokých škôl):

- nízku mieru flexibility a reakcie na vonkajšie potreby zo strany manažmentu na všetkých úrovniach riadenia,
- nedostatočnú schopnosť získavania finančných prostriedkov z neverejných zdrojov,
- vysokú mieru zotrvačnosti v myslení zamestnancov vo vzťahu k inováciám, jednak vo vzťahu k manažmentu, ale aj vo všeobecnosti,
- univerzity by mali byť výkladnou skriňou krajiny v oblasti učiacej sa organizácie a stupňa inovačného potenciálu inštitúcie, žiaľ, často krát je opak pravdou,
- samotné uvedomovanie si významu inovácií pre dlhodobu efektívne fungovanie vysokej školy a prirodzený záujem každého zamestnanca prispieť k zvyšovaniu inovačného potenciálu inštitúcie.

## 5. Conclusion

Súčasná ekonomika je charakterizovaná ako nová, globálna a znalostná. Iba tie organizácie, ktoré sú dynamické, dokážu rýchlo reagovať na požiadavky trhu, sú schopné realizovať inovačnú činnosť (Lesáková, 2009). Organizácie terciárneho sektora, medzi ktoré patria aj vysoké školy, by mali fungovať ako znalostné a inovatívne organizácie s cieľom vytvárať a zdieľať znalosti, ktoré budú viesť k podpore trvalej udržateľnosti a rozvoja. Pre úspešné fungovanie vysokých škôl je však nevyhnutné, aby ich riadenie bolo inovatívne, pretože len

flexibilný manažment, ktorý má prirodzene pozitívny vzťah k inováciám aj v samotnom riadení organizácie, teda vo svojich vlastných radoch, si dokáže uvedomiť základný princíp úspechu v súčasnosti, a to, že inovácie sú kľúčom k prežitiu vysokej školy, jej udržateľnosti a úspešnému budúcemu smerovaniu a konkurencieschopnosti v súčasnom náročnom prostredí. Keďže, ako sme už uviedli, vzdelanie sa stáva jedným z hlavných zdrojov ekonomického rastu, úspešná a inovatívna vysoká škola bude potom poskytovať kvalitné vzdelanie, pripravovať absolventov schopných naplňať aktuálne potreby praxe a prispievať tak ku konkurencieschopnosti a udržateľnosti celej spoločnosti.

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## ECONOMETRIC ANALYSIS OF THE IMPACT OF ICT ON ECONOMIC GROWTH FOR QATAR IN GLOBALIZATION CONTEXT

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**Abstract.** In recent years, advancement in information and communication technology (ICT) has caused many international structural changes. The world as developed, emerging and developing communities started extremely to harness ICT for sustainable development and advance creative and innovative knowledge societies in globalization context. The significant role of ICT is stemmed from empowering humans, governments and organizations to renovate information into knowledge as a forceful driver in progressing lasting change in the globalization of economy and society. Given the significance of ICT development and innovation as a key cause in increasing productivity, growth rates, economic development and advancement in all expanses, the developed countries have given great importance to adopt ICT drivers, tools and techniques to achieve continuous technology development, so as followed by developing countries to be accommodated with international changes. Economists forecast that economic growth is motivated by investments in ICT. The determination of this investigation is to examine the effects of ICT capital and labour stocks on economic growth for Qatar covering the period from 1995 to 2013, as ICT is an important driver for the globalization process. The outcomes show that there is a positive and significant association between the GDP per capita and the ICT index. The information density that consists of network and skills sub-indices is used as an indicator of ICT, where this ICT index has interpreted the impact on GDP per capita.

**Keywords:** Information and communication technology (ICT), Economic growth, Qatar

**JEL Classification:** C33, E22, O4

### 1. Introduction

The past few decades proved that technology was the driving force for growth and development (Kuzmenko, Maitah, Malec, & Hndi, 2014) (Macák, Maitah, & Selby, 2014) (Maitah, Hayat, Malec, & Eldeeb, 2014). Despite the different objectives of the various countries of the world, it seems that these countries agreed on that science and technology are the most effective tool for pushing ahead growth and development. Most industrially developed countries harness the bulk of their interest in the technological sphere focusing on various fields such as the technology used in sugar production (Maitah, Saleem, Malec, & Gouda, 2015) (Maitah, M; Smutka, L, 2016) (Maitah, Rezbova, Smutka, & Tomsik, 2016) (Smutka, Zhuravleva, Pulkrabek, Benesova, & Maitah, 2016). The developing countries focus their greatest attention in the field of science and technology to determine the particular needed

quantity and quality that may contribute more effectively than others to meet their development needs. Information and communication technologies (ICTs) are considered as the core components for technology deployment nowadays and as an enabling tools and techniques for exploiting the advances in technology and science.

The ever increasing value of ICTs in economic and social development arisen dramatically with an impressive rate since the mid-nineties which mark the starting period of rapid growth of these technologies and their markets. The world as developed, emerging and developing communities started enormously to harness ICT for sustainable development while advancing creative and innovative knowledge societies (Dedrick, Gurbaxani, & Kraemer, 2003). The important role of ICT stems from enabling humans, governments and organizations to transform information into knowledge as a robust driver in evolving lasting change in the economy and society (Conole & Dyke, 2004) (Lyon, 2013) (Toth, Maitah, & Stefkova, 2014). Given the importance of ICT development and innovation as a key factor in increasing productivity, growth rates, economic development and progress in all areas, the developed countries have given great importance to adopt ICT drivers, tools and techniques to achieve continuous technology development, so as followed by developing countries.

## 2. Related Work

The important role of ICT as an enabling technology that efficiently contributes in production cost reduction and productivity enhancement of various business sectors and so as for all country sectors, which will be reflected positively on economic growth attracted the concerns of many parties such as researchers, international organizations and governments. In what follows we will discuss several research studies talking about the impact of ICT on economic growth using various models such as Cobb-Douglas model, extreme bound analysis, vector autocorrelation and others. The quantified part of ICT involved different measures such as ICT capital and investment, and indices such as info-states by ORBICOM, opportunity index by ITU and others.

The study entitled “ICT Investment and Economic Growth in the 1990s” compared the impact of ICT investment on economic growth in 9 OECD countries<sup>1</sup>. The study results showed that ICT capital investment contributed between 0.2 and 0.5% points per year to economic growth according to the country. For the period from 1995-2000, ICT contributed higher percentage from the preceding period ranging from 0.3 to 0.9% points per year. Results showed that the United States was not the only country that gained benefits from the positive impacts of ICT capital build up on economic growth. Impacts have obviously been biggest in the United States, and then in Australia, Canada, and Finland, but Germany, Japan, Italy, and France recorded the bottommost contribution of ICT investment impact on economic growth among the nine studied countries. One of the most influential drivers of growth as ICT investment in the study case is preparing appropriate ICT framework conditions and not essentially in ICT sectors itself (Colecchia & Schreyer, 2002).

(Becchetti, Andres londono Bedoya, & Pagane, 2003) investigate the effect of investment in telecommunications and software on the productivity of Italian firms. They found that

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<sup>1</sup>These countries include Australia, Canada, Finland, France, Germany, Italy, Japan, the United Kingdom and the United States



telecommunications positively impacts the formation of new products and practices, while software rises the request for skilled laborers for advancing firms' productivity.

The researchers (Jorgenson, Stiroh, Gordon, & Sichel, 2000) found that there is positive and significant impact of ICT on production in the United States in 1990s. In addition, a study by (Inklaar, O'Mahony, & Timmer, 2005) from the year 1979 to 2000 found that there is a significant contribution of ICT to economic growth for the United States and European countries including Germany, France, Netherlands and the UK, but the study found that the United States outperformed the four European countries (included in the study) in ICT influences on economy. Also several cross country studies discovered the positive impact of ICT on labor output and indicating country differences regarding ICT impacts in developed economies (Van Ark, O'Mahony, & Timmer, 2008). The result of positive influence of ICT on economic growth disagree with a research conducted by (Dewan & Kraemer, 2000) from the year 1985 to 1993. This panel conducted study (includes fourteen developing countries and twenty two developed economies) found that ICT impact on economic growth was found positive for developed countries. The panel study was held on 36 countries for the period from 1985–1993. They also found insignificant impact of ICT in developing countries referring this to low level of ICT investment, the deficiency of appropriate environment such as infrastructure and government policies.

### 3. Methodology and Data

Nowadays ICTs have a great impact in every aspect of our life, as an economic and social actuality. There is a difference between its consumptive and productive functions. As the economic theory states that the standard living of the people is subjected to consumption, but over time we must challenge the difficulty of increasing the production competences of a country in a sustainable approach, and so the economic growth can be advanced and extended to economic development (Maitah, Kuzmenko, & Smutka, 2016) (Soukup, Maitah, & Svoboda, 2015). The nature of ICT is twofold: the productive side (info-density) and the consumptive one (info-use). Info-density denotes to the portion of a country's whole capital and labor stocks related to ICT and represent the productive side. Info-use denotes to the ICTs consumption side. In principle, the two can be combined to represent the amount of a country's info-state. The difference in info-states among economies can relatively measure the Digital Divide.

ORBICOM model is provided by specialized institution as ORBCOMM network which is the "Global Network of UNESCO Chairs communications Telecommunications and the International Telecommunication Union", the model, based on one explained variable that is information density and technical progress. Info-density is the compound of all ICT factors of capital and labor. The productive capacity is fixed at any particular argument in time, as the pooled factors: stocks, and technology are fixed, but they can expand as time passes. ICT capital consists of network infrastructure, and ICT machinery and equipment. ICT labor is accounted as the stock of the ICT skills. Output production will be an accumulative function of ICT factors of various arrangements which comprise capital and labor (Jensen & Mahan, 2007).

For info-use the readiness of ICT goods is crucial for the consumption of ICT services that would fulfil eventual needs, and constructing 'consumptive capacity' is a requirement to generate ingesting drifts. There is a difference between ICT uptake and ICT intensity of use, where uptake refers to ICT goods and intensity of use to ICT services. Uptake and intensity of use are subject to the level of classification according to obtainability of statistical data, such as investigating measures and analysis according to sectors, where industries can be divided by

size or type, and governments by level such as local, regional, national, and type of organization. Also, clusters of individuals can be distinguished by gender, metropolitan and rural positions, level of education which are significant for the investigating of digital divides core to an economy (Sciadas, From the digital divide to digital opportunities, 2005).

The aggregate production function that encounters the relationship between the economic growth as output and the degree of ICT practices as input which can be represented by the production part of ICT (networks and skills) is complex. In an introductory effort to estimate the strength of this connection, we inspect the effect of info-density on GDP per capita as info-density captures the ICT per capita stock of capital and labor skills, and GDP per capita measures the cumulative per capita output as a representation for growth. The per capita conversion of networks and skills in the calculation of the info-density index is not identical to the per capita transformation of GDP. In the info-density index the capital stock is measured per 100 persons in some cases and per household in other cases. In the GDP per capita calculation, GDP is divided by the population. A subsequent and more detailed examination of the relationship between info-density and GDP per capita might perfectly explore the sensitivity of the results to these data differences (Sciadas, Monitoring the Digital Divide... and Beyond, 2003).

The relationship between GDP per capita and info-density is linear, and there is a strong correlation between them, that is, over time as info-density increases, GDP per capita increases. This model can be expressed as follows:

$$\text{Log}(GDP_{i,t}) = \log(A) + \alpha_1 \text{Log}(ID_{i,t}) + \varepsilon_{i,t} \quad (1)$$

Where ( $GDP_{i,t}$ ) represents GDP per capita for country (i) over time (t), ( $ID_{i,t}$ ) represents info-density for country (i) over time (t) in annual sequence, ( $\alpha_1$ ) represents the elasticity of info-density of GDP per capita and ( $\varepsilon_t$ ) represents the random factor. The model can be estimated using the panel regression using least squares, fixed effects and random effects approaches. The model can be used to estimate the sensitivity of per capita GDP to variations in info-density for each individual country within the study sample.

The calculations of info-density according to ORBICOM (Sciadas, From the digital divide to digital opportunities, 2005) is as follows:

$$ID = \sqrt[k]{\prod_{i=1}^k I_{n,t}^{i,j(e)}} \sqrt[k]{\prod_{i=1}^k I_{n,t}^{i,j(e)}} \quad (2)$$

The notation  $\Pi$  represents product and n the number of each component's individual indices.  $I$  represents the guide value and i represents the used indices. In 2001, for networks n=5 (fixed, mobile, cable, Internet and bandwidth), for skills n=2 (literacy and gross enrolment) and for uptake n=4 (television, residential lines, PCs and Internet users). With k=2, Networks and skills are united into the ID index.

$$ID = \sqrt[3]{networks * skills} \sqrt[3]{networks * skills} \quad (3)$$

Networks=

$$\sqrt[3]{fixed/100 inhabitants * mobile/100 inhabitants * bandwidth(b/s)/internet user} \quad (4)$$

$$I^{gross enrolment} = (\text{primary} + 2 \times \text{secondary} + 3 \times \text{tertiary})/6 \quad (5)$$

$$\text{Skills} = \sqrt[2]{\text{literate rate} * I^{gross enrolment}} \quad (6)$$

The data sources of independent control variables and dependent variable of GDP per capita are from the World Bank database (available on <http://databank.worldbank.org/>) the Info-density index data for the years from 1995-2003 are from ORBICOM study, the index for the years 2004-2013 was calculated depending on the data from ITU, World Bank and UNESCO bulletins, in addition to using information from Qatar Ministry of Development Planning Statistics (available on <http://www.qsa.gov.qa/>).

## 4. Results and Discussion

The estimated results measuring the impact of ICT represented by info-density on economic growth for Qatar represented by GDP per capita are shown in table 1.

The validity of the estimated model can be proved through statistical evaluation method as follows:

- F-test (Fisher test): The significance for the model as a whole is explained as the calculated F-statistics (471.21) is greater than the tabular one ( $F = 4.45$ ), so the alternative hypothesis is accepted and the whole model is significant. Also the level of Fisher significance is zero ( $\text{Prop (F-statistic)} = 0.0$ ).
- Significance of model parameters: The t-test value for log (info-density) is 21.70 which is more than the tabular one which is 2.11 at 5% confidence level so as for the constant with t-statistic equal 90.09 greater than tabular value, so the parameters are significant.
- Confidence interval: significance of info-density parameter can be assured by the confidence interval  $\alpha \in [0.469303 - 2.11 * 0.021620, 0.469303 + 2.11 * 0.021620] = [0.424, 0.515]$ , we see that zero doesn't belong to the confidence interval. Significance of constant parameter can be assured by the confidence interval  $\alpha \in [4.029014 - 2.11 * 0.021620, 4.029014 + 2.11 * 0.021620] = [3.983, 4.075]$ , where zero doesn't belong to the confidence interval.
- Determination coefficient: the value of R-square is 96.5% which means that ICT explains 96.5% of the changes that occur in the dependent variable.
- Durbin Watson (DW): As the DW statistic value 1.483 is more than the DW tabular value 1.401 at 5% confidence level, then we accept the null hypothesis and conclude that there is no positive autocorrelation between the residuals.
- Normality test: The results of this test are shown in figure 1, this test depends on Jarque-Bera statistic that is calculated from skewness and kurtosis statistics, where n is the number of observations and k is the number of input variables in the regression equation. The hypothesis of this test are as follows:  $H_0$ : Errors are normally distributed and  $H_1$ : Errors are not normally distributed. The results show a low value of Jarque-Bera statistic ( $J-B = 0.12$ ) which is less than the critical value of chi-square  $\chi^2(2) = 5.99$ , with the Jarque-Bera probability (94.03 %) that is higher than 5 %; then, the null hypothesis is not rejected implying that there is non-normality problem and the error is common.

Table 1: Results of estimated model for the impact of ICT on GDP per capita for Qatar

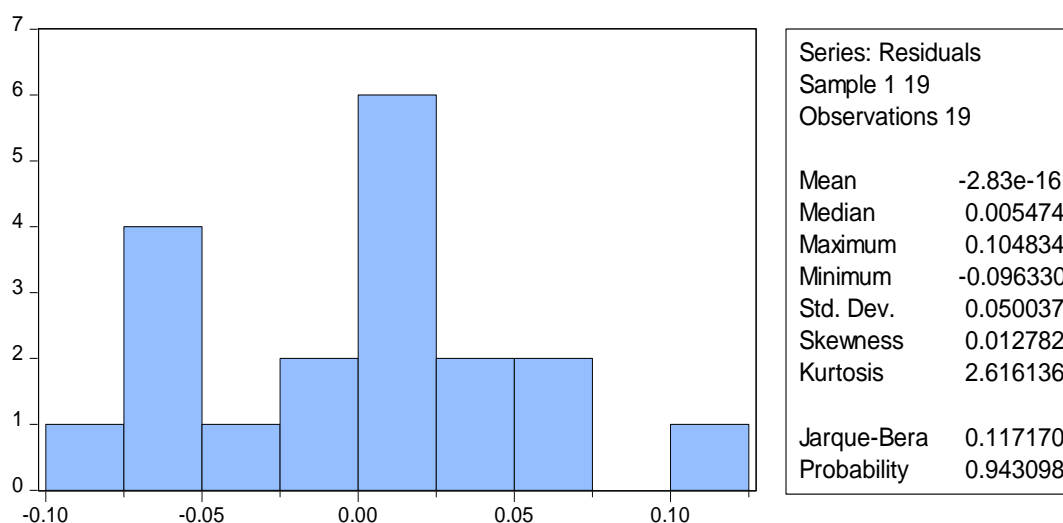
Dependent Variable: LOG_GDP_C				
Method: Least Squares				
Date: 10/19/15 Time: 23:07				
Sample: 1 19				
Included observations: 19				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_ID_	0.469303	0.021620	21.70731	0.0000
C	4.029014	0.044722	90.09065	0.0000
R-squared	0.965179	Mean dependent var		4.993396
Adjusted R-squared	0.963130	S.D. dependent var		0.116453
S.E. of regression	0.022361	Akaike info criterion		-4.663731
Sum squared resid	0.008500	Schwarz criterion		-4.564316
Log likelihood	46.30544	Hannan-Quinn criter.		-4.646906
F-statistic	471.2073	Durbin-Watson stat		1.482819
Prob(F-statistic)	0.000000			

Source: author using Eviews 9

- Parameter stability: As illustrated in table, the parameters are stable, where Ramsey's test is used for this issue with the null hypothesis that proposes the stability of the model coefficients if the probability is more than 5%. As shown in table 2 Log likelihood probability is 6.9%, then null hypothesis is accepted indicating that the model coefficients are stable. Also the probability associated with F-statistic 11.92%, which is more than 5 %, then we accept the null hypothesis and the model is well specified.
- Heteroscedasticity test: As illustrated in table 3. The two associated probabilities are more than 5 %, hence, we accept the null hypothesis of homoscedasticity of errors. Also the model is serial independent as clarified from table 2.

The positive and significant impact of ICT is obvious, where the result shows that ICT elasticity is 0.469, which means that any increase of domestic ICT by 10% leads to increase in GDP per capita by 4.69% where it is a positive with proportional impact.

Figure 1: for Qatar Actual fitted graph



Source: author using EViews 9

As we recognize from table A.3 in Appendix 2, there are comparatively low GDP per capita growth together with high info-density growth rates. This might be due to incompetent investments, which may delay these developing Arab countries illustrated in this study from gaining the benefits of ICT contributions, so there is a need for adequate edge of info-density. Also this delay of benefiting from ICT externalities may be due to the extra time needed to accumulate ICT experience for these Arab countries. Other factors impede the economy from growing are various economic policies (financial policy, investment, trade, monetary policy and others), in addition to geopolitical issues and others.

Table 2: Ramsey and serial correlation test for Qatar

Ramsey RESET Test Equation: UNTITLED Specification: LGDPC LID C Omitted Variables: Squares of fitted values				
	Value	Df	Probability	
t-statistic	1.703760	10	0.1192	
F-statistic	2.902797	(1, 10)	0.1192	
Likelihood ratio	3.313167	1	0.0687	
<i>Breusch-Godfrey Serial Correlation LM Test:</i>				
F-statistic	0.2798 04	Prob. F(2,9)	0.7623	
Obs*R-squared	0.7610 04	Prob. Chi-Square(2)	0.6835	

Source: author using EVIEWS 9

Table 3: Heteroscedasticity test

Heteroscedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	3.8914 82	Prob. F(1,17)	0.0650
Obs*R-squared	3.5391 53	Prob. Chi-Square(1)	0.0599
Scaled explained SS	2.2894 86	Prob. Chi-Square(1)	0.1303

Source: author using EVIEWS 9

## 5. Conclusion

This paper focused on the impact of ICT on economic growth for Qatar. ICT has a significant impact on economic growth and globalization of Qatar's economy which was the case of study of this paper. The econometric results show that the impact of ICT on economic growth for Qatar is positive and significant with 0.469 points. This positive impact will facilitate the globalization of Qatar economy as the usage of information and communication technology has a significant impact on connecting the various economic sectors in Qatar with other related sectors in the global context. The positive and significant impact of ICT on Qatar economy indicates that it is necessary to continue investing in ICT infrastructure and services which in turn would positively and significantly impact the advancement the economic growth.

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# CONVERGENCE OF IDEAS?: ANALYSING FUKUYAMA'S AND HUNTINGTON'S CONCEPTS OF THE FUTURE

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**Abstract.** We are in an unprecedented idyllic era, although the world is considerably less violent, there are regions plagued with by protracted conflicts. Sectarian violence within regions and countries have spilled over into the west resulting in a migration crisis. Along with highlighting the weakness of the European Asylum system it has brought forward the emerging battle of ideals between the Muslim world and Western democracies. Considering Francis Fukuyama's and Samuel P. Huntington's arguments for global relations - We are at the nexus of these two ideas; Either liberal democracy has finally become the global hegemony establishing economic cooperation and an era of peace, or alternatively, a multi-polar and civilization-divergent order could characterize the state of the world. The debate between Fukuyama and Huntington began more than 20 years ago. In light of current affairs in Europe and processes in the Middle East, their concepts have become even more relevant. In *The End of History* (1989), Fukuyama argues that because of the rise of modernization, the worldwide spread of Western consumer culture and liberal democracy as the prevailing political system, that the evolution of human ideology is at its endpoint and in the absence of a better alternative. In contrast, Huntington in *The Clash of Civilizations* (1993), argues that the biggest threat to Western civilization is a coming period that will be characterized by conflicts erupting as the world's civilizations reach their breaking points. This paper will consider both concepts and synthesize their opposing views on international political developments.

**Keywords:** civilizations, society, Fukuyama, Huntington, political world order

**JEL Classification:** F51

## 1. Introduction

Following the destruction of the Berlin Wall, American Political Scientist, Francis Fukuyama published arguments derived from Hegel's description of history as the final end of history. He describes the world as a place where "...The cooperative restaurants and clothing stores opened in the past year in Moscow, the Beethoven piped into Japanese department stores, and the rock music enjoyed alike in Prague Rangoon, and Tehran." (Fukuyama, 1992). Fukuyama observed that western culture has seemingly integrated in societies that were plagued by communist and fascist philosophies, and that even in Islamic societies, western culture seemed to infiltrate global borders. This observation was his basis that the world is evolving into its final stage of history, a chapter that will be characterized by universal western values and liberal democracy. Samuel Huntington, Fukuyama's professor, responded to his student theory with a warning about his assumption regarding the global westernization (Burns, 1994). Huntington described this assumption as arrogant and dangerous. He agreed that the world was



moving towards a different phase in history but this would not be characterized by the end of conflict and global cooperation due to the spread of liberal democracy. He posited that conflict will continue, and it will be due to culture and identity. Yet the nature of conflict and international liberal order has evolved. Fukuyama has amended his initial theory several times in response to global developments. This much is true - the intensity of conflicts within civilizations remain as high as it was in the cold-war, however, the occurrence of conflict between civilizations has been extremely low (Tusicsisny, 2004), (Betz, 2013).

Huntington's response to Fukuyama's theory has sparked an ongoing debate regarding the two paradigms. There is a rich amount of scholarship that synthesizes the conflicting viewpoints. In fact, Fukuyama, as history has progressed has altered his theory to elaborate on its aspects as a world that was reeling from the cold-War has now entered a new phase characterized by the clash of Islam and the West, a Russia that is growing its influence and the future of Asian relations with the West become less and less predictable (Erisson & Norman, 2011), (Collet & Inoguchi, 2012). This paper will review both Huntington and Fukuyama's theories and its criticisms to expand on the work of Dr. Costa Andre Georghiou, who identified points of convergence this paper will consider recent global developments in the context of the four areas of convergence: Westernization vs. Modernization, the world-wide acceptance or rejection of liberal democracy, the universality of Western civilization, and the role of the state (Georghiou, 2014). The discussion in this article will consider recent develops in international relations and new positions taken by Fukuyama in Political Order and Political Decay - his official response to Huntington's Clash of Civilizations in the context of two points of convergence, Westernization vs. Modernization and the world-wide acceptance or rejection of liberal democracy.

## 2. Review of Fukuyama and Huntington

Does the end of history mean the end of events? Fukuyama argues that it can in the *End of History and the Last Man*, he makes three points regarding the state of the world and human society. First, history is an evolutionary process where human society is repeatedly refined as it moves from objectively worse to objectively better in terms of 'freedom'. Second, the driving force behind histories evolution is the liberal democratic state. The liberal democracy is the only political system that allows for citizens to hold governments accountable fostering efficiency and mitigating corruption, something that Marxism and fascism failed to do. Third, the end point of historical evolution and the emergence of the last man is characterized by society that is constantly refining itself but amidst an era of greater peace due to the spread of liberal democracy (Bertram & Chitty, 1994). That although we have reached an era of liberal democracy, in its practice society will constantly fine tune and develop its self. Fukuyama speaks of history in terms of Hegel's notion of the end of history concerning the French Revolution and the adoption of freedom and equality being permanently adopted following the French Revolution and into the Industrialization of society. "(Hegel's) did not mean that the natural cycle of birth, life, and death would end, that important events would no longer happen, or that newspapers reporting them would cease to be published. It meant, rather, that there would be no further progress in the development of underlying principles and institutions, because all of the really big questions had been settled." (Fukuyama, 1992) Therefore, "The last man lives in a perfected state, his thymos is satisfied and his desire to improve the system is spent." (Fukuyama, 1992).

Fukuyama, at a time that saw the end of the cold war, predicted that the aforementioned factors were at play and would lead to the end of all major conflicts. “Liberal democracy replaces the irrational desire to be recognized as greater than others with a rational desire to be recognized as equal. A world made up of liberal democracies, then, should have much less incentive for war, since all nations would reciprocally recognize one another’s legitimacy.” (Fukuyama, 1992) Fukuyama is heavily influenced by neoconservative colleagues and the ideology that American democracy and free-market economics should be spread to the rest of the world. The major point of contestation between Fukuyama and Huntington is that Fukuyama sees economy as a driver for cooperation where in contrast Huntington places more value on identity.

The nexus of the two is that Fukuyama’s theory is an argument that posits future peace and Huntington will not substantiate this claim, instead he will only say that conflict will be rooted in culture and linguistic differences. To Huntington, the end of the Cold War ushered in a new era where nations made alliances and declared their enemies along cultural lines, not ideological ones. States who share cultural values such as religion and governance styles would form civilizations. As a result, the formed civilizations would compete for power. In contrast to Fukuyama, conflict is a historical norm that isn’t cooperative, isn’t liberal, and will not result in peace (Abbinnett, 2003).

The debate between the two comes down to competing schools of thought on international relations, liberalism vs. realism. Realism is the belief that states will be in conflict and will prefer to maximize gains relative to one another, while liberalism is a belief in states cooperating and preferring to maximize overall gains. The point of understanding their points of contestation and points of convergence is to help form an understanding and to predict how countries behave towards one another (Aydin & Özen, 2010).

### **3. Westernization versus Modernization**

An assumption that Fukuyama makes is that credit to the success of liberal democracy is rooted in the human desire to achieve equality. Historically, or in the context of Hegel’s time, this meant that the elimination of a traditional monarchy and aristocracy opened the door for upward mobility and economic success for all (Manikoth et al., 2011). In contemporary society, this is the emergence of a middle class, albeit, his theory claims to be global but in practice an emergence of a middle class is only seen in the West and if we examine the context of the American economy, exclusively, this middle class was short lived. As Thomas Piketty argues in *Capital in the Twenty-First Century*, free markets have not only enlarged the gap between rich and poor, but have also reduced average incomes across the developed and developing worlds. Nevertheless, he makes the assumption that everyone wants to be equal, not superior to everyone else, and when we achieve this state of equality universal peace will be accomplished.

This assumption is also in conflict with the aggressive practice of the spread of liberal democracy conducted by western governments, the U.S. in particular which achieves this through military means. Without overtly claiming to be superior, the spread of western values and democracy to other civilizations through military actions is not transposition or adoption of new ideologies by other civilizations, it is a pluralistic viewpoint that supports intervention. This assumption in practice is inherently orientalist. This is Huntington’s case and point in his rejection of Fukuyama’s initial claims. He noted that this assumption could lead to a rift between civilizations rather than foster cooperation. Fukuyama’s lens of the world through the

economic sense does little to address the complex makeup of human behaviour. Huntington throws more weight on identity, over political ideology.

These two theories converge at the nexus of modernization and westernization and what these two concepts mean. Huntington agrees with Fukuyama's observation that this paper was opened with, the world has indeed become 'modern'. Western culture has infiltrated the world diverse civilizations, however, that does not mean these civilizations are westernized (Petito, 2016). They are experiencing modernization while retaining deep rooted cultural identity and values. It is a grave mistake for the west to take the modernization of the world as a cue that values such as the western interpretation of equality, justice, rule of law and governance will just as easily be adopted or to a greater extent even work.

After the publication of Huntington's, *Clash of Civilizations*, to a degree, predicted the current rise of terrorism. Did Huntington predict 9/11 and in the context of a world post-9/11 what does Huntington and Fukuyama's theories say about modernization and westernization? Iraq's Saddam Hussein and Al Qaida's Osama Bin Laden were western educated and trained. The past decade reveals that at the reception of western education, cooperating in global trade and participating in western democratic systems does not indicate that participation has meant the adoption of values. Furthermore, to say that people who are born and bred in the west will agree with these values. If this were the case, the recruiting success of ISIL would not be as high in western countries (Neumayer & Plümper, 2009).

Huntington is right to reject the world view posited by Fukuyama. By Fukuyama's standards, modernization and westernization are one in the same (Georghiou, 2014). For some countries, the westernization of their economies and cultures would mean a step back from the modernity (Smith, 2012). Material success (modernization) makes a culture and ideology attractive to itself, and that decreases in economic and military success leads to self-doubt and crisis of identity (Huntington 1996). Therefore, both Huntington and Fukuyama agree on the concept of modernization and even agree on each other's assertion. Huntington acknowledges the global power of technological and economic modernization but stresses the fact that this development will drive a global rise of fundamentalist reaction. To further examine this notion, it could be said that this occurrence actually has led to the destabilization of democracy (Buncak, 2002). Subsequently, this prediction came true when looking at the rise and fall of stable regimes in the Middle East. Fukuyama also makes these assertions that modernization may be met with a negative reaction. Yet, it is also careful to consider the emigrants from muslim countries that have assimilated within the western context quite well (Albert, 2008). If there is an inevitable reaction for the Islamic world, what then motivates the generations of those who derive from it to merge the conflicted norms of two opposing cultures?

#### **4. World-wide acceptance or rejection of liberal democracy?**

Georghiou recognized that the question concerning the possible spread liberal democracy is most contested in the Middle East. He makes not that prior to the Arab Spring in 2011, among the 47 countries with a Muslim majority, only one quarter are electoral democracies – and none of the core Arabic-speaking societies fall into this category (Georghiou, 2013). The Freedom House study, *Freedom in the World*, found that non-Islamic countries are more than three times likely to be democratic than an Islamic state. If Fukuyama's theory holds, why has democracy remain non popular in the Middle East? Huntington's response would be the Muslim world lacks the core political values that gave birth to the representative democracy in Western Civilization (Georghiou, 2014). Inglehart and Norris support this claim (Inglehart & Norris,

2003). Huntington argues that “ideas of individualism, liberalism, constitutionalism, human rights, equality, liberty, the rule of law, democracy, free markets, (and) the separation of church and state” often have little resonance outside the West. Fukuyama says that although this may be true, if people were given the option of having democracy in these states then democratic institutions would develop and prosper.

Shortly after the Arab Spring and a few weeks before the attacks in Norway in July 2011, Fukuyama altered his thesis. He admitted that there reasons to posit that liberal democracy may not be the fat of all of humanity. He observed something he called the emergence of political decay, he predicted the collapse of democratic institutions and was astounded by the unique case of china.

Another aspect of this is to look at the strategic development of post-communist countries, particularly in the eastern block. Croatia was examined by Mislav Kukoč, in 1995 long before its accession to the EU. His findings were that Croatia’s motivation to join the West to participate in economic cooperation and liberal order is nether fully explained by Huntington or Fukuyama’s theory. The same could be said for other post-Soviet countries that now face cultural and social challenges when trying to align interests with the current state of the European Union (Kukoč, 1995), (Lazányi, 2012).

China’s “Marxist capitalism” suggests you can have wealth without freedom. Originally, Fukuyama claimed the success of illiberal societies such as China is nothing more than a temporary setback. Now, Fukuyama views China as evidence that the threat to liberal democracy is the potential rise of regimes resembling China – a strong authoritarian state, without much political participation by its citizens. Ultimately, a regime with efficient capitalism, but without democracy (Enfu & Chang'an, 2016).

China is not the only challenge to liberal democracies, countries hardest hit by the crises—such as in several European countries—voters have turned away from precisely that conception of liberalism that Fukuyama believed they would embrace with open arms. In the past decade, we have seen the rise of what Viktor Orbán has termed ‘illiberal democracy’. The likes of Viktor Orbán and for example the Polish leadership to this day prove that not all societies are mobilizing under a liberal democratic government and may actually redefining the concept (Mueller, 2016). The drawbacks and causalities of capitalism have turned democracy against liberalism.

Mass surveillance, violent suppression of protests, from the 2005 French riots to the 2011 England riots, attacks on minorities, expanding military industrial complex, etc. As a result of a post-9/11 world, Western democracies, have the freedom to choose all sorts of products or lifestyles, but has compromised the guarantee of personal and political freedom (Horvat, 2016). Yet, Fukuyama still insists that there is no serious threat his hypothesis, after all mass protests still occur in the forms of the Occupy Movement, the Rise of Bernie Sanders and pockets of civil organizations demanding more transparency and political change.

## 5. Conclusion

Fredric Jameson put it succinctly, "today it is easier to imagine the end of the world, than to imagine the end of capitalism". In this regard, Fukuyama’s claim remains true, although his theory has been contested in the face of global developments, despite the financial crisis, and challenges that have characterized present international relations, capitalisms is a prime motivator for global relations. Despite his alteration of his theory, he stands firm that liberal

democracy will eventually triumph in the world even within the Muslim world. He does not take the rise of ISIS and religious fundamentalism as a significant challenge as much as the global trend towards illiberal democracy.

Huntington, on the other hand acknowledges that there still is a large amount of democratic regimes and cooperation amongst civilizations. However at the time of Georgiou's paper, countries like Hungary and Poland were considered to be unsafe in terms of being liberal democracies, now that are the most at risk, and Russia was not experiencing as tense of a relationship as it is now with NATO.

It can be stated that there are areas of convergence between these two theoretical paradigms and they continue to develop in the face of global developments. Ultimately, "neither Huntington nor Fukuyama tells us what we need to know in order to synthesize their perspectives - or to finally decide between them. The books are at once complementary and irreconcilable" (Kurtz, 2002). However, it appears the Huntington still has more evidence to support his claims than Fukuyama. In regard to the areas of convergence identified in this article, the two authors agree in terms of the spread of modernity, even predicting a negative reaction from traditional societies like the rise of Islamic fundamentalism. However, Fukuyama is far more optimistic about its impact in more traditional societies than Huntington. In regard to liberal democracy, both agree that democratic institutions have prevailed. Huntington questions the strength of those institutions while Fukuyama fearlessly believes in them.

To conclude, the "question of our time may now be whether Huntington's culture clash or Fukuyama's *pax democratia* is the world's most plausible future" (Kurtz, 2002).

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## POSSIBLE IMPLEMENTATIONS OF PREDICTION MODELS FOR FORMING GLOBAL COOPERATION RELATIONS

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**Abstract.** Cooperation is a global phenomenon. It is present everywhere, all over the world, in every aspect of social, technological and economic development. The most known examples of cooperation are strategic alliances, fusions, clusters, business networks and many other groups in which two or more different companies or individuals are present. The base for the right working of cooperation is management. Cooperation management not only handles, coordinates and support the creation of relationships in global dynamic market, but also evaluates these relations. On base of this, companies can make better decision regarding the future local and global interaction in the form of cooperation. One way how to evaluate these relations is by using prediction models. By using these models companies are able to calculate whether the cooperation would be appropriate and whether it would bring an added value – the synergetic effect which is a phenomenon which would be not achieved without the mutual cooperation of two independent companies. In this paper the theoretical background of cooperation in business environment is discussed. After, indicators as well as quantitative approaches which are helpful in this procedure are presented. Finally, we suggest possible particular implementations how prediction models could be used in forming cooperation process.

**Keywords:** prediction models, cooperation, cooperation management, forecasting, financial indicators

**JEL Classification:** M10, M15, M21

### 1. Introduction

Cooperation is one of strategy opportunities in current global business environment. It can manage changes and developments in benefits. Cooperation approaches and management functions create means, with which managers and executives are able to manage the changes. It is also known as cooperation management.

Soviar et al., (2013) address global cooperation through comprehensive theory and practical review and define cooperation management as: “The cooperation management is the effective and efficient managing of relations in term of mutual operation between independent organizations whereby the main goal is to increase their competitiveness.” Laufer, (2005) fosters this definition with: cooperation management is a way of manage and development

cooperation in competitive environment. According to Zuckerman et al., (1995) partnership actions can be enhanced through association of similar partners who share a common view or provide the same kind of services. This view of cooperation management is necessary to shift from cooperation in home country's institutions to international cooperation. Landau et al., (2016) point out that competitive advantage is generated by leveraging in global environment.

However, the base for content of cooperation management is created with many terms and concepts, e.g. theoretical knowledge about cooperation (characterized by elements: altruism, reciprocity, similarity, experiences, reputation, attractiveness, loyalty, trust, interdependency, control and others), selected criteria of cooperation (know the partner, preferences, competencies, products and solutions, bargaining power, position, localisation, mission, culture, economy situation and others).

According to us cooperation is not only a way to achieve the goals or to adapt to changes in the environment. It is also a knowledge in which cognition of a cooperative environment is necessary for the proper steps leading to collaboration by several enterprises. Respectively, it comes to suitable filtration of cooperative entities. Strategic alliances may fulfil common objectives and achieve competitive advantage, be developing a symbiotic relationship between businesses in internal and external environment (Rashidirad et al., 2015).

After comprehensive research, Martin & Eisenhardt, (2002) conclude the value from global economies of scale; improvements through revenues; sharing and recombination of resources building new competition advantage. This value would be research in compliance with external measuring instruments (profitability, activity, market value and others), as well as internal measuring instruments (net current value, liquidity, transferring knowledge and others). These facts confirm the significance of the relations between external and internal environment of company in any discussion of synergy.

Similarly, Wang et al., (2010) and Ulrich, (2011) confirm our opinion that valuation is based on well-functioning cooperative management. Assumption for successful relation is achieved by positive evaluation. Regularly evaluation, for a period of time, should indicate a shift in cooperation relations which is important for strategic decisions for meeting the goals. Evaluation is carried out in areas such as: compliance with rules and responsibilities; holding deadlines or performances; gaining or expecting benefits and others. According Ye et al., (2009) static and dynamic perspective of economic network is kind of resource that affects enterprise's long term competitive advantage.

Opportunity for global cooperation environment is to quantify past, current, but mainly future relations. Prediction of future relations is the most demonstrable in financial indicators – financial prediction. Between cooperation companies it is also necessary to evaluate financial fitness. After cooperation it is the evaluation about achievements, performances and added value – the synergy effect. Negative evaluation as failure to achieve expectations can lead to termination of cooperation. On the other hand, if cooperation achieves expectation then it might be persistent or modified for actual need of both cooperation sides.

Changing market conditions, actors, capital investment, political situation and many other factors make from cooperation relations the dynamic system. It is defined for a certain period of time in defined borders. If cooperation is finished in positive way and is expected to be further cooperation in the future, future system and relations are revised according to actual market situation.



## **1.1 View of cooperation relationships across the financial indicators**

In current global business environment there exist groups of cooperating companies which map cooperation merges through financial indicators. In following text we point out few researches from other authors dealing with financial indicators and cooperation relations. Very often synergetic effect is measured through financial indicators in cooperation.

Success of FMC Corporation<sup>2</sup> is the ability to allocate capital and manage risk in various portfolios of companies through the BSC. Component of the financial objectives of BSC<sup>3</sup> is common financial measurements: added economy value and return of investment nett capital. This mutual comparative tool refers to performances of portfolio of every company in cooperation. The ability to properly allocate capital among its business cooperation units is important. Value of whole group of cooperation companies depends on the ability to operate with market capital. This capital is economically much more efficient as if each separate units operated as interdependent publicly traded company. (Kaplan & Norton, 2006) Aspiration to achieving financial synergies (through BSC) plays an active role in establishing cooperation relations in business environment.

According to Damodaran, (2005) synergy is an added value which is generated by combination of two or more companies. Synergy is effect that cannot be achieved by individuals. (Corning, 1995) It creates opportunities which otherwise would not be available to the independent operating company. Functional cooperation relations are base for synergy. Damodaran divided synergy according resources into two categories: operational and financial synergy. Operational synergy is defined as activities of combined companies and economies of scale which improve pricing power and increase growth potential. In general, it is shown as increased expected cash flow. Financial synergy is more focused on tax benefits, diversification, increasing capacity of debt and using residual cash. This kind of synergy is shown as higher cash flow and sometimes it takes form lower discount rates. According to author it is important to search for resources of synergy and also it is important to evaluate it. Synergy (as added value of cooperation companies) is necessary to be evaluated independently for each company and also, it is necessary to evaluate common value of cooperating companies.

Martin & Eisenhardt, (2002) pointed out on existence of four sources of cross-business synergies: savings from extension (cost division), market force, and inner advantages of management (inner efficiency of managing action regard the market) and recombination of processes. Authors note that this existence of the synergy provides support for existence of common value, i.e. common effects. Common strategy plays in important role in total performance of a company. The performance of these groups is not caused only by industrial structure of by summing performances of business units. Finally, cross-business synergy must be seen as value which can be predicted by financial indicators.

## **2. Indicators for Predicting Successful Cooperation Bonds**

Prediction of financial indicators is important for choosing the right business partner. Today, in the mass number of cooperation relations, it is beneficial to predict these indicators into the

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<sup>2</sup>Food Machinery Corporation - American chemical manufacturing company headquartered in Philadelphia, Pennsylvania.

<sup>3</sup>Balanced Scorecard Basics – performance measurement framework for strategic planning and management system. Originated by Robert Kaplan and David Norton.

future. Acquiring this information, a company of cooperation is able to better evaluate its current position within the cooperation and it is also able to make good strategic steps in managing these relations.

One of the ways how to choose the right partner for cooperation is to use prediction of financial indicators. Following the importance, we have chosen following indicators:

- Profitability ratios, indicators of rentability. Selected indicators: ROA – return on assets; ROE – return on equity; ROS – return on sales; ROCE – return on capital employed. The ratio of inserted sources to profits of a company is the sense of rentability in order to evaluate fruitfulness of achieving goals.
- Liquidity ratios, indicators of liquidity. Liquidity of the financial stability of the company (CR – current ratio, CPR – cash position ratio, QAR – quit asset ratio). The ability of the company to pay their bonds (solvency). Also, company indebtedness (the size of finances the company needs to pay out) is measured by this indicator

When talking about two stated indicators, it is important to note that optimal liquidity has to be ensured, i.e. the company has to have sufficient number of free assets. On the other hand, it is also important to have the highest possible rate of rentability from invested assets, i.e. assessing potential cooperation partner from the view of growth, development and solvency.

- Company cash flow – real cash flows between cash incomes and cash pay-outs in monitored period. It is the supporting tool for handling the liquidity.

It is also favourable to determine the amount of free assets which not only support liquidity but which can also be free assets for different purposes of cooperation activities.

- Capital Expenditures – these are costs of higher value such as material or information sources and hence, they are characterized as an investment. Internal changes in the organization is realized with them.
- Operational Expenditures – standard operational (non-investing) costs. These costs are used to ensure the operation, to buy sources or services of lower value.

The comparison of these two indicators provide information regarding business economy in given time period (short or long investments) and given volume (high or low investments). Resulting from this one can presume the future cost activity and volume of assets which a company needs for living.

- Market value ratios. The activity of the company in past and in future is realized with them. It is realized using dividends and price of stocks. On the other hand, total value of the company can also be an indicator from which future growth or decline can be predicted.

### **3. Suggestions of Possible Implementations of Prediction Models for Forming the Cooperation**

On base of theoretical as well as practical aspects it is necessary to divide the cooperation relationship and the decision making process about the cooperation into several phases: the decision-making process about cooperation before the cooperation has just begun, the decision-making process regarding the cooperation and its future and the decision-making process after the cooperation. Particular selected indicators are also judged according to these criteria.

In stated phases particular cooperation subjects can not only monitor these indicators but what is more, essential, they should make decision on base of them. This can be helpful in seeing some problem in the future and to prepare for unfavorable situations or to just evaluate the appropriateness and risk of the (potential) cooperation partner. Within our knowledge we have suggested four ways how to decide about cooperation process for the company management:

- The indicator of total indebtedness
- The indicator of cooperation potential
- The indicator of economic result

### 3.1 The indicator of the total indebtedness of the company

The total indebtedness of assets is dependent on the ratio of the foreign capital (liabilities) and the own capital (assets) whereby both components take part on financing the company activities. Regarding cooperation, it is necessary to monitor this indicator before cooperation (in selecting stable independent partner) as well as during the cooperation. This indicator influences the financial stability. We presume that the high ration of foreign capital makes the company instable of cooperation decisions (i.e. taking part in cooperation, results within the cooperation).

We therefore suggest to forecast the foreign capital as well as the own capital (assets) on base of time series modelling and forecasting methodologies, i.e. using Box-Jenkins approach. On base of these two components we then identify the future indebtedness of the company, i.e.

$$indebtedness_{t+1} = \frac{\hat{FC}_{t+1}}{\hat{A}_{t+1}} \quad (1)$$

where

$$\hat{FC}_{t+1} = \sum_{i=1}^p \phi_i y_{t-i} + \sum_{j=0}^q \theta_j \varepsilon_{t-j} \quad (2)$$

is the prediction of the foreign capital based on the Box-Jenkins methodology, and

$$\hat{A}_{t+1} = \sum_{i=1}^p \phi_i y_{t-i} + \sum_{j=0}^q \theta_j \varepsilon_{t-j} \quad (3)$$

is the prediction of assets based on the Box-Jenkins methodology.

On base of the estimated prediction of the indebtedness of the company according to Box-Jenkins approach we suggest the following procedure. Theory indicates that the company is instable if it is financed almost exclusively using the foreign capital, we therefore suggest that if the prediction of indebtedness is bigger than 0.5, the company then fulfils the assumption of instability and we do not recommend to make this cooperation relation. If it is the current cooperation relationship (we find it out during the cooperation) another decision-making is necessary regarding future cooperation.

### 3.2 The indicator of cooperation potential

The cooperation potential determines properties and the state of the company for the needs of future potential cooperation or evaluating the current cooperation. We suggest that cooperation potential could be estimated on base of linear regression model. The cooperation potential in the case we define as the difference between the assets and liabilities which are dependent on five factors, i.e.

$$coop\_potential = b_0 + b_1 empl + b_2 prof + b_3 rev + b_4 vol + b_5 FK \quad (4)$$

where *empl* is number of employees, *prof* is the profit of the company, *rev* is the revenue of the company, *vol* is the volume of production and *FK* is the size of foreign capital. The values of independent variables are estimated on base of Box-Jenkins methodology for time series forecasting. After having these estimates, it is no problem to count the prediction of the cooperation potential in the future year.

If the result is bigger than zero, the condition for making the cooperation is met, however, it is also necessary to bear in mind the size of cooperation potential regarding planned goals of cooperation. Otherwise, if the result is less than zero, the company has not resources for making the cooperation bond and we suggest no to enter cooperation with that company.

### 3.3 The indicator of the trading income

The net profit or net loss, generally referred to as the trading income gives us the view on financial side of the company. This indicator is one of the basic indicators of the company itself as the profit is also important when deciding about future cooperation. We define it in a similar way than the indicator of indebtedness, i.e.

$$trading\_income_{t+1} = R_{t+1} - C_{t+1} \quad (5)$$

where

$$\hat{R}_{t+1} = \sum_{i=1}^p \phi_i y_{t-i} + \sum_{j=0}^q \theta_j \varepsilon_{t-j} \quad (6)$$

is the prediction of the revenues based on the Box-Jenkins methodology, and

$$\hat{C}_{t+1} = \sum_{i=1}^p \phi_i y_{t-i} + \sum_{j=0}^q \theta_j \varepsilon_{t-j} \quad (7)$$

is the prediction of costs based on the Box-Jenkins methodology.

On base of the estimated prediction of the indebtedness of the company according to Box-Jenkins approach we suggest the following procedure. We suggest that if the prediction of indebtedness is bigger than 0, we do recommend to make this cooperation relation. If it is the current cooperation relationship (we find it out during the cooperation) another decision-making is necessary regarding future cooperation. If the prediction of indebtedness is less than 0, we do not recommend to make this cooperation relation.

## 4. Conclusion

First step in good functioning cooperation environment is the filtration of business elements which are present in it. Every individual, group, company or organization is able to create alliances, partnerships, cooperation, i.e. some sort of cooperation in order to handle better the current market conditions and in order to gain synergic effect such as higher financial evaluation, increment in profit, rise of free allocations for investing. We suggest that, before the beginning of cooperation relationship, managers should evaluate and forecast financial indicators of a company using analytical tools in order to form potential profitable cooperation relationships between economic subjects.

To be able to predict indicators of potential future cooperation is the base for managing cooperation environment. We believe that using predictions of financial indicators is a great tool in determining potential successful cooperation relationships. Due to this reason in the future we would like to elaborate this concept, we would like to use and implement our suggested approaches in forecasting financial indicators using techniques of machine learning and artificial neural networks, and to improve the process of forming cooperation relations in management.

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## INNOVATIVE FORMS OF ONLINE LEARNING WITHIN THE EDUCATION FIELD

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**Abstract.** This paper deals with the innovative forms of online learning enabling integration of the concepts of technical development and building a learning organization (knowledge society). Rapid dissemination of information has strategic importance for each organization. Nowadays, the basic pillar of the global knowledge society is education, training, science and research, innovation supported with information technology and digitalization. Due to globalization, more and more multinational teams use the multimedia education in combination with contact learning. The article describes advantages and disadvantages of both of the concepts from psychological and practical point of view. The traditional methods, on one hand provide the immediate interaction between the teacher and learner, the online learning however is more comfortable in terms of time scheduling, commuting and other expenses. The disadvantages of contact learning are seen in exposing shy people to public presentation and possible fail. The online methods can also deepen the addiction to computers and prolong the time spent on computer. In addition, the paper discusses training modules, which are aimed at so-called Blended learning, and are implemented as a part of the project “School at the Touch Academy”. One of the objectives of the project is to acquire new skills and a change in traditional teaching model on innovative forms of online learning.

**Keywords:** blended learning, e-learning, learning process, e-materials, face-to-face

**JEL Classification:** D83, I25

### 1. Introduction

Personality development of a student at school is largely influenced by the methods and procedures of breeding and education as well as organizational forms of teaching that are closely related to them. One of the key function of teaching methods is to regulate students' learning in such way, that it resulted in acquired knowledge, competencies and skills relevant to teaching objectives. Control of students' learning and providing space for a separate activity are dependent on the teaching method. Contemporary modern times calls for a modern school, modern methods and forms of teaching. The modern concept of teaching method is associated with a new view of the educational process, reflecting any changes that passes current civilization, it is about changing perspectives, about new contexts and resulting from this new culture of learning.

Rightly are criticized static methods of learning and memorizing knowledge, as well as methods, inadequate to the individual load of child. The usage of advanced teaching methods is not the way out of the bad situation in educational system, the method is only one part of the overall education system, in which the overriding objective is the status personality, conditionality education of economic, social and cultural factors. Thanks to the module blended learning, the learning process is a modern interactive form of teaching.

Programs and functions of e-learning are assembled so, that each user is being aware to work with them quickly and they are adapted in a form to suit the needs of flexible learning. In addition, easy administration of materials and content without special knowledge of programming functions is guaranteed. Further, in such an architecture of teaching subject is possible to create so-called knowledge networks that connect external knowledge using so-called lines, among which students can choose the topics, which helps them quickly learn about the network structure. Unlimited access means the possibility of access from all the places where the computer and internet is available.

Place for the virtual learning contributes to the reduction and elimination of the classic face-to-face classroom teaching. Such a dynamic form of teaching enables the complex of required teaching elements of the so-called virtual classroom. Time flexibility and individual pace of learning is facilitated, especially for online access to the material. Except mentioned, this feature supports the growth of individuality and the transition from unstable forms of classical learning to the stability of learning. Students have no opportunity to explain away that they were missing during lessons. Cost savings in terms of administration and increasing the efficiency of learning, is achieved based on online access to various materials provided by the teacher. Strengthen own responsibility for provided the multimedia content can be achieved by using different forms of learning. There is possibility to utilize a form of processed work results through written, audio or video format. With these media, a learning process becomes more interesting and avoids monotony in the learning process.

Zhang et al. (2015) indicate that utilizing these characteristics of social networks in the process of knowledge sharing will ensure creating organizational learning, simplify knowledge management and support e-learning in terms of social learning processes (Zhang, et al., 2013).

Another factor to be considered in improving knowledge sharing among virtual communities is that the community improves the perception of learning among members. Therefore, structuring is an important element in designing the content to be developed for e-learning environment (Yilmaz, 2016).

In many institutions, the introduction of technology into the classroom presents several obstacles to overcome. Chief among these is that adoption of any new technology – no matter how transparent or easy to use it may be – requires changed behaviors. And every educational institution has its own unique DNA leading to its degree of willingness to embrace new technologies.(Greenberg, 2012)

## **2. Reasons for use of e-learning**

Use of the modern information and communication technologies are increasingly becoming the current trend in the context of teaching at many schools in Slovakia. The main reason for using e-learning is the unconventional use of 24 hours, 7 days a week continuously throughout the year. Improved quality of individual tutorials online learning materials, facility of use features, quick access to the new information in the context of practical exercises and flexible



organization in its own developed materials also include to the further advantages of this training. In addition, students have the opportunity for unbundled access to the materials offered by a teacher without being bound to a certain place and gives them the possibility mainly to determine their own pace for learning. E-learning, in the broad sense reflects learning in which the student uses information via a computer or any other electronic means. Currently, however, we meet more frequently at schools with a combined form of a standard education (attendance, presentations, face-to-face) with electronic support of teaching, i.e. e-learning.

Mixed or combined classes so-called blended learning is a form of innovative teaching. In contrast to the conventional, or more precisely frontal teaching, where the teacher gives students finished knowledge, during the mixed teaching there is an active involvement of students in their acquisition. The essence of such teaching is that the teacher puts students with the task, the solution of which must pupil are tackling alone or in a team to get gather information and compile them and supervised by the teacher correctly interpreted. The positives of blended learning, except acquiring new knowledge via experiential way, include the possibility of an individual approach to curriculum, learning through peer education, and the real relations between the objects but also the building of the responsibility for the team members.

### **3. Innovative forms of education**

Blended learning means a combination of different forms of learning in the educational process. This form incorporates the best of traditional and modern forms of education. Blended learning (Figure 1) significantly increases the efficiency of education, by combining personal involvement in teaching for example mandatory workshops, seminars and self-study with the support of learning through electronic channels -e-learning and other information systems. Direct online communication and feedback from the teacher respectively through automatic settings of e-learning environment that allows better control of the results of students' work. Statistical evaluation and interpretation of online learning, providing feedback not only for students about the results of the work done, but also for teachers, who can then enhanced by providing online content for their future education. E-learning is so well developed form of education that supports and enhances learning opportunities expertise and social skills and the ability of systematic and critical analysis of the various processes involving the ability of the individual team work, as well as systematic and long-term processing the problems related to the subject of education.

According to Kwon, Hong, and Laffey development of individual cognition improves knowledge sharing. Therefore, in order to improve knowledge sharing in the community it is necessary to improve their self-efficacy in the cognitive applications sub-scale of academic self-efficacy (ASE). (Kwon, Hong, & Laffey, 2013), In an e-learning environment, task complexity might also directly (positively or negatively) affect knowledge sharing. As the task complexity increases, the members might be engaged in more knowledge sharing in order to find assistance. However, as of the beginning, including very complex activities could cause to the emergence of learned helplessness feelings (Lee et. al., 2015). Therefore, while preparing activities/tasks they could be organized in a manner from simple to complex and from easy to difficult (Chae & Seo, 2015).

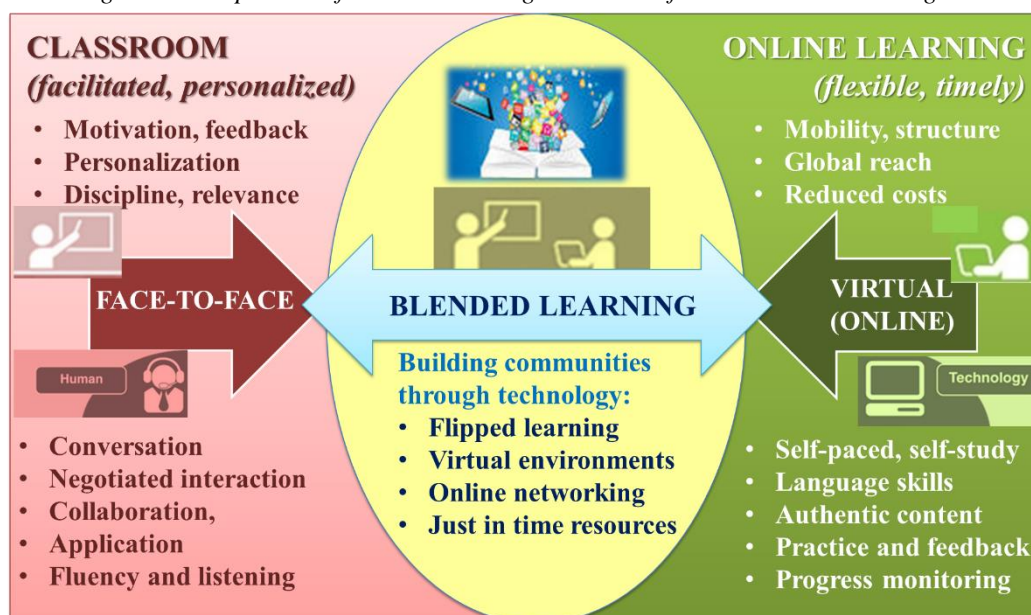
In the face with intense competition, increasing creativity and innovation emerge as important strategies for an organization's performance and survival (Lopez-Cabrales, et. al, 2009). Creativity has received considerable attention from both researchers and practitioners as

a method by which firms' competitiveness can be enhanced dramatically (Shalley, et. al, 2004), (Zhou & George, 2001).

E-learning environments, which are highly demanded in computer science, require understanding human behaviors. Since e-learning environments usually lack the necessary attractions and the dynamic characteristics of the face-to-face learning setups, developers need to concentrate on designing interactive user interfaces based on user's cognitive factors. Considering personality, emotions, and individual differences in e-learning systems, improves learning and increases learners' motivation, joy, and involvement (Fatahi, Moradi, & Kashani-Vahid, 2016), (Latham, et. al., 2012).

Blended learning is a combination of online and face-to-face learning and is increasingly of interest for use in undergraduate education (Morton et al., 2016). Learning is a complex endeavour that necessitates a synergy of sustained cognitive, behavioural, and affective engagement (Fryer & Bovee, 2016), (Reeve, 2012).

Figure 1: Comparison of Blended learning vs. Face-to-face and Online learning



Source: own construction

E-learning contributes to brokering exemplary approach with the current social perspectives, used in science and in the practice. Integrated form of learning contributes to the creation and acquisition of the necessary competences, which are nowadays required to assert itself in a highly competitive market. E-materials are part of a new trend in teaching blended learning, i.e. the combined forms of teaching, linking the physical and virtual sources. Besides the classical presenting of learning materials at elementary, middle or high school students have access to electronic materials such as videos, presentations, electronic exercises, electronic worksheets, teaching software and so on. This innovative form of teaching frequently used web applications, accessible only via a computer, laptop, but also through tablets and smartphones.

The existence of tablets, smartphones and netbooks increased in proportion to the cost of acquisition. Today, almost every pupil or student own a smartphone (often tablets as well) with the Internet connection, allowing the use of individual access to electronic materials. Teachers can exploit the potential of modern information and communication technologies in teaching. E-learning is a form of transparent management of teaching materials. (Bolliger & Wasilik, 2009).

Via e-learning it is able to already replace the classical process of the classroom (ie. A face-to-face teaching), to which we were accustomed to now. This form (online or offline) of teaching is called virtual education. Contrary to the traditional face-to-face learning, this form of teaching and learning is only supported by e-learning.

Within this virtual form of teaching, teachers can provide their students all the documents, feedbacks, knowledge, etc. in electronic format, which is adapted to e-learning needs. Teacher even knows how to divide students to various working groups (ie. Working groups), write them marks set the deadlines, works and other materials to run online conference, etc. via e-learning assign. One of the other options, respectively forms of learning is called combined (integrated) form of teaching and learning, which combines (integrates) the classical form of teaching (face-to-face) and a form of online education. The advantages of using e-learning are shown in Figure 2. E-learning can take place synchronous or asynchronous. Both forms are interactive, provided online, using the control system of education:

- Synchronous e-learning is a teaching of several pupils, students at the same time anywhere in the world from any computer with an Internet connection and with installed web browser in a real pre-arranged time in the presence of the teacher, and communication with the teacher and others takes place over the Internet (chat, forums, discussions, conferences) and educational process uses materials such as presentations, video, tests in a virtual learning environment,
- Asynchronous e-learning training prefers a different number of pupils or students from anywhere at any time, (possibility of individual choice), without the presence of a tutor, communication takes place via e-mail, study materials and announcements are exposed in the virtual learning environment. (Abrami et al., 2011).

Figure 2: Benefits of E-learning



Source: own construction

E-learning has entered the instruction as well as the corporate world in a main way and it also completes the traditional delivery styles. It has enabled the traditional educational patterns

like distance learning (Harandi, 2015), (Clegg, et. al., 2002). Traditionally e-learning in the higher education model, i.e. at university, has been engaged to: (1) rises visibility of university, (2) stretch the educational suggestion, and (3) as learning “virtualization”. Furthermore e-learning is a crucial device that professors can use to enhance students' motivation and education.

The reasons for the implementation of e-learning in the teaching process are following:

- the need for more extensive education, which may be obtained by classical teaching
- the need for faster and higher quality information-gathering
- the possibility of increasing the number of students without a demands to expand teaching capacity
- an active role of student in the educational process
- individual teaching timetable
- the need for simple updating of existing educational materials
- the possibility of using the new communication forms
- the need for better financial management. (Tatli, 2009).

Blended learning is by the methodological, medial-didactic and medial-pedagogic aspects not only conduit of information, but also knowledge, so we talk about integrated form of processing and sharing of knowledge. It is a form of education that is ideal for very busy participants, who want to combine for example education with the work, because this form of learning offers many advantages.

The most important advantages of the blended learning are:

- independence – the ability to start the education at any time during the year,
- flexibility – the possibility to study e-learning environment anytime and anywhere by a computer connected to the internet,
- practice - exchange of the experience from practice in the personal meetings of participants and tutors,
- own pace - education according to their own pace and their time opportunity,
- support – from tutors through the consultations, chat and e-mail,
- resources - unlimited access to learning materials -tests, videos, presentations, compendia and others,
- independence - the possibility of determining the time of their education according to their individual needs for independence from the group. (Bourne et al., 2005).

Current modern form of education is represented by the so-called e-learning or blended learning. Nowadays the e-learning environment is accessible from virtually anywhere and anywhere using a computer with an Internet connection and offers users a large amount of study materials of the different forms, requiring more or less interaction. This environment, sometimes performs the role of social networks in which the participants can use a chat for discussions among themselves or with the tutor. There is a profile of user where they have an access to theirs study results and review of former study and the possibility of online submission of seminar papers and other works, in consultation with the tutors and alike. Although the benefits of e-learning indisputable, the traditional methods in the presence of participants and tutors are verified by centuries and are an unmistakable part of quality educational process. A clear advantage of attendance education (lectures, workshops, seminars or webinars) are ongoing discussions, forwarding a personal experience between the tutor and the participants themselves, joint problem solving, finding answers and more.

## 4. Conclusion

Each innovative forms of teaching takes time to learn the work with the system, with its application could occur defects of operation of the educational system, the teaching more students in real time is difficult for the teacher and it is necessary to have an adequate computer skills and the Internet. It may also arise excessive comfort of pupils and students that can support computer addiction and cause the rise of health problems due to lack of physical activity, lack of verbal and nonverbal communication can lead to misunderstandings, lack of understanding of the curriculum and the like. On the other hand, precisely the modern innovative technologies provide for pupils, students and teachers a unique opportunity for new, up to date and attractive individual learning in the context of a personal learning environment.

E-learning significantly reduces the training costs. It saves costs of individual students for signing up for a course (which must be so high that the pay room, lecturer and make a profit for the organizer) and transport to the place of teaching. For schools and e-learning companies it means saving on organizational costs such as hire training room, ensuring lecturers and snacks, not to mention the disruption of workflow. The ratio of information, capabilities and capacity on-line training courses to the upfront costs is not really negligible. The successful completion of an online course helps to build self-esteem and confidence in their own strength and intelligence of individual and it supports the passion for further developing and take responsibility for their own learning. E-learning supports the awareness of the students that they are not educating just because they have to but because they want to learn. Especially for those who do not feel like studying and they do not like giving presentation in front of the others, the e-learning is appropriate. The E-learning eliminates the embarrassment of failure in front of the group. How many times a student needs to pass a teaching material, as long as it takes until he understands it, how much they are able to learn, it remains only a personal choice, its ability or inability to understand. Also, the pressure on the quality of educational process in corporate environment and changing requirements to underpin the key corporate know-how, the e-learning can be adapted simply and efficiently.

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## ASPIRATIONS OF UNDERGRADUATES IN WORKING LIFE AND INTENTION TO DO BUSINESS

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**Abstract.** High unemployment among young people in the global labour market is the economic and social problem faced by firms in most EU countries, while entering the global economically active life is in a number of ways an important milestone in the lives of young people. Slovak labour market is not able at present to create and offer enough job opportunities, thus the issue of dealing with unemployment is becoming ever more urgent. This article offers insight into one possible solution to unemployment - entrepreneurship. The issues in question are in the research area presented by the data characterizing the aspirations of students (economic study programs of higher education 2nd level at The Technical University in Kosice) in the field of employment and entrepreneurship. Acquired research findings provide a deeper insight into the planning employment after graduation, factors critical to getting a job, expectations of obtaining employment in the field and they create conditions for further empirical elaboration of themes with a view to establish an higher education in favor of self-employment and to develop global entrepreneurial skills. In the process of higher education the need to accent entrepreneurship education for further professional growth and the applicability of the world labor market is increasing. Department of Social Sciences by addressing research projects KEGA MŠ SR (Education of students for the needs of the global labor market) has decided to educate and prepare students for the needs of practice and the current creative international market.

**Keywords:** students, labor market, unemployment, employment, entrepreneurship

**JEL Classification:** I2

### 1. Introduction

Problém nezamestnanosti mladých ľudí nie je ničím novým. Nezamestnanosť mladých ľudí je potrebné chápať v súvislosti s globalizáciou, so zvýšením flexibility trhu práce, rozšírením vyššieho vzdelávania, nesúlalom medzi zručnosťami a kvalifikáciou, rozsiahla, selektívnou a diverzifikovanou migráciou mladých ľudí, rodinným dedičstvom dlhodobej nezamestnanosti. Pochopenie nezamestnanosti mládeže v spoločnosti prechádzajúcou istou modernizáciou si vyžaduje holistický prístup (Hes & Hesová, 2015, s. 214), ktorý kombinuje analýzu zmien v ekonomickej oblasti okolo flexibility trhu práce, dosiahnutia zručností a dopytom zamestnávateľov, rovnako ako pochopenie potreby celoživotného vzdelávania, ktoré ovplyvňujú stále polarizované trajektórie pre mladých ľudí (O'Reilly, J. at al., 2015). Čím dlhšie je časové obdobie nezamestnanosti absolventa, tým viac poškodzujú jeho budúce



vyhliadky na trhu práce (Alpfält, 2011, s. 1-49). Čierny (2010) hovorí, že existujú dve kategórie ľudí, tí ktorí ťažia z globalizácie a nadnárodne podnikajú, a tí ktorí pociťujú vplyv globalizácie cez nezamestnanosť.

## 2. Podnikaním proti nezamestnanosti

Udalosti posledných niekoľkých rokov dramaticky zhoršujú percentuálny podiel nezamestnaných v celej Európe (ide asi o 5,6 miliónov mladých ľudí). V Európe 74 % poskytovateľov vzdelávania je presvedčených o tom, že len 38 % absolventov je pripravených na prácu a s týmto názorom súhlasí 35 % zamestnávateľov. Zamestnávatelia sú nespokojní s zručnosťami žiadateľov: 27 % uviedlo, že im zostáva voľné pracovné miesto, pretože nemohli nájsť nikoho so správnymi zručnosťami. Jedna tretina uviedla, že nedostatok zručností absolventov im spôsobuje veľké obchodné problémy, vo forme nákladov, kvality alebo času. (Mourshed et al., 2014). Firemné prieskumy ukazujú, že podnikatelia pravidelne uvádzajú nedostatok zručností ako významné obmedzenie pri výbere absolventov na trhu práce (Nabila & Benhassine, 2003). To súvisí s tvrdením, že viac než kapitálová sila a technologické schopnosti podniku sú rozhodujúcim činiteľom podnikateľskej úspešnosti práve znalosti, zručnosti a schopnosti zamestnancov spoločnosti (Blašková & Hitka, 2011, s. 21). Pri pohľade na slovenský trh práce možno konštatovať, že vysoký podiel z nezamestnaných tvoria práve absolventi vysokých škôl s nedostatkom praxe a s chýbajúcimi pracovnými návykmi. Študenti počas štúdia, ba ani ako čerství absolventi, nemajú príliš jasno v odpovedi na otázku, čo budú robiť po vysokej škole a čím sa budú živiť. Na rezervy v príprave na trh práce poukazuje nielen podniková sféra, najmä priemysel a služby (Cruz et al., 2009). Podľa nej vysoké školy nepripravujú študentov dostatočne na potreby praxe, výučba je teoretická a zaošáva za reálnym životom. Systém vzdelávania, a najmä učebné osnovy, nie sú dostatočne zamerané na podnikanie a neposkytujú základné zručnosti, ktoré podnikatelia potrebujú. V pracovnom programe Vzdelávanie a odborná príprava 2020 jedným zo štyroch strategických cieľov je posilnenie inovatívnosti a podnikania na všetkých úrovniach vzdelávania a odbornej prípravy. Záujem mladých ľudí o kariéru podnikateľa v posledných rokoch na Slovensku síce rastie, no napriek tomuto zlepšeniu stále patríme na chvost krajín Európskej únie. Výsledky prieskumu Eurobarometer pre rok 2010 (Eurobarometer, 2010), zameraného na podnikanie, jeho rozvoj a motiváciu ľudí v otázke rozhodnutia byť samostatne zárobkovo činnou osobou alebo zamestnancom sa v porovnaní s rokom 2007 nezmenili. 65 % Slovákov chce byť radšej zamestnancami a ako hlavné dôvody tejto skutočnosti uviedli pravidelné príjmy, istotu zamestnania a stabilný pracovný čas. Podľa TASR (2013) až 76 % Slovákov považuje možnosť stať sa samostatne zárobkovo-činnou osobou v najbližších piatich rokoch ako nevhodnú možnosť. Nedostatok štartovacieho kapitálu, málo skúseností, vedomostí, ale aj odborných kontaktov, to sú hlavné dôvody, prečo sa mladí ľudia boja začať s podnikaním. Je dôležité, aby sa nadaní ľudia hneď po absolvovaní vysokej školy sa uplatnili na trhu práce a rozvíjali našu ekonomiku. V kontexte európskej viackultúrnej a globalizovanej spoločnosti a ekonomiky problémy "podnikateľských kompetencií" boli riešené predovšetkým vo vzťahu k vzdelávaciemu systému (Sondari, 2014, s. 44-53, Ahmed et al., 2010, Van Gelderen, 2010; Svitačová, 2014). Je nutné vytvoriť na vysokých školách priaznivú klímu pre podnikanie založené na integrovanom prístupe, ktorého cieľom je nielen zmena myslenia, ale i zlepšovanie kompetencií „absolventov – Európanov“ (Hynes & Richardson, 2007) pre zvládnutie start-upov doma i v zahraničí. Katedra spoločenských vied Technickej univerzity v Košiciach sa stala silným stúpencom prípravy študentov na trh práce a podnikateľského vzdelávania. Realizovaný projekt so zameraním na výskum a edukáciu rozvoja podnikateľských zručností na globálnom



trhu práce poskytne vysokoškolačkom príležitosť k nácviku praktických zručností a získaniu podnikateľských znalostí potrebných pre spustenie úspešnej kariéry.

### 3. Metodológia výskumu

Skvalitniť prípravu študentov pre podnikateľskú činnosť predpokladalo zostrojiť merací nástroj, ktorým by sme získali širokospektrálne údaje u študentov Technickej univerzity v Košiciach (TUKE). Dotazníkom sme chceli zmapovať predstavy a očakávania študentov 2. stupňa magisterského, či inžinierskeho štúdia, ohľadom faktorov, ktoré sú rozhodujúce pre získanie zamestnania. Výskum bola zameraný aj na mapovanie očakávaní a postojov ohľadom plánovania budúceho zamestnania hlavne v odboroch, na ktoré sa na VŠ pripravujú. Zistené údaje nám poskytli obraz štartovacieho stavu študentov TUKE, ktorý nám umožnil pripravovať cielenejší obsah nového predmetu *Základy podnikateľských zručností pre neekonómov* a ďalšej nadstavby, prípravy ďalšej učebnice, ktorú plánujeme ako jeden z výstupov projektu Kega 031TUKE-4/201 *Edukácia vysokoškolačkov technického zamerania pre potreby globálneho trhu práce*.

V dotazníku sa respondenti na škále 1. *nesúhlasím*, 2. *skôr nesúhlasím*, 3. *rovnako súhlasím ako nesúhlasím*, 4. *skôr súhlasím*, 5. *súhlasím*, vyjadrovali k hlavným faktorom rozhodujúcim pre budúcu zamestnanosť. Niektoré položky boli bipolárne.

#### 3.1 Charakteristika súboru

Prieskum sme realizovali na šiestich fakultách Technickej univerzity v Košiciach v magisterskom a v inžinierskom stupni štúdia. Respondentmi prieskumu boli študenti prvého a druhého ročníka inžinierskeho štúdia. Výber respondentov bol zámerný. Náhodný výber bol v tom, že dotazníky vyplňovali študenti, ktorí bolo v čase zberu dát na výučbe. Reprezentatívnu vzorku tvorilo 128 študentov v magisterskom, alebo inžinierskom stupni.

V uvádzaných výsledkoch sme sledovali hlavne kognitívne a konatívne charakteristiky budúcich zamestnancov tak, ako ich uviedli študenti nášho výskumného súboru. Časť študentov v 2. stupni VŠ štúdia už má skúsenosť so zamestnaním v rôznych formách zamestnateľnosti – 10% už podnikalo; 4% založili neziskovú organizáciu; 69,50% brigádovalo; 15,90% už pracovalo ako zamestnanci v trvalom pracovnom pomere. Preto predpokladáme, že odpovede študentov sú viac hodnoverné, opierajú sa o vlastnú skúsenosť, ktoré už nadobudli v ich pracovnom prostredí.

#### 3.2 Interpretačná časť

Vzhľadom na množstvo získaných údajov nie je možné v plnom rozsahu uviesť všetky relevantné údaje. Z nich sa pokúsime vybrať tie, ktoré najviac, podľa nášho názoru, korešpondujú s problematikou zamestnanosti. Aj tieto uvádzané údaje sú skôr popisné; ich význam pre nás spočíval v získaní “počiatočného stavu” v pilotnom prieskume očakávaní, skúseností študentov ohľadom ich budúcej zamestnanosti. Poskytol nám cenné údaje, ktoré sme následne využili v edukačnom procese a pri cielenejšej príprave učebnice *Základy podnikania pre neekonómov*.

Rovnako rozsah príspevku nám neumožňuje uviesť komparatívne údaje zo zistení iných autorov. Ich prínos vidíme v poznávaní aktuálneho stavu u študentov VŠ štúdia, ktorý sa môže stať východiskovou bázou a nájsť svoje uplatnenie v ďalšom sledovaní, či možných komparáciách ako aj praktickom využití v edukačnom procese.

Table 1: Očakávate, že si zamestnanie skôr nájdete

	p
Prostredníctvom personálnych agentúr	0,539
Prostredníctvom internetovej ponuky	0,888
Prostredníctvom ponúk v tlači	0,262
Priamym oslovením zamestnávateľov	0,535
Prostredníctvom známych	0,387

Source: Autorky

Zaujímalo nás aj porovnanie výsledkov medzi študentmi v 1. a 2. stupni štúdia. Výsledky testovania rozdielov medzi priermi t - testom nepriniesli štatisticky významné rozdiely medzi študentmi v bakalárskom a magisterskom/inžinierskom type štúdia v ich očakávaniach toho, akým spôsobom skôr získajú zamestnanie. AM u študentov inžinierskeho štúdia v očakávaní, že sa zamestnanie získajú *prostredníctvom personálnych agentúr* má hodnotu 2,49, SD = 1,12 ( $t = -0,615$ ,  $p = 0,539$ ), nemôžeme odmietnuť nulovú hypotézu. AM u študentov inžinierskeho štúdia, ktorí očakávajú, že zamestnanie skôr získajú *prostredníctvom internetu* má hodnotu 3,43, SD = 1,05 ( $t = 0,141$ ,  $p = 0,888$ ), nemôžeme odmietnuť nulovú hypotézu. AM u študentov inžinierskeho štúdia v očakávaní, že zamestnanie získajú *prostredníctvom ponúk v tlači* má hodnotu 2,61, SD = 1,09 ( $t = 1,123$ ,  $p = 0,262$ ), nemôžeme odmietnuť nulovú hypotézu. AM u študentov inžinierskeho štúdia v očakávaní, že zamestnanie získajú *priamym oslovením zamestnávateľov* má hodnotu 3,65, SD = 1,18 ( $t = 0,621$ ,  $p = 0,535$ ), nemôžeme odmietnuť nulovú hypotézu. AM u študentov inžinierskeho štúdia v očakávaní, že zamestnanie získajú *prostredníctvom známych* má hodnotu 3,63, SD = 1,21 ( $t = 0,866$ ,  $p = 0,387$ ), nemôžeme odmietnuť nulovú hypotézu.

Table 2 Faktory rozhodujúce pre získanie zamestnania

	P
1 Výborné študijné výsledky	0,288
2 Vedomosti z odboru	0,333
3 Zručnosti	0,176
4 Schopnosti	0,651
5 Talent	0,533
6 Schopnosť uspokojiť potreby zamestnávateľov	0,589
7 Dostatok praxe	0,503
8 Známosti	0,247
9 Rodinné alebo príbuzenské vzťahy	0,703

Source: Autorky

*Výborné študijné výsledky* považujú študenti v magisterskom/inžinierskom type štúdia za priemerne dôležité, AM bol 2,43, SD 1,06 ( $t = -1,064$ ,  $p = 0,288$ ), nemôžeme odmietnuť nulovú hypotézu. Ani v otázke, či pre získanie sú dôležité *vedomosti z odboru* sme nezistili štatisticky významné rozdiely. AM u študentov inžinierskeho štúdia má hodnotu 3,92, SD = 0,92 ( $t = -0,969$ ,  $p = 0,333$ ), nemôžeme odmietnuť nulovú hypotézu. Za najvýznamnejší faktor študenti považujú *zručnosti*. AM u študentov inžinierskeho štúdia má hodnotu 4,11, SD = 1,04 ( $t = 1,356$ ,  $p = 0,176$ ), nemôžeme odmietnuť nulovú hypotézu. Z hľadiska získania zamestnania sú u študentov vysoko cenené *schopnosti*. AM u študentov inžinierskeho štúdia má hodnotu 4,24, SD = 0,90 ( $t = 0,453$ ,  $p = 0,651$ ), nemôžeme odmietnuť nulovú hypotézu. *Talent* považujú oba súbory v absolútnom hodnotení rovnako, v poradí dôležitosti ho zaradili na ôsme miesto - AM u študentov inžinierskeho štúdia má hodnotu 3,40, SD = 1,08 ( $t = 0,624$ ,  $p = 0,533$ ), nemôžeme odmietnuť nulovú hypotézu. Zaujímalo nás, ako študenti reflektujú pripravenosť *uspokojiť potreby zamestnávateľov*. AM u študentov inžinierskeho štúdia má hodnotu 3,84, SD = 1,02 ( $t = 0,541$ ,  $p = 0,589$ ), nemôžeme odmietnuť nulovú hypotézu.

*Dostatok praxe* považujú samotní študenti za významnú premennú: AM u študentov inžinierskeho štúdia má hodnotu 3,89, SD = 1, 22 ( $t = 0,671$ ,  $p = 0,503$ ), nemôžeme odmietnuť nulovú hypotézu. Zamestnať sa *s využitím známosti* študenti oboch súborov považujú za dôležitý prvok, AM u študentov inžinierskeho štúdia má hodnotu 3,66, SD = 1, 26 ( $t = 1,160$ ,  $p = 0,247$ ), nemôžeme odmietnuť nulovú hypotézu.

V hľadaní premenných, participujúcich na získanie zamestnania sme skúmali pomoc rodiny a príbuzenských vzťahov ako externých premenných. AM u študentov inžinierskeho štúdia má hodnotu 3,40, SD = 1, 29 ( $t = 0,381$ ,  $p = 0,703$ ), nemôžeme odmietnuť nulovú hypotézu.

Table 3: Očakávania získania zamestnania v odbore

	p
Zamestnanie získam ľahko	0,183
Zamestnanie získam po určitom úsilí	0,403
Zamestnanie získam po dlhšom hľadaní	0,061
Zamestnanie v SR nezískam	0,254
Zamestnanie získam iba v zahraničí	0,449

Source: Autorky

Zaujímalo nás aj porovnanie výsledkov medzi študentmi v 1. a 2. stupni štúdia. Výsledky testovania rozdielov medzi priemerami  $t$  - testom nepriniesli štatisticky významné rozdiely medzi študentmi v bakalárskom a magisterskom/inžinierskom type štúdia v ich očakávaniach získania zamestnania v odbore, ktorý vyštudovali. AM u študentov inžinierskeho štúdia v očakávaní, že sa *zamestnajú ľahko* má hodnotu 2,45, SD = 1,24 ( $t = -1,336$ ,  $p = 0,183$ ), nemôžeme odmietnuť nulovú hypotézu. AM u študentov inžinierskeho štúdia, ktorí očakávajú, že zamestnanie získajú *po určitom úsilí* AM má hodnotu 3,40, SD = 1,13 ( $t = -0,837$ ,  $p = 0,403$ ), nemôžeme odmietnuť nulovú hypotézu. AM u študentov inžinierskeho štúdia v očakávaní, že *zamestnanie získajú po dlhšom hľadaní*; má hodnotu 3,25, SD = 1,11 ( $t = 1,884$ ,  $p = 0,061$ ), nemôžeme odmietnuť nulovú hypotézu. AM u študentov inžinierskeho štúdia v očakávaní, že *zamestnanie nezískajú v SR*; má hodnotu 2,69, SD = 1,26 ( $t = 1,142$ ,  $p = 0,254$ ), nemôžeme odmietnuť nulovú hypotézu. AM u študentov inžinierskeho štúdia v očakávaní, že zamestnanie získajú iba v zahraničí; u študentov inžinierskeho štúdia má hodnotu 2,62, SD = 1,31 ( $t = 0,758$ ,  $p = 0,449$ ), nemôžeme odmietnuť nulovú hypotézu.

Table 4: Plánovanie zamestnania sa po skončení VŠ

	p
Súkromný sektor	<b>0,003</b>
Verejný sektor, alebo štátna správa	0,193
Chcem si založiť živnosť	0,279
Neviem	0,148

Source: Autorky

Zaujímali sme sa o plánovanie, či predstavy zamestnania sa po skončení VŠ. Napr. až 57,60% študentov inžinierskeho štúdia sa plánuje *zamestnať v súkromnom sektore*, zatiaľ čo na bakalárskom stupni je to až 74,10%. Tento rozdiel je štatisticky veľmi významný na hladine  $p < 0,001$ . *Vo verejnom sektore, alebo štátnej správe* sa chce zamestnať 48,30% bakalárov, u inžinierov je to 36,40%. ( $p = 0,385$ ). 32,10% bakalárov si *plánuje založiť živnosť*, kým u študentov inžinierskeho štúdia je to 58,30%. ( $p = 0,512$ ). Takmer tretina bakalárov *nevie, kde sa zamestná*; u študentov inžinierskeho štúdia to predstavuje až 41,70% ( $p = 0,238$ ).

Table 5: Potreba získať poznatky o podnikaní

Mám záujem o kurz	Inžinieri	p
áno	53,20%	0,147
nie	46,80%	

Source: Autorky

Výsledky záujmu o absolvovanie kurzu o podnikanie sú vložené v tabuľke č. 5. Medzi oboma skupinami sme nenašli štatisticky významné rozdiely  $p = 0,147$ .

## 4. Diskusia

Dospeli sme k záveru, že podnikateľské vzdelávanie je účinné s ohľadom na vlastné výsledky. Výskumom zdieľame spoločný názor s autormi podobných výzkumných štúdií (bližšie Lorenzo & Jones, 2006; Mwasalwiba, 2010; Souitaris at al., 2007; Fatoki & Olabanki, 2014; Lourenco at al., 2013, Matlay, 2006 a iní) a to, že podnikateľské vzdelávanie podporuje študentov v kariérnom smerovaní a dáva im motiváciu a zručnosti potrebné k podnikateľským aktivitám, v zakladaní nových firiem. Majitelia firiem by mali byť zapojení do podnikateľského vzdelávania. Podnikateľské zručnosti sa dajú naučiť. Takto ich nadobudnutý potenciál prispieva k hospodárskemu rastu, k tvorbe pracovných miest a k vlastnej zamestnanosti. Dôležité je akademikov nasmerovať na využívanie moderných trendov výučby a na sledovanie účinnosti podnikateľského vzdelávania.

## 5. Conclusion

Znižovanie nezamestnanosti a zvyšovanie záujmu o samozamestnanie je náročná úloha. Aktívne politiky trhu práce sú navrhnuté so zámerom na prípravu na podnikanie, kariérové poradenstvo (Coenjaerts et al., 2009). Účinnosť do značnej miery závisí na stave ekonomiky (O'Higgins, 2007). Podnikateľské aktivity môžu byť ideálnym nástrojom na podporu rastu ekonomiky a riešením na ekonomický problém, akým je nezamestnanosť (Sondari, 2014, s. 44-53). Vhodne zvolená vysokoškolská príprava umožní absolventom zorientovať sa na trhu práce podľa aktuálnej situácie (Dirgová, 2011) a v praxi si vhodne vybrať formu uplatnenia sa v ekonomicko-spoločenských podmienkach. Či sa vybrať sa cestou nezávislosti a voľnosti alebo ísť cestou „istoty“ v podobe zamestnania (Farrington et al., 2011). Pre zlepšenie prípravy na život v podmienkach VŠ štúdia je nevyhnutné vytvoriť na vysokých školách priaznivú klímu pre podnikateľské vzdelávanie založené na integrovanom prístupe, ktorého cieľom je nielen zmena myslenia, ale i zlepšovanie kompetencií budúcich absolventov.

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## GLOBAL ENVIRONMENT IMPACTS ON ENTERPRISE RISK MANAGEMENT

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**Abstract.** Today, more and more companies do their business globally, thereby huge competition and struggle for survival is being formed. On the one hand, globalization acts as a huge potential for providing new opportunities for business development, on the other hand, it brings new threats and risks to its very existence. This contribution is focused on enterprise risk management which should tackle the dynamic influences of the global business environment, full of changes, risks and uncertainties. The basis of this paper is proposed model of controlling activities in the enterprise risk management process. Based on the appropriate integration of enterprise information, monitoring and forecasting, managers can early identify the risks in the main areas of enterprise management and prepare adequate measures to reduce them. Knowledge of risks is an important aspect of management decision making at all levels in order to ensure the enterprise existence. The contribution includes also the results of the research focused on the most important risks in the key areas of management in enterprises operating in Slovakia. The research result is catalogue of the most important risks in enterprise which transparently indicates the importance of each risk in the key areas and contributes to better assessment of the overall risk position in enterprise. It is very important for managers to assess all the risks that may affect them continually and to take principled decisions for managing them. Managers, who are aware of the risks in their business and actively manage them, gain a competitive advantage.

**Keywords:** risk, risk factors, risks management, controlling, enterprise, environment

**JEL Classification:** M21, G32, L52

### 1. Introduction

The globalisation has been bringing vast changes into the nature of the competitive environment within the specific industries and affecting a lot of strategically important factors. It contributes to the occurrence of opportunities as well as threats arising for the industrial enterprises. The enterprises can make use of these opportunities, but they should try to avoid the negative consequences of the potential risks (Belas et al., 2014). The enterprises, which are aware of the global competition's existence early enough and have prepared an appropriate strategy, incorporating the globalisation elements, have the better conditions for making use of the opportunities as well as for preventing from the negative consequences of the risks.

Many enterprises nowadays merge for the purpose to gain a competitive advantage. Thus they obtain better conditions for performing scientific activities, research, development, production and sales on the various continents and can use the specific competitive advantages.

The enterprises have different approaches to globalisation. They depend on the economic and market factors, on the readiness to change of the trade unions, enterprise owners and shareholders, enterprise management, as well as on the attitude of the government bodies and institutions (Gates et al., 2012). The enterprise efficiency does not depend on a short-term decision making and implementation. It requires comprehensive long-term enterprise development. It is the ability of enterprise management to control the enterprise and avoid enormous insecurity, uncertainty, and risk in the long-run (Nedeliakova et al., 2015).

Formation of a fine control system in the enterprise is currently becoming a necessary condition for survival in particular due to the economic crisis. Enterprise acquires a substantially greater belief in success, in case it has created a good early warning system, where it is able to identify the crisis in time and to prepare remedial measures in order to repudiate the crisis (Korol, 2011). Not many people solve the problem during the time the business is doing well. However, this is not leading to a vital and sustainable business. (Kozubíková et al., 2015). Effective risk early identification and risk assessment system in the enterprise may also be the controlling as the potential crisis early indicator.

From the present theory point of view in Slovakia, the idea of industrial enterprise controlling has been analysed to a certain extent, although elaborated there are still controlling tasks missing in the management support sector as well as other major areas within the enterprise that have been clearly stated but for the most part, no theory which could bring basic information on controlling has been prepared from the business risks management point of view (Sira et al., 2016).

From the practice point of view in Slovakia, the controlling has its largest blanks in providing essential information for management decision making as well as in the sole strategic controlling in the enterprise. Experts inform that 90% of all crises are caused by the enterprise itself and it has the substantial share in the rise of the crises (Kelíšek, 2009). The reason may also be the fact, that the majority of enterprises in Slovakia have not adopted to fundamental solutions how to manage the risks in a correct manner.

By now, according to our knowledge, neither in theory or nor in practice in Slovakia, there have not been any special issues worked out, which could provide basic information on controlling from the risk factors effecting industrial enterprises operating in Slovakia early identification point of view.

A major goal of the report is to raise the significance of risk management through controlling enterprises operating in Slovakia, which considers dynamic effects of global environment. It includes also the draft of the controlling operation model in the risk management process through controlling integrated information system, so that it was possible to identify any prospective risks affecting the existence of the enterprise.

Preparation methods of the report and survey were selected to pursue the set major goals and partial goals. As to the methodical point of view, empiric, expert and exact methods and theoretical knowledge acquired from controlling, business economics and management were applied. The following methods were used to draft the report and survey: Analysis method, synthesis method, induction method and deduction method. Expert method based on detection principle, i.e. enquiry survey. It is collection of responds from experts in a written form through an enquiry. The method is established on practical bases where knowledge and intuition was essential to the managers working in enterprises operating in Slovakia. A multi-test rating method with direct balance fixation – Point scale. Statistic ranking.



## **2. The most important current risk factors research in enterprises operating in Slovakia**

We made a research in order to designate priority of suggested risk factors having impact on existence of the enterprise. Its central goal was to detect the significance of risk factors in major areas of management, through expert rating executed by professionals coming from top management and middle management of industrial enterprises operating in Slovakia, through an enquiry and through using top point multi test rating that uses a scale method.

The method is established on practical experience, knowledge and intuition of the managers working in enterprises. It is a quantitative risk analyses method. Outcome of the produced expert rating is a catalogue of the most important risk factors having impact on the existence of the enterprise.

Idea of the test – significance of risk factors that consists consideration of two views (Standard STN ISO 31000, 2011):

- Probability of risk factor occurrence – it is a so called probability indicating the measure of expert's opinion on possibilities of particular risk factors that occurred (Kral & Klietik, 2015).
- Possible consequences of a risk factor – the rating can be executed by a method of point rating, where the intensity of risk factors application depends on selected indicators of the subject that will be discovered.

In an interrogatory research 30 manufacture enterprises were requested and 55 % thereof belong to the large companies group whereas 45 % thereof belong to the medium companies group. Data collection was anonymous and responses were calculated by cumulative processing of companies that are operating in Slovakia and have become representatives of the data.

Outcomes of the enquiry were statistically evaluated and by the modified progressive weight schedule method – Tree of multi test rating criteria priority and norm weight was assigned ergo the significance of key risk factors that was a high importance.

The chart order was designated from the processed outcomes:

- Most substantial (most significant) risk factors, which are most important in the whole enterprise On such order assignment, it is possible to evaluate the risk factors from internal environment, sector environment and soft calls (business management), because stating the risk factors occurrence probability from macro environment is very difficult or impossible. In the Table 1 list of 10 most substantial risk factors are stated.
- Risk factors in major areas of enterprise. The significance of the risk factor has been calculated and we made a classification of key risk factors, also according to major areas in the enterprise. The assigned order in the risk factors catalogue allocates the importance of each risk factor in major areas clearly and contributes to better evaluation of the total enterprise risk position. It is the individual risk factors, to which the enterprise is currently exposed.

Table 1: Most substantial risk factors in enterprises operating in Slovakia

Most substantial risk factors		Risk factor measuring	Enterprise department
1.	Strong position of the market competition	Competition companies market share in % (competition power)	Competition
2.	Increasing customers' claims	Number of modifications in specifications per month by customers	Customers
3.	Insufficient profit of enterprise	Variable costs increase per quarter in %	Finance
4.	High variable costs of enterprise	Profit fall in % to planned value per quarter	Finance
5.	Deprivation of major customers	Number of lost major customers per quarter	Customers
6.	Competition products higher class	E.g. long-term, yes or no	Competition
7.	High market saturation	Number of competition companies on market	Customers
8.	Unreliable suppliers	Certified suppliers percentage, Number of late material supplies per quarter	Suppliers
9.	Low-class marketing strategies	Number of new customers per quarter, number of lost prospective customers per quarter	Marketing-sale
10.	Incorrect management system adjustments	On regular basis (often), rarely, irregularly (seldom)	Business management

Source: (elaborated by authors)

The risk factors catalogue with use of controlling should inform the managers of their development and their management ways. Timeliness and accuracy rate depends on requirements of the top managers. It is necessary to assign persons to the defined risk factors that are liable for their management and at the same time to allocate resources and competences. At first sight it should be clear, what process will be applied at the critical moment (Ojiako, 2012). It has emerged from the research outcomes, that most key risk factors are 21% from finance area, 20% of customers sector and 14% of marketing and sale. That is why higher attention should be paid to these areas by managers working in enterprises operating in Slovakia.

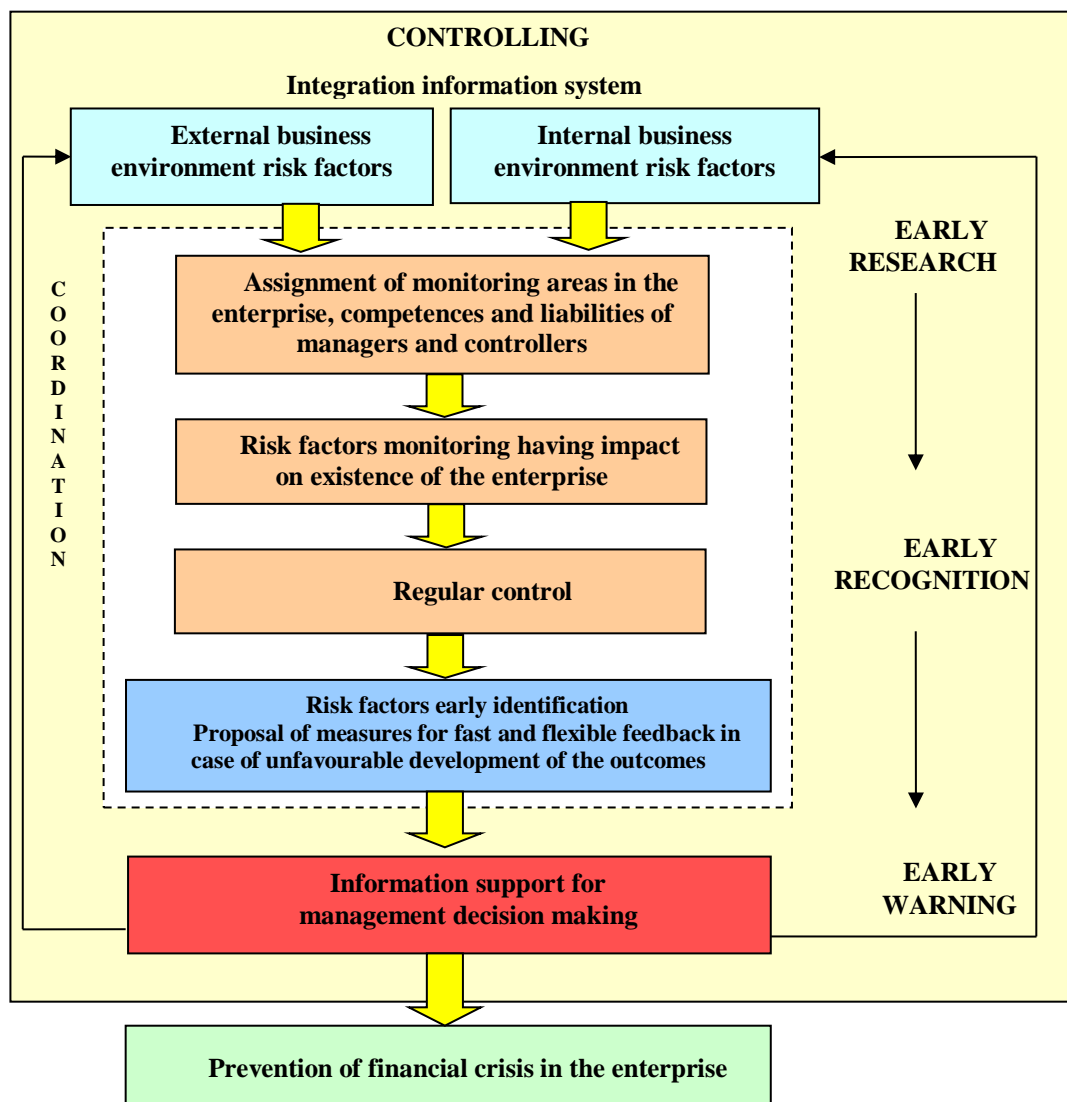
### 3. The proposal of controlling operation model in the risk management

Suggested key risk factors classified according to the criteria of their significance by Slovak managers, should be identified in the enterprise in time by controlling through financial economic indicators (Razaque et al., 2012). It is important to discover the indicators clearly, their values in time and for them to be constantly monitored by controllers in individual areas of the enterprise in a required interval. This means to monitor important changes, so that unexpected occurrences of events could be identified in an early stage, to prevent incurrence of turn-overs or gains losses, as well as to make use of offered opportunities optimally. Controlling should be presented as a form of effective risks early identification and consideration system – early warning system.

Upon such acquired information we suggested the controlling operation model in the risk management process as an early indicator of the potential crisis. Its major goal is to prevent the financial crisis to occur and to assure the existence of the enterprise. Suggested controlling operation model is made of the sequence of the steps in the risk management process (Töpfer, 2002), (Hakim & Hakim, 2009), (Zhang & Qi, 2012) (Figure 1):

1. Early research in external and internal environment of the enterprise.
2. Early recognition of risk factors namely: regular control and prognoses.
3. Early warning of the business management.

Figure 1: Controlling operation model in the risk management process as the potential crisis early indicator



Source: vlastné spracovanie

Controlling operation model in the risk management process as the potential crisis early indicator will be applied successfully in the enterprise, if the following requirements are ensured and accepted by the management:

### 3.1 Assignment of major monitoring areas in the enterprise and mutual cooperation of divisions

Management of the enterprise must decide on what major management areas and risk factors stated will be constantly monitored in external and internal environment. Major areas suggested by us in the controlling support e.g. finance, marketing, manufacture etc. and risk factors are stated in the preceding chapters. All major areas of the enterprise contribute to an achievement of common intent by specific means. Success of the nowadays organization is not lying only on the measure of the work perfection of individual divisions, but it depends rather on the high-class complex cooperation. That is why mutual unofficial, ergo collegial cooperation of individual departments is necessary on application of the controlling from the business risk management point of view.

### **3.2 Assignment of competences, liabilities of managers and controllers**

Each manager that plays a key role at individual business management level is liable for the assigned tasks and for the following working methods of the processes under the designated goals with relevant competences (Vodak et al., 2014). It is important that competences and liability was assigned to the controlling executors by the business management at individual management levels, and that the controlling was recognized by all parts of the system in the enterprise.

### **3.3 Information flows assurance in the enterprise i.e. integration information system**

On quantification on the economical business risk position that has been perceived globally certainly requires a suitable and secure information system which consists of information acquisition, evaluation as well as reports processing, which lately proved to be an important tool that has been placed as a foundation for management decision making (Sytnyk, 2012). Controlling can fulfil its information process only, if it is supplied with corresponding information licences allowing access to information from various business areas. That is why we recommend creation of integrated information system by the enterprise.

### **3.4 Assure integrated planning and regular control in the enterprise**

An important role in this relation is also performed by the planning, as the risk potential has to be reflecting on possible development scenario. Fine analyses of events which can have impact on existence of the enterprise may also help to establish the way leading to the risk management. Controlling operation should monitor the impacts on the enterprise from a very early stage whilst still developing. It is also important to monitor the impacts on the enterprise due to possible further development. It can be performed as the early warning system in particular by comparing real values to desired values on operative controlling and to identify changes, which require following strategy correction through strategic controlling, in time. That is why the planning integration, which can be supported by strategic and operative controlling, is important.

### **3.5 Risk factors early identification and assignment of indicators allowance**

In major areas of the enterprise risk factors, or potential risks, which can indicate dangerous development of processes, have to be identified in time. Goal of the controlling in risk management is not to exceed the defined security quote, or required risk rate for the enterprise and to achieve information of prospective risk in the future. Controlling reveals prospective risks upon assignment of individual key indicators allowance and assures a fast view of the global situation in the enterprise (Chrobok & Gleißner, 2012). Assignment of the required allowance must start from general goals of the enterprise and from special goals implied from higher aims. Due to complex specification of the moment, when it is the right time to take preventive measures, limitations of the individual indicators allowance must be assigned by the enterprise itself. It is hard to assign general limitations for enterprises, which are not identical in our environment at all.

## 4. Conclusions

A major contribution of this report is the establishment of complete theoretical controlling approach from the risk management point of view and highlight of risk management importance through controlling in industrial enterprises operating in Slovakia. Further contribution of the report is the assignment of the controlling application and support in major areas of management in the enterprise, designation of integrated information system tasks through controlling, and statement of the suggested risk factors having impact on existence of the enterprise significance in major areas of management in the enterprise operating in Slovakia.

Suggested controlling operation model in the risk management process through integrated information system should be operating as the potential crisis early indicator. It is also possibly used in practice for medium and large industrial enterprises operating in Slovakia, as the crisis prevention. It is important, that Slovak managers would pay sufficient attention to the designated risk factors, kept monitoring these risk factors and comparing them to their own tolerance limitations.

Existence of an industrial enterprise operating in Slovakia in nowadays dynamic times means to understand and manage the risks, upon which better business management results will also be achieved, in a correct way. Coordinated approach to risks increases the company competitiveness and gross profit margin. Risk factors monitored by controlling can represent one of the most significant potentials for constant improvement of the manufacture industrial enterprise. Enterprises, which will catch the risk factors and interpret them in a correct way in time, are getting into mark ant lead and obtaining advantages when comparing to enterprises, which need strong, specific, clearly explainable signals for decision. In the business world the risk management is becoming a part of the management system of each enterprise. In enterprises operating in Slovakia the risk management standard is still very low, and that is why the suggested early warning system with the use of controlling should be considered as a part of common management of each enterprise.

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# INTERNATIONAL MOBILITY OF STUDENTS AND ITS POTENTIAL EFFECT ON THE EMPLOYMENT OF UNIVERSITY GRADUATES

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**Abstract.** The globalisation and integration processes greatly facilitate the international mobility of university students. This paper examines the trends in students' mobility within the EU and its potential effect on employment of university graduates in the EU countries. We assume that more international experience of students during their studies could improve their practical skills which could further lead to better employability of graduates on average. We are focused especially on countries' openness to the international mobility of students expressed as the sum of students arriving in the country and those studying in another EU country. The paper is mostly empirically oriented using panel data for 28 EU member states in the period 2000-2012. We firstly applied fixed effects regression in order to capture potential short-run effects. In the second stage we used panel cointegration techniques in order to test potential causality between selected variables in the long-run. We found relatively strong evidence that the openness of the country with respect to students' exchange (both inward and outward) could have a positive effect on employment of graduates. This seems to be especially true in the long-run. Thus, the international mobility of students seems to be beneficial in respect of increasing overall employment rate of university graduates in the long-run.

**Keywords:** international students' mobility, international exchange of university students, youth unemployment, employment of university graduates

**JEL Classification** I23, J21, J60.

## 1. Introduction

Unemployment is currently one of the most discussed economic problems. This problem is still very far from be solved, despite relatively slow but stable economic growth in most of the developed countries in recent years. Many people are out of work for a rather long time and they are gradually losing their work skills and falling permanently into the social net. With respect to this, especially the youth unemployment has become a very severe problem since the recent global economic crisis. Young people have been particularly hard hit during the last global recession (Bell & Blanchflower, 2010). The EU has developed several actions to alleviate this problem including youth employment packages and the Youth Employment

Initiative. Despite the fact that, these actions appear to be to some extent effective, there are still many young people who still fail to find a job. Moreover, this problem concerns not only poorly educated young people, but also university graduates. After several years of university study, they enter the labour markets with some theoretical and partly practical knowledge, but they are still more or less inexperienced. Thus, public or private money that has been invested in their education appears to be spent in a very inefficient way. In spite of several positives, it seems that the role of universities in educating for the needs of the labour market is slowly declining. However, there are some steps that can be made to change this situation. It is obvious that students often lack practical and language skills. In our view, some of these skills can be successfully developed during students' mobility programs in foreign countries. It is likely, that the students' experience with foreign countries could significantly increase his or her probability of being employed. Hence, the more emphasis on students' international mobility could lead to a higher youth employment rate. Thus, our paper aims to focus this potential relationship between international mobility of university students and the employment rate of graduates. We want to empirically test the assumed hypothesis about the potential positive effect of international exchange of university students on the employment rate of university graduates. Firstly, we review the literature related to this topic and concisely describe our methodology and data. Subsequently, we turn our attention to our results, conclusions and potential policy implications.

## 2. Literature review

Youth unemployment became a more pressing issue in many countries after the global recession. In most European countries, the youth unemployment rate is twice or three times higher than the total unemployment rate (Demidova et al., 2015). It is important to notice, that this problem is not important only because jobless youth causes a heavy burden for public budgets, which means approximately 1.2% of the GDP in the EU (in year 2011), but also because it affects the future of young people (Artner, 2013). As argued by Bell & Blanchlower (2010) there is strong evidence that young people are more negatively affected by their initial experience of worklessness compared to older unemployed people.

However, not all countries have been affected equally by this phenomenon. Especially southern European countries and France have experienced a rapid increase in youth unemployment. On the other hand, youth unemployment has been in continuous decline in Germany for many years. This completely different development could be addressed especially to differences in labour policy and the educational system (Cahuc et al., 2013). There is also an increasing recognition that young people often lack the employability skills that employers require which increases youth unemployment (Windmill, 2012). Hence, education, skills and the experience of young people could be seen as key issues. One of the most worrying facts is that there is a rather significant number of university graduates that fail to find a job for rather a long period of time despite their degree. The unemployment of this cohort will result in a significant loss of human capital, and could cause a series of problems in education, society, economy and culture (Tao, 2010). Thus, what can be done to change this situation? In our view the international exchange of students could represent an important piece of the puzzle in this problem. At least we can say that participation in an international student exchange program during university studies could increase a likelihood of working abroad by more than 20% on average (Di Pietro, 2012). Therefore, it seems easier for young people to find their job outside the home country. Of course, this could have some benefits with respect to unemployment, but



it is not helpful for economic development of the home economy. However, it would be wrong to see the students' exchange as some kind of accelerator for the brain drain, because it could also increase the employability of graduates in their home economy. The acquisition of intercultural skills by students' international mobility is often considered as desirable (Petzold & Peter, 2015). Especially multinational companies often explicitly look for graduates with international mobility experience during their studies (Trooboff et al., 2007). International exchange programs could improve language skills (Martinez, 2010) as well as the cultural awareness and personal development of students engaged in this program (Black & Duhon, 2006). Potts (2015) reported that Australian students perceived their learning abroad experience as very useful for their future career. They also identified several employability skills such as interpersonal and communication skills, teamwork skills, problem solving and analytical skills which had been gained during this experience. Similarly, Baláž and Williams (2004) found that students from Slovakia who studied in UK gained some more specific competences in addition to language skills. These include learning, attitudinal and interpersonal competences as well as networking.

It is obvious that education and skills are not the only important factors, and we can identify several other determinants affecting the unemployment rate in general and thus also youth unemployment. Perhaps most importantly, it is GDP growth. Thus, the business cycle, and its current phase, could be very significant in this sense. Moreover, business cycle fluctuations of the unemployment rate among youth are often much higher than that of other cohorts (Acedański, 2016). Hence, most of the authors applied GDP per capita or GDP growth as a control variable in their models (Choudhry et al., 2012). However, there could also be some other specific determinants of unemployment such as institutions, policies, employment protection legislation (EPL) and active labour market policies (ALMP) (Dal Bianco et al., 2015). The majority of studies find on the one hand a positive correlation between EPL and unemployment (Heckman & Pages, 2015) and a negative relation between the unemployment rate and ALMP on the other hand (Bruno & Rovelli, 2010).

### **3. Data and methodology**

Our analysis aims to empirically examine the potential effect of international students' exchange on youth graduate unemployment. With respect to the aim of the paper, we decided to analyse secondary data from EU countries available at the Eurostat database. The dataset consist of panel data for 28 EU member states in the period 2000-2012. We used fixed effects and random effects regression in order to test for short-run causalities or at least correlations between selected variables.

However, we also assumed that the relationship between students' exchange and unemployment could be partially undermined by short-term effects, but there could still be a stable long-run causality between both indicators. Due to this fact, the relationship between both indicators could be manifested in the long-run. In line with this assumption we decided to use panel cointegration analysis and cointegration regression. In the first step of the analysis we test for weak stationary and the order of integration for all variables, which we want to use in the cointegration model. After we managed to satisfactorily demonstrate the same level of integration by the unit root tests, we tested for the existence of cointegration by panel cointegration tests developed by Pedroni (2004). In the next part of our analysis we used panel cointegration regressions, specifically the dynamic OLS (DOLS) and fully modified OLS (FMOLS) panel cointegration regression. Both estimators have been used in their two forms

referred to as a pooled estimator and group-mean estimator. While pooled estimators are based on the „within dimension“ of the panel, the group-mean estimators are based on the „between dimension“ of the panel. The pooled FMOLS estimator is proposed in Phillips and Moon (1999) and the group-mean FMOLS estimator is developed by Pedroni (2001). The pooled DOLS estimator is introduced by Kao and Chiang (2000) and the concept of the group-mean estimator is extended from FMOLS to DOLS by Pedroni (2001).

The employment rate of people with tertiary education aged from 25 to 29 years is used as the dependent variable in all models. We believe that this cohort can be identified as the group of young graduates. The sum of incoming and outgoing students in the EU country has been used as the main independent variable. This is referring to countries' openness to students' exchange in both inward and outward directions. Furthermore, we also used students' inflows and students' outflow indicators in the models. The GDP per capita adjusted for differences in price purchasing parity have been used as a control variable. All variables used in the regressions are described in more detail in Table 1.

*Table 1 Description of variables used in regressions*

Dependent variable:	
Employment_25-29 tertiary	The employment rate for the people between 25 and 29 years with tertiary education for each EU country. Source: Eurostat database, Code: lfsa_ergaed
Independent variables:	
Openness to students' Exchange	This indicator presents the sum of incoming and outgoing students (ISCED 4-5) for each EU country, using the figures provided by the host country on foreign students enrolled in tertiary education by nationality. It includes only the EU/EEA/Candidate countries and the nationalities corresponding to these countries. Source: Eurostat database (Mobility of students in Europe Tertiary education), Code: tps00064
Students' Outflows	This indicator presents the number of outgoing students (ISCED 4-5) for each EU country, using the figures provided by the host country on foreign students enrolled in tertiary education by nationality. It includes only the EU/EEA/Candidate countries and the nationalities corresponding to these countries. Source: Eurostat database, Code: tps00064
Students' Inflows	This indicator presents the number of incoming students (ISCED 4-5) for each EU country, using the figures provided by the host country on foreign students enrolled in tertiary education by nationality. It includes only the EU/EEA/Candidate countries and the nationalities corresponding to these countries. Source: Eurostat database, Code: tps00064
GDP per capita	GDP per capita in Euros (price purchasing parity) Source: Eurostat database

*Source: Authors based on the data from Eurostat.*

The independent variables have been also lagged by several periods (years) in the fixed effects and random effects model in order to capture expected delay between the mobility of students and their graduation and actual coming into labour market. This lag could be estimated at approximately 3 years. The most important results are described in more detail in the next section.

## 4. Results

Firstly, we examined the long-run relationship which involves testing the stationarity by panel unit root tests. Based on the results of these tests (see appendix 1), we can conclude that all variables appear to be non-stationary at level but stationary at first difference. Thus all of them seem to be integrated of the first order. In the next step, we tested employment rate of

people with tertiary education aged 25-29, students' exchange openness of the country and GDP per capita for cointegration. Based on the majority of panel Pedroni cointegration tests we can say that these three variables seem to be cointegrated (see Appendix 2), which means that we can apply panel cointegration regression on these three variables in the next phase of our analysis.

In the first part we analysed short-run effects. The results of random and fixed effects regressions are summarized in table 2. Based on the result of the Hausman test, a fixed effects model seems to be more suitable for our analysis. The openness to the international exchange of students appears to be positively associated with higher employment of graduates when lagged by three years.

Based on the results of the fifth and sixth regression, the positive effect seems to be also evident in the case of inflows and outflows of students. Employment of young graduates is also significantly positively associated with changes in GDP per capita. These results are in line with theoretical assumptions. However, the R-squared values are rather low in all models, which means that our model only to a relatively small extent explains the variability in graduates' unemployment. Perhaps, this could be the consequence of the methodology that can capture only the short-run causalities.

Table 2 The results of fixed effects and random effects regression models

Dependent variable: Employment_25-29_tertiary						
	(1)	(2)	(3)	(4)	(5)	(6)
ΔOpenness to students' Exchange (-1)				-0.01 (-0.86)		
ΔOpenness to students' Exchange (-2)			-0.033 (-1.25)			
ΔOpenness to students' Exchange (-3)	0.062** (2.36)	0.066*** (2.69)				
ΔStudents' Inflows (-3)					0.399*** (8.89)	
ΔStudents' Outflows (-3)						0.523** (2.19)
ΔGDP per capita	0.001*** (9.16)	0.001*** (12.25)	0.001*** (6.47)	0.001*** (5.13)	0.001*** (10.45)	0.001*** (10.48)
C / Fixed effects	-0.72*** (-4.06)	-1.07*** (-4.17)	-0.73*** (-3.36)	-0.70*** (-3.97)	-0.89*** (-4.77)	-0.88 (-4.84)
Cross-section Fixed effects/ Random effects	RE	FE	FE	FE	FE	FE
R-squared	0.18	0.24	0.15	0.12	0.21	0.21
F-statistic	27.78***	2.39***	1.58***	1.34	2.25***	2.16***
Akaike info criterion		4.64	4.76	4.74	4.64	4.66
Hausman test statistics	0.000					
Number of observations	252	252	252	287	252	261

Notes: \*\*\*/\*\* means significance at the 10%/ 5%/ 1% levels. White cross-sectional standard errors and covariances have been used in all models.

Source: Authors

In order to examine potential long-run causalities we applied panel cointegration techniques, namely Dynamic OLS (DOLS) and fully modified OLS (FMOLS). The results of models with pooled estimators are shown in Table 3. According to all models the openness to international student exchange appears to be a significant factor positively affecting the employment of young university graduates in the long-run. The same seems to be true for GDP per capita.

*Table 3 The results of pooled FMOLS and DOLS cointegrated regression models*

Dependent variable: Employment_25-29_tertiary						
Pooled estimators (within dimension)						
	(1) <sup>A</sup>	(2) <sup>B</sup>	(3) <sup>C</sup>	(4) <sup>D</sup>	(5) <sup>E</sup>	(6) <sup>F</sup>
Openness to students' Exchange	0.046*** (2.97)	0.025** (2.53)	0.025** (2.45)	0.670*** (3.52)	0.031* (1.82)	0.67** (4.84)
GDP per capita	0.001*** (9.34)	0.001*** (13.01)	0.001*** (14.22)	0.001*** (7.69)	0.031* (1.82)	0.001** (2.85)
R <sup>2</sup>	0.92	0.93	0.92	0.99	0.94	0.99
Adj. R <sup>2</sup>	0.90	0.91	0.90	0.97	0.92	0.97
Long-run variance	5.34	2.27	2.27	0.32	3.52	0.31
Observations	335	335	335	280	335	280

Notes: \*\*\*/\*\* means significance at the 10%/ 5%/ 1% levels; long-run variances calculated based on Bartlett kernel and Newey-West bandwidth have been used for coefficient covariances;

A - FMOLS, constant & linear trend, coefficient covariance matrix with homogenous variances;

B - FMOLS, constant & linear trend, coefficient covariance matrix with homogenous variances, first-stage residuals use heterogeneous long-run coefficients;

C - FMOLS, constant & linear trend, coefficient covariance matrix with heterogeneous variances;

D - DOLS, constant & linear trend, 1 lead and 1 lag (fixed leads and lags), coefficient covariance matrix with homogenous variances;

E - DOLS, constant & linear trend; lags and leads based on the SIC and AIC; coefficient covariance matrix with homogenous variances;

F - DOLS, constant & linear trend, 1 lead and 1 lag (fixed leads and lags), coefficient covariance matrix with heterogeneous variances.

*Source: Authors*

The regression models with group-mean estimators capturing the between dimension are shown in the Table 4. These regressions have been used mostly as the robustness check of our previous results achieved by pooled estimators.

*Table 4 The results of grouped FMOLS and DOLS cointegrated regression models*

Dependent variable: Employment_25-29_tertiary			
Group-mean estimators (between dimension)			
	(1) <sup>A</sup>	(2) <sup>B</sup>	(3) <sup>C</sup>
Openness to students' Exchange	0.33 (1.56)	1.028** (2.76)	1.028** (2.21)
GDP per capita	0.001*** (12.64)	0.001*** (9.07)	0.001*** (8.56)
Long-run variance	5.34	1.58	1.58
Observations	335	335	335

Notes: \*\*\*/\*\* means significance at the 10%/ 5%/ 1% levels; long-run variances calculated based on Bartlett kernel and Newey-West bandwidth have been used for coefficient covariances;

A – FMOLS, constant & linear trend included;

B - DOLS constant included, lags and leads included based on the AIC and SIC;

C – DOLS, constant, lags and leads based on the AIC and SIC, individual white heteroscedasticity-consistent standard errors & covariances.

*Source: Authors.*

The results of two out of three models again demonstrate a statistically significant and positive effect of openness to students' exchange on unemployment of young graduates in the long-run.

## 5. Conclusions and policy implications

Our results strongly suggest that more intensive international exchange of university students could have a positive effect on employment of young university graduates. Based on panel cointegration techniques we can say that this relationship appears to be significant and stable especially in the long-run. However, we also find some evidence in the short-run using fixed-effects regression, but three years lag have to be taken into account. This effect appears to be significant in the case of inflows as well as outflows of students.

Thus, we can conclude that more intensive international mobility of students (at least within EU) could be beneficial for employability of university graduates. This could be the consequence of gaining skills that are important for labour market. This has been previously supported by several other studies (Martinez, 2010; Black & Duhon, 2010; Potts 2015). It is obvious that the mobility of students could not be seen as unique solution for unemployment of university graduates, but it still may prove an important tool in reducing this problem.

Despite the fact, that there are currently several tools to support international mobility of students, including the current dominant Erasmus<sup>+</sup> programme, there is still some potential for improvement and this represents a challenge for EU institutions and national governments. It seems that any further success in this area will inter alia be rewarded by higher employment of university graduates. Due to the fact that youth unemployment is nowadays the most significant problem especially in less developed regions this poses an important obstacle for regional development. Increasing the share of young people with tertiary education in conjunction with improving employability of university graduates in the region could be seen as an essential factor in regional development.

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**Appendix 1** The results of panel unit root tests

	Null Hypothesis: non-stationarity				
	LLC test	Breitung	IPS test	ADF test	PP test
Employment 25-29tertiary - intercept&trend	-4.11***	1.67	-0.22	68.26	68.70
ΔEmployment 25-29tertiary - intercept&trend	-14.3***	-6.81***	-7.62***	157.05***	237.18***
Openness to students' Exchange - inter. &trend	-0.16	6.01	2.08	67.43	87.08**
ΔOpenness to students' Exchange - inter. &trend	-13.2***	3.9	-8.7***	177.0***	293.92***
GDP per capita - intercept & trend	-0.65	4.03	4.08	27.19	25.61
ΔGDP per capita - intercept & trend	-12.3***	-7.4***	-3.6***	92.9***	106.58***
Students' outflows - intercept & trend	-2.01**	6.75	1.16	56.31	97.70***
ΔStudents' outflows - intercept & trend	-10.9***	-0.3	-4.2***	127.8***	183.0***
Students' inflows - intercept & trend	-0.79	6.18	-0.13	83.4***	110.4***
ΔStudents' inflows - intercept & trend	-1.8**	1.5	-1.06	90.66***	266.1***

Note: \*/\*\*/\*\* means significance at the 10%/5%/1% levels. Numbers of lags have been selected according to Akaike Crit.

Source: Authors.

**Appendix 2** The results of Pedroni cointegration tests

Cointegration: Employment_25-29_tertiary Openness to students' exchange GDP_Per_Capita (intercept)			
Null Hypothesis: no cointegration		Statistic	Weighted stat.
Pedroni test (Engle-Granger based) tests – individual intercept, automatic lag length selection based on AIC	Panel v-Statistic (within dimension)	0.47	-0.21
	Panel rho-Statistic (within dimension)	0.71	-0.82
	Panel PP-Statistic (within dimension)	-2.58***	-2.39***
	Panel ADF-Statistic (within dimension)	-3.86***	-4.50***
	Group rho-Statistic (between dimension)	3.15	
	Group PP-Statistic (between dimension)	-3.18***	
	Group ADF-Statistic (between dimension)	-5.85***	
Cointegration: Employment_25-29_tertiary Openness to students' exchange GDP_Per_Capita (intercept & trend)			
Null Hypothesis: no cointegration		Statistic	Weighted stat.
Pedroni tests (Engle-Granger based) tests – individual intercept & trend, automatic lag length selection based on AIC	Panel v-Statistic (within dimension)	0.33	-0.20
	Panel rho-Statistic (within dimension)	2.58	0.28
	Panel PP-Statistic (within dimension)	-4.71***	-3.79***
	Panel ADF-Statistic (within dimension)	-5.03***	-4.32***
	Group rho-Statistic (between dimension)	4.75	
	Group PP-Statistic (between dimension)	-4.96***	
	Group ADF-Statistic (between dimension)	-5.39***	

Note: \*/\*\*/\*\* means significance at the 10%/ 5%/ 1% levels.

Source: Authors.

## FOOD EXPORTS ELASTICITIES IN COUNTRIES OF THE E.U.: A COMPETITIVENESS APPROACH IN TIMES OF GLOBALIZATION

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**Abstract.** The European agrifood sector can be seen as a strong but flexible sector to respond to problems like economic crises, with an interesting role in globalization movements. The main objective of this paper is to analyse the competitiveness of agrifood exports in the European Union, from the perspective of its Member States, by calculating their elasticities. This is an original approach in economic literature as it is not based on the traditional Shift-Share analysis. This study is proposed between 2004 and 2013, the last decade in which data are available for exports and deflators. The obtained results distinguish a different profile between Eastern countries, the latest admissions, against Western countries, the most veteran ones within the Union. Thus it can be concluded that Eastern countries, especially Bulgaria, Latvia, Lithuania and Poland, are highly competitive in the food foreign sector, mainly compared with Western countries. These countries have a strong agrifood sector, but they have other sectors whose competitiveness is more remarkable. Then the entry of Eastern countries in the European Union has meant an improvement in their agrifood economies and a path to the benefits of globalization.

**Keywords:** agrifood sector, competitiveness, development, exports, elasticities

**JEL Classification:** L66, O13, Q17

### 1. Introduction

The main objective of this work is the analysis of the competitiveness of agrifood exports of E.U. at the level of its Member States. With this aim in mind, their different elasticities will be studied, using an innovative approach in economic literature beyond the traditional Shift-Share analysis. This study is developed between 2004 and 2013, as the last decade in which data of exports and deflators are available.

FoodDrinkEurope (2015) considers that European food industry is a robust sector, which is set as a core one, because it has a significant weight in all countries. Moreover, as its demand is more stable to economic fluctuations, it could be a major strength for developing countries. These ideas are defended by Cadenas Marín y Cantero Talavera (1997), Park (2009), Csáki y



Buchenrieder (2013), Fedoseeva (2014), Cheptea et al (2014) y Bojnec and Fertő (2015). According to FoodDrinkEurope (2015), this sector is set as the largest manufacturing one in E.U. in terms of turnover (1.244 billion € in 2013) and added value (206 billion € in 2012). In fact, it contributes to the European economy more than other sectors such as automotive, machinery or metal. It is also the leading sector in employment in Europe, with 4.22 million workers, which would mean 15% of the total manufacturing sector. Moreover, it is a highly diversified sector by number of companies, as more than 50% of turnover is generated by small and medium enterprises.

In this context, this work is structured in the following sections. After introducing the topic in this point, the methodology is explained in the next section. In the third one, European exports are studied specifically focusing on the food industry. Elasticities of regional and sectoral development are also presented. The fourth section examines the elasticities of attraction and location and also Share and Shift elasticities. Finally, this work ends with the main conclusions and bibliography.

## 2. Methodology

Exports would be an appropriate variable to measure the competitiveness of an industry (Kitson et al (2004), Morley and Morgan (2008), Huo Da (2009), Kandilov and Zheng (2011), Maertens (2011), Ucak et al. (2012), Baiardi *et al* (2015)). This work is a relatively innovative approach because although there are many studies about this topic, there are not many based on elasticities. The Shift-Share analysis proposed by Dunn (1960) and revised by authors such as Esteban - Marquillas (1972), is very useful explaining the causes the growth of a variable, decomposing it to explain regional differences. These indicators can be expressed as elasticities, to describe regional dynamics (Esteban - Marquillas, 1986; Girardi, 1993). This analysis would improve the traditional approach because their results support an explanatory treatment, relating the growth mechanisms to space more directly.

The main indicators are presented below. The first one is the elasticity of regional development, which measures the reaction of total exports of a country ( $y_i^r$ ) compared to the growth of global exports of E.U. ( $y_i^\bullet$ ). It is calculated as follows:

$$E_{r,\dots} = \frac{\left[ \frac{\Delta y_i^r}{y_i^r} \right]}{\left[ \frac{\Delta y_i^\bullet}{y_i^\bullet} \right]} = \left[ \frac{\Delta y_i^r}{\Delta y_i^\bullet} \right] \left[ \frac{y_i^\bullet}{y_i^r} \right] \quad (1)$$

The elasticity of sectoral development will be also calculated according to formula (2). It measures how agrifood exports ( $y_i^\bullet$ ) react for increases in total exports in the E.U. ( $y_i^\bullet$ ).

$$E_{s,\dots} = \frac{\left[ \frac{\Delta y_i^\bullet}{y_i^\bullet} \right]}{\left[ \frac{\Delta y_i^\bullet}{y_i^\bullet} \right]} = \left[ \frac{\Delta y_i^\bullet}{\Delta y_i^\bullet} \right] \left[ \frac{y_i^\bullet}{y_i^\bullet} \right] \quad (2)$$

The elasticity of sectoral attraction estimates the reaction of the sector's exports in a country ( $y_i^r$ ) related to the growth of total exports in it ( $y_i^r$ ). Its expression would be:

$$E_{ri\bullet} = \frac{\left[ \frac{\Delta y_i^r}{y_i^r} \right]}{\left[ \frac{\Delta y_i^r}{y_i^r} \right]} = \left[ \frac{\Delta y_i^r}{\Delta y_i^r} \right] \left[ \frac{y_i^r}{y_i^r} \right] \quad (3)$$

The elasticity of sectoral location should be also analysed. It reflects how agrifood exports react ( $y_i^r$ ) related to the growth of agrifood exports in E.U. ( $y_i^*$ ). This index is important to measure its potential qualities of location. It is calculated as:

$$E_{ri\bullet} = \frac{\left[ \frac{\Delta y_i^r}{y_i^r} \right]}{\left[ \frac{\Delta y_i^r}{y_i^r} \right]} = \left[ \frac{\Delta y_i^r}{\Delta y_i^r} \right] \left[ \frac{y_i^r}{y_i^r} \right] \quad (4)$$

Girardi (1993) presents an interesting proposal solving for the export growth of a sector in a country ( $\Delta y_i^r = E_{ri\bullet}(CE_i^r a_i^*) \Delta y_i^*$ ) in the expression of the elasticity of sectoral location. This formula is placed in the elasticity of regional development, obtaining:

$$E_{r\bullet\bullet} = \left[ \frac{\Delta y_i^r}{\Delta y_i^r} \right] \left[ \frac{y_i^r}{y_i^r} \right] = \left[ \frac{\sum_{i=1}^I E_{ri\bullet}(CE_i^r a_i^*) \Delta y_i^*}{\Delta y_i^*} \right] \left[ \frac{1}{a_i^r} \right] = \sum_{i=1}^I E_{ri\bullet} E_{ri\bullet} a_i^* CE_i^r \quad (5)$$

The following expression is reached adding and subtracting 1:

$$E_{r\bullet\bullet} = \sum_{i=1}^I E_{ri\bullet} a_i^* CE_i^r + \sum_{i=1}^I a_i^* CE_i^r E_{ri\bullet} (E_{ri\bullet} - 1) = A_{ri} + B_{ri} \quad (6)$$

Abbreviated terms  $A_{ri}$  and  $B_{ri}$  are also known as Share elasticity (Showing what would have happened in a country if its sectors had grown at the same rate as E.U.) and Shift elasticity (With the actual growth of each country). Girardi (1993) simplifies them as:

$$A_{ri} = \sum_{i=1}^I E_{ri\bullet} a_i^* CE_i^r = \sum_{i=1}^I a_i^r E_{ri\bullet} \quad (7)$$

$$B_{ri} = \sum_{i=1}^I a_i^* CE_i^r E_{ri\bullet} (E_{ri\bullet} - 1) = \sum_{i=1}^I a_i^r E_{ri\bullet}^* \quad (8)$$

being  $E_{ri\bullet}^* = E_{ri\bullet} (E_{ri\bullet} - 1)$  y  $a_i^r = \left( \frac{y_i^r}{y_i^r} \right)$ .

The variables used in this work are total and food exports of the Member States of E.U. for 2004-2013, as the last decade with data available for deflators and exports. These data, provided by EUROSTAT, have been deflated to 2004 prices by the Harmonised Indices of Consumer Prices (HICP). The development is carried out below.

### 3. Analysis of exports in the E.U. (2004-2013), focusing on food exports

This section describes the evolution of total and food exports in 2004-2013 for the Member States of the E.U. To analyse its importance, European food exports should be centered in the context of total exports by countries. This variable is shown in table 1, where it is found that they have increased by 24.12% in constant terms in 2004-2013.

In this case, Eastern countries have a higher growth in total exports, especially highlighting Slovakia (129.06%) and Lithuania (128.75%). Western countries have a much lower growth, mainly Ireland (-8.46%) and Luxembourg (-16.53%). With these data the elasticity of regional

development, presented as expression number 1, can be calculated. Their results appear listed in figure 1. It can be seen that most of the countries of Eastern Europe have increased their exports. Particularly noteworthy are Slovakia (5.3510), Lithuania (5.3381) and Latvia (4.7696). Western countries have worse indicators showing further weakness.

*Table 1: Exports in Member States of E.U.. (2004-2013) (Billion €)*

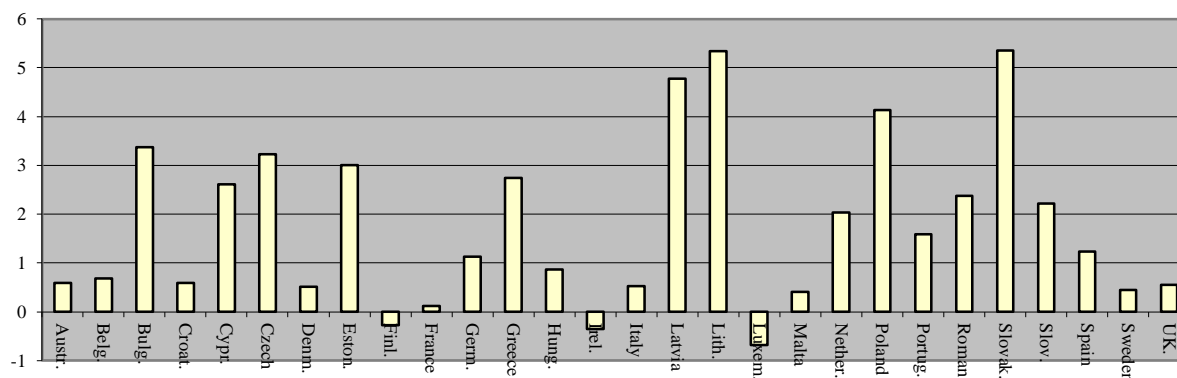
	Total Exports			Agrifood Exports		
	2004*	2013*	% Growth **	2004*	2013*	% Growth**
Austria	95,2	131,9	14,2%	5,4	9,5	43,9%
Belgium	246,7	352,9	16,6%	20,1	31,0	25,4%
Bulgaria	8,0	22,3	81,2%	0,7	3,1	172,8%
Croatia	6,4	9,5	14,4%	0,6	1,1	49,0%
Cyprus	0,8	1,5	62,9%	0,2	0,3	24,8%
Czech Rep.	55,5	122,2	77,9%	1,8	5,3	141,7%
Denmark	62,0	82,9	12,4%	11,5	15,4	12,3%
Estonia	4,8	12,3	72,5%	0,3	1,2	130,4%
Finland	49,5	56,0	-6,6%	0,9	1,5	37,3%
France	363,5	437,4	2,8%	36,3	55,3	30,3%
Germany	731,5	1093,1	27,1%	30,8	61,2	69,2%
Greece	13,2	27,6	66,1%	2,5	4,2	33,0%
Hungary	44,7	80,9	20,9%	2,7	6,6	63,7%
Ireland	84,2	86,1	-8,5%	7,1	9,9	24,9%
Italy	284,4	390,2	12,7%	17,6	29,9	39,9%
Latvia	3,2	10,9	115,0%	0,3	2,1	380,4%
Lithuania	7,5	24,5	128,7%	0,8	4,3	271,5%
Luxembourg	13,0	13,9	-16,5%	0,6	1,0	21,1%
Malta	2,0	2,7	9,9%	0,1	0,2	57,9%
Netherlands	287,3	505,6	49,2%	38,5	63,7	40,1%
Poland	60,3	154,3	99,6%	5,0	19,0	198,6%
Portugal	28,8	47,3	38,3%	2,1	4,9	100,3%
Romania	18,9	49,6	57,3%	0,4	4,2	481,2%
Slovakia	22,3	64,6	129,1%	0,7	2,5	175,4%
Slovenia	13,2	25,6	53,6%	0,4	1,4	205,6%
Spain	146,8	238,4	29,8%	19,4	33,5	38,3%
Sweden	99,1	126,1	10,9%	3,1	7,1	97,6%
UK.	279,4	407,3	13,2%	15,4	22,2	11,6%

*Note: \* Current values \*\* Constant Values (Base 2004).*

*Source: Prepared by author based on Eurostat.*

According FoodDrinkEurope (2015) E.U. is the largest food exporter in the world. These exports doubled their amount in the last decade, showing therefore the relevance of the sector. More than a quarter of these exports are produced with countries outside Europe, with a growing and positive trend, except Russia. Then agrifood exports from E.U. can be analysed specifically. Their values are listed in table 1. This sector has increased its weight in total exports of E.U. from being a 7.43% of the total in 2004, to 8.76% in 2013. On average, agricultural exports grew by 46.4% in this decade, a rate which almost doubles global ones (24.12%). These exports have increased in all countries, especially in Eastern countries. By contrast Western countries show a more moderate growth.

Figure 1: Elasticity of regional development



Source: Prepared by author based on Eurostat

Finally, the elasticity of sectoral development, which was introduced in the methodology as expression number 2, has been studied. According to this indicator, the food industry (1.9236) would be shown stronger than the non agrifood one (0.9259).

This section can be concluded by stating that, from the point of view of exports, the European food industry is quite strong. Eastern European countries stand out presenting positive values in all the indicators. In fact, these countries more veterans have lower values.

#### 4. Study of European food exports through other elasticities

In this section other regional dynamics will be described through other elasticities. First, the elasticity of sectoral attraction will be studied, according to the expression number 3 and whose results appear in table 2. Luxembourg (-1.2771), Ireland (-2.9483) and Finland (- 5.6627) would have the most negative agrifood conditions. Note then that a total of twenty countries would present better conditions to attract foreign activity, with elasticities higher than unity. France (10.7001), Sweden (8.9747) and Romania (8.3978) stand out in this regard.

The following indicator would be elasticity of agrifood location, obtained according to the expression number 4, and whose results are shown in table 2. It is always positive, unlike what happens in non-agrifood sectors. Eastern countries stand out, especially Romania (10.3714), Latvia (8.1982) and Lithuania (5.8515). Among Western countries, only Portugal (2.1621), Sweden (2.1046) and Germany (1.4906) have greater values than unity.

Share and Shift elasticities, presented in expressions number 7 and 8, are listed in table 2. Share elasticity presents a value greater than unity when its sectoral structure is well designed. This occurs especially in Denmark (1.1108), Greece (1.1179) and Cyprus (1.1668). Instead,

there would be certain deficiencies in Finland (0.9435), Romania (0.9487), Slovenia (0.9528), Sweden (0.9574), Slovakia (0.9579) and Czech Rep (0.9579).

Table 2: Other elasticities

	El. of sectoral attraction		El. of sectoral location		Share elasticity	Shift elasticity
	Agrifood	Non agrifood	Agrifood	Non agrifood		
Austria	3,0790	0,8744	0,9453	0,5578	0,9827	-0,3921
Belgium	1,5294	0,9530	0,5485	0,7100	1,0073	-0,3175
Bulgaria	2,1283	0,8870	3,7254	3,2257	1,0167	2,3505
Croatia	3,3977	0,7731	1,0558	0,4991	1,0121	-0,4144
Cyprus	0,3933	1,1931	0,5338	3,3640	1,1668	1,4437
Czech Rep.	1,8189	0,9728	3,0551	3,3949	0,9579	2,2732
Denmark	0,9954	1,0011	0,2657	0,5551	1,1108	-0,5974
Estonia	1,7989	0,9394	2,8106	3,0495	0,9962	2,0093
Finland	-5,6627	1,1200	0,8033	-0,3301	0,9435	-1,2164
France	10,7001	-0,0759	0,6525	-0,0096	1,0255	-0,9082
Germany	2,5500	0,9319	1,4906	1,1318	0,9679	0,1566
Greece	0,4993	1,1193	0,7116	3,3143	1,1179	1,6236
Hungary	3,0509	0,8694	1,3730	0,8129	0,9856	-0,1199
Ireland	-2,9483	1,3621	0,5373	-0,5158	1,0097	-1,3603
Italy	3,1413	0,8591	0,8602	0,4887	0,9875	-0,4607
Latvia	3,3064	0,7806	8,1982	4,0210	1,0126	3,7571
Lithuania	2,1086	0,8657	5,8515	4,9912	1,0337	4,3044
Luxembourg	-1,2771	1,1179	0,4549	-0,8272	0,9750	-1,6601
Malta	5,8199	0,7308	1,2484	0,3257	0,9786	-0,5660
Netherlands	0,8149	1,0287	0,8635	2,2646	1,0597	0,9786
Poland	1,9930	0,9110	4,2793	4,0641	1,0079	3,1224
Portugal	2,6173	0,8758	2,1621	1,5031	0,9970	0,5920
Romania	8,3978	0,8265	10,3714	2,1206	0,9487	1,4270
Slovakia	1,3587	0,9881	3,7796	5,7107	0,9579	4,3931
Slovenia	3,8321	0,9214	4,4314	2,2138	0,9528	1,2716
Spain	1,2845	0,9567	0,8250	1,2768	1,0576	0,1780
Sweden	8,9747	0,7400	2,1046	0,3605	0,9574	-0,5063
UK.	0,8762	1,0072	0,2501	0,5972	0,9810	-0,4320

Source: Prepared by author based on Eurostat.

Shift elasticity will be positive if the characteristics of the country are well adapted to their needs. Countries such as Slovakia (4.3931), Lithuania (4.3044) and Latvia (3.7571) stand out in this situation. The opposite one would occur in Denmark (-0.5974), France (-0.9082), Finland (-1.2164), Ireland (-1.3603) and Luxembourg (-1.6601).

Finally, this type of countries can be built based on these elasticities:

- I. Countries Type I (Shift elasticity  $> 0$  y Share elasticity  $> 1$ ): Lithuania, Latvia, Poland, Bulgaria, Greece, Cyprus, Netherlands and Spain. The sectoral structure affects growth positively, with an appropriate allocation of factors.
- II. Countries Type II (Shift elasticity  $< 0$  y Share elasticity  $> 1$ ): Belgium, Croatia, Denmark, France and Ireland. Their model of development is based on very dynamic sectors, but there are certain negative conditions which can limit it.
- III. Countries Type III (Shift elasticity  $> 0$  y Share elasticity  $< 1$ ): Slovakia, Czech Rep., Estonia, Romania, Slovenia, Portugal and Germany. The sectoral structure works well, without being optimal, relying on mature sectors.
- IV. Countries Type IV (Shift elasticity  $< 0$  y Share elasticity  $< 1$ ): Hungary, Austria, United Kingdom, Italy, Sweden, Malta, Finland and Luxembourg. There are problems of growth with a not well designed sectoral structure.

In conclusion, the Eastern European countries stand out again, especially Bulgaria, Latvia, Lithuania and Poland. In general, Western countries have the least positive values.

## 5. Conclusion

The European food industry can be configured as a robust sector from an exporting view. Thus, this is a very competitive sector in foreign trade on the basis of the following indicators:

- The first data that would confirm this approach is the fact that agrifood exports rose 46.4% in 2004-2013 in the EU, almost twice what total exports have grown (24.12%).
- The elasticity of sectoral development of the food sector (1.9236) also doubles this amount for non-food sectors (0.9259), showing very positive values.

At the country level, important differences between Eastern and Western countries can be highlighted. On the one hand, Eastern countries would be much stronger in agrifood exports. Among them, Bulgaria, Latvia, Lithuania and Poland stand out by having all positive indicators. Estonia and Croatia would also present an interesting profile although the first country presents deficiencies in its Share elasticity. Western countries have some quite acceptable agrifood indicators but not as positive as Eastern countries. This may be due because they have other competitive strengths in the secondary and tertiary sectors. Spain and Portugal stand out especially in this group, but they have some shadows. Germany and France also highlight but their data are not as strong. At the other extreme, the most critical countries in E.U. would be United Kingdom, Finland, Luxembourg and Denmark.

These conclusions may be useful to propose specific development policies for countries which can find an ally for growth in the food industry, given their strength in foreign markets.

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## SLOVAK CLUSTERS IN THE GLOBAL MARKET

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**Abstract.** In the process of globalization and the development of multinational corporations it is necessary to look for the individual market opportunities for cooperation, which will increase their competitiveness and economic growth. The process of globalization on the one hand leads to universality of the world economy and at the other side it is also a process of differentiation. Differentiation is the decomposition into smaller economic units and the spatial manifestation of regionalization. If these smaller units act as each other economically interconnected within the region, we cooperate and share common features can mark them as clusters. The process can be described as clustering; it is an effective tool of networking of stakeholders from various sectors, the aim of which is to grow their competitiveness, economic growth and development of the regions in which they operate. Grouping of entities in the cluster brings saving for all stakeholders in areas where they can participate in key input or output levels. The contribution shall be paid to the issue of development and functioning of clusters in Slovakia, support their operations and cluster policy in Slovakia. Ever deeper spatial differentiation of economic and social level of regions is a significant specific feature of regional structure of Slovakia. Economic development in Slovakia is except a few large enterprises largely determined by the performance of the regions and economic policies exploit their potential. The result of the clusters activity should in region Slovakia increase the region's appeal to attract new investors, the number of jobs, in economic and employment growth in the region, which brings profit not only for clusters but also for regional and national economy.

**Keywords:** cluster, globalization, cluster initiatives, region, cluster policy

**JEL Classification:** P1, P13, P25

### 1. Introduction

Finding new sources, markets, more favourable activities in terms of efficiency speeded up the process of globalization, whose origins can be dated back to the 90s of the last century. Global searching of the new markets, or searching of the highest efficiency or more favourable assets abroad has been extended after 1993 (Nayyar, 2006). The era of global business and global corporations got the green light. Quality, speed of innovation and specialization of global corporations are becoming a trend of success (Porno 2006). Universalization of the world economy is the result of globalization. Simultaneously with it there is a differentiation process that causes degradation of the global economy into smaller territorial units, which are characterized by economic power and maturity (Suciu et al., 2014). This process can be marked as regionalization. Economic strength and maturity of these regions is a result of business integration and its reasons may be different: from the voluntary joining in the effort to obtain better economic results, strengthening competitiveness, increase of productivity through better



access to specialized suppliers, technology and information; to increase of performance through higher innovation potential of cooperating enterprises (Zhou & Rong, 2016). The advantage of such geographical concentration wrote already Alfred Marschall (1890) in his book *Principles of Economics*, Joseph Schumpeter in the early 20th century, however, the term for this kind of innovative alliances operating in certain region - cluster - introduced Michael Porter (1990) in his work *The Competitive Advantage of Nations*. Paul Krugman in his work *Geography and Trade* (1991) described the importance of the geographical cluster for both region and state.

## 2. Basic concepts related to clusters and clustering

The cluster is the economic phenomenon, which has many modification in view of the purpose for which it is used. The concept of cluster has become an instrument of politicians, international organizations, national governments and various agencies for the promotion of national, regional and local competitiveness, innovation and growth. Porter (1990) defined a cluster as *"groups of geographically close interconnected companies, specialized suppliers, service providers and associated institutions in a particular field and companies in related industries that are competing, but also working together, sharing common features and complementing each other."* The OECD defines *"clusters as horizontally or vertically interconnected firms in related fields cooperating with support organizations."* Ketels (2003) defined clusters according to two basic characteristics: 1. *geographical concentration of the sector* and 2. *existence of connections among the participants*.

Aggregation (Kliestik and Kral, 2011) or clustering, is searching of connections in the whole (or unit) and then sorting of objects based on similar characteristics into clusters. Based on the aggregation methods ((Zadeh et al., 2014), (Parsapoor et al., 2014), (Abdeyazdan & Marijan, 2014) - are the clusters created. The connections are e.g. supplier-customer relations, common technology, common buyers, distribution channels or common labor market. Clusters varies a lot by geography, products manufactured, services provided, the functions and inter-company connections. The accent is clearly on the existence of relationships among the participating units.

Into the cluster also enter the businesses, between which there are mutually beneficial interactions. Establishment and functioning of the cluster should be based on existing economic entities and on their historically formed relationships. The cluster should not be built on something that does not exist in the same region. Companies joining the clusters are not always from progressive sectors, but also from the declining ones.

The cluster size can significantly vary. There are clusters that characterize multiple production chains and those which contain only one production chain, as well.

In connection with the existence and definition of clusters is often used the term *"cluster initiative"*. Ketels, Ch., Lindqvist, G., Sölvell Ö. (2006) define the cluster initiative as *"an organised effort to increase the growth and competitiveness of a cluster within a region, involving cluster firms, government and/or the research community."* Participants of cluster initiatives, in accordance with this definition, are the companies and at least one of the other sides of the relationship is from industry - government - university. Cluster initiatives can arise even with the support of the government declaration of a program aimed at developing activities and to be even fully or partially funded by the government, which ultimately could mean the creation of new clusters and support of existing ones.

Clusters and cluster initiatives are often interchangeably used in practice. Cluster initiatives are often called clusters.

The way the cluster was created affects its internal organization, the organization of whole cluster. Clusters that arise out of certain initiatives are usually organized in some way. Conversely clusters that arose naturally (ie. there was economic potential, human resources, growth potential, location) are not institutionalized nor formalized and nor organized in any special way. Identification of clusters is usually possible in two ways: The first method is based on quantitative data, it helps to identify key sectors of actual or potential competitive advantage (Kramárová, 2015). It regards the use of available statistical data (eg. number of employees, value added, sales by industry etc.). The second method is based on a qualitative examination of internal processes and connections among existing firms that are in a cluster in certain region. This second method (through qualitative analysis) uses evaluation from experts or the interviews, which are usually used for specialized clusters on which data are not published.

Even though the clusters are formed primarily as an initiative of private companies they are also affected by other entities such as governments, public institutions at national or international level, but also at regional and local levels. Reasons of State intervention may be different eg. inefficient functioning of the market, the limited interaction between the actors in the innovation process, information failure, etc. Public sector intervention should be supporting the clusters and that is because of the following:

- they allow the involvement of small and medium-sized enterprises (SMEs) in mutual cooperation,
- supporting of clusters at the regional level is becoming an important tool for economic development of individual regions,
- they allow SMEs to specialize and to penetrate to large markets of specialized products,
- close contact with customers can be a source of comparative advantage, since close cooperation between suppliers and customers facilitate the searching for new innovative solutions to specific problems,
- the formation of the knowledge specific to the region, workforce acquire the necessary skills, the core innovation continues to develop, and the new ways of its usage are being developed, etc. This has resulted in the arrival of businesses in region so that they could also benefit from the new findings (which are under these circumstances specific for particular region).

Cluster policy is defined as specific government effort to promote clusters. Cluster policies can be classified into three categories, reflecting their motivation, but also political objectives. The first category is support policies focused on improving of business environment, which indirectly stimulate the formation and dynamics of clusters. The second category includes traditional policy framework, such as. industrial policy, SME development, research and innovation policies and the regional policy. The third category are policies aimed at creating, mobilizing and improving clusters in specific sectors. This category is considered to be a strict cluster policy. All government decisions have an impact on the competitiveness of businesses within the cluster.

The most common objective of cluster policies include improving the quality of human resources, cluster expansion, business development, improving cooperation between units and focus on science, research and innovation. Objective of improving human resources is aimed at improving skills through, for instance vocational training and training in management skills. Objective of Cluster expansion aims to increase of number of cluster members. On the way

towards the objective of business development are carried out various activities, such as export promotion. Objectives of commercial cooperation encourages firms in their cooperation.

Governments can encourage the creation and development of clusters primarily through policies and programs that are oriented to promotion and sharing of knowledge. They enable the development of areas that support the development of innovative clusters (education, funding, etc.) through policy frameworks; or create and support initiatives for development of clusters as well as public-private sector of R & D and so forth. (Pavelková, 2009) In practice, this support is currently concentrated in three basic policies:

- Policy of development of science, technology and innovation,
- Policy of development of industry and business,
- Regional policy.

Cluster policy may change over time, it is not isolated or independent, and it can be influenced by several policies. It can change as a result of the economic development of the state, or as a result of the development or strategy of particular region. Well-chosen policy of supporting clusters may lead to growth and reinforcement of competitiveness of selected industries and regions, while in case of bad choices there may be a waste of public resources and the backwardness of the regions. (Burger et al., 2015).

### **3. Clusters and clustering in Slovakia**

Establishment of clusters in Slovakia has started in 2004 and today it is no longer a "modern phenomenon", but the activity of market players who are making efforts to increase the competitiveness and economic growth in each region and in the whole sector and in the whole economy eventually.

The Slovak Republic has so far created about 50 clusters, some of which do not do any work at all. In fact, there were two versions of clusters created, operating in:

- tourism and
- technology.

Their activity is aimed at promoting cross-sector partnerships between businesses, upgrading the skills and qualification level of the employees through the exchange of experience in the use of new technologies, processes and services. Between 2013 and 2014, seven of them received the Bronze Label of the European Cluster Excellence Initiative (ECEI) issued by the European Secretariat for Cluster Analysis. These are the following clusters: Automotive Cluster Slovakia, Slovak plastics cluster, 1st Slovak Engineering Cluster, Kosice IT Valley z.p.o., AT + R Cluster z.p.o., NEK and BITERAP. European Bronze Label also received two clusters of tourism: the Cluster LIPTOV - Tourism Association and Cluster ORAVA.

In Slovakia, we mostly meet the clusters based top-down and the clusters with the participation of public authorities and the participation of all sectors of the economy with the aim of implementation of regional policy into cluster initiatives. Here and now, however, we have to stop and explain the basic concepts presented in the article above so that we could clearly understand what kind of clusters are in Slovakia. Basically it is a cluster initiatives with regional scope (tourism, automotive etc.). The most common legal form of these cluster initiatives is an association of legal entities or civic association. Cluster initiatives with supra-regional character are rare. We have considered that there are also some naturally formed

clusters in the Slovak Republic that are concentrated around large foreign companies. But these are not in the form of organization nor officially identified because they are not confirmed by cluster analysis, because there is an absence of such statistical data processing. Nevertheless, the entities are making the networks which speeded up and in many cases restore cooperation, trust, initiative and flexibility of cooperating entities in several regions. Their cooperation leads towards the efficient use of current capacities with the possibility of increasing and thus strengthening of competitiveness of not only individual entities, but entire regions as well.

The changes that occurred in the Slovak Republic after 1989 also affected the orientation of cluster policies. Market economy and participation in EU set new priorities for economic development and the development of clusters. Common policies for all clusters can be called a policy of economic growth, growth of innovation policy and the policy of increasing competitiveness.

As the support of cluster initiatives, there were identified seven strategic documents relevant (either directly or indirectly) to the development of clusters in the Slovak Republic. We are talking about the following documents:

- National Strategic Reference Framework 2007-2013 (approved in 2006)
- Operational Programme Competitiveness and Economic Growth – 2006
- Innovation Strategy of the SR for 2008 – 2010
- National Strategy of Regional Development of the Slovak Republic
- Through knowledge towards prosperity. Research and Innovation Strategy for Smart Specialisation of the Slovak Republic.
- Operational Programme Research and Innovation 2014
- and for the future, we count on the Europe 2020 and the Horizon 2020 that are supposed to support the development of clustering in Europe.

Financial support and funding intensity of cluster organization is within the Europe various. The problem of clusters received a huge attention in most of the developed countries and budgets of many cluster programs are really high. As an example, we can take the cluster programs in Sweden, Finland, France, Germany, Japan and South Korea. The situation in the Slovak Republic is different compared to most of European Union countries. Slovakia is one of the few EU countries without any currently approved separate cluster strategy. Slovak cluster initiatives must mostly rely on the membership fees of its members, which in many cases are not insignificant amounts of money and they become passive members of these organizations, for instance just like the public universities. All this has an impact on the weak innovative capacity of existing cluster initiatives, which will be reflected in particular regions where there is the absolute lack of the development and applied research, the low level of education and professional workforce. Slovak cluster policy can be regarded as underdeveloped.

Clusters in the Slovak Republic are the cluster initiatives which have the legal form of association of legal entities or civic association. The reason of their creation are the possible solutions of various state projects, and thus the possibility to draw funds. They are created as a group of cooperative enterprises in these projects or as a group of enterprises (subcontractors) that are centred around a large foreign company (typical of cluster initiatives in the automotive industry). These kind of initiatives are missing the strategy for the next operation and many of them are only "surviving". Such cluster initiatives can be also characterized by low innovation activity. Slovak clusters are seeking partnerships and opportunities for their development abroad to ensure their acceptance, sustainability and a certain level of performance.

There is no methodology of statistical reporting designed for the activities of clusters in Slovakia and therefore there is no option for the evaluation of their performance objectively, and none of the methods that are commonly used abroad is suitable, eg. benchmarking and so forth. We believe that there are naturally formed clusters in Slovakia but again, the lack of statistical data allows us not to identify them by any of available method. Therefore, it is necessary to develop the methodology of statistical indicators suitable for identifying of clusters in Slovakia and it is also necessary to unify the related terminology and to define specific terms, such as cluster, cluster initiatives and, if necessary, to set the term cluster organization.

#### 4. Conclusion

At the beginning of globalization, the success of the company was related to its size which played a key role in competitiveness. The globalization today is different, it is more important the size of the cluster. The competitive struggle for the market share changed to the struggle for the share on occasions. The concept of clusters creates the most effective platform for networking, as it includes all forms of communication and transfer of information and knowledge (Tilahun et al., 2014). Clustering involves innovation policies that are creating conditions for dynamic business environment in regions.

The result of the clusters in Slovak regions is the increase of regional attractiveness for new entrants and foreign investors, thereby the increase the number of jobs. That leads to the creation of profits for the subjects and the generation of income in the particular region. Economic growth and employment is increasing in region, which brings the benefits not only for cluster itself and its stakeholders, but also for the entire local and the national economy.

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# MODIFICATION OF MUNDELL-FLEMING EXCHANGE RATE MODEL AND VALIDATING ITS STABILITY IN THE INTERNATIONAL TRADE AND FINANCE

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**Abstract.** The currency exchange rate can be characterized as a monetary value that expresses the value of foreign currencies in the domestic currency or vice-versa. It is essential for ensuring equivalent exchange of goods and services, comparing of particular state economies, etc. The resulting exchange rate defines the offer and demand as well as trust of investors for a certain currency. The biggest advances in historic development of exchange rates were achieved by Robert Mundell and Marcus Fleming who expanded the basic IS-LM model. This paper focuses on Mundell-Fleming model in which the main role is played by the asset mobility that defines the changes in exchange rate as a result of monetary and fiscal policy changes. As there exist several versions of this model I chose the static model which is based on assumption that prices of goods are fixed. In the original model the effect of monetary policy by increasing money supply weakened the long-term exchange rate and shifted the LM curve to the right, whereas the fiscal policy by strengthening the long-term exchange rate and at the same time increasing the investments shifted the IS curve to the right. The aim of this paper is to modify this model by changing some of the parameters and subsequent observation and inspection of its equilibrium and stability. To find the equilibrium and stability we derive a non-homogenous system from this model which consists of two differential equations and solution of the given system is provided in a graphical way.

**Keywords:** Mundell-Fleming model, equilibrium, stability, non-homogenous system

**JEL Classification:** C62, F31, G17

## 1. Introduction

Výmenné kurzy silno ovplyvňujú cezhraničné ekonomické transakcie. Obchod, investovanie, financie, turizmus, migrácia, atď. sú hlboko ovplyvnené medzinárodnými monetárnymi politikami. Vlády mnohých krajín hľadali alternatívy k neistote, ktorá prevláda na medzinárodných menových trhoch. Existujú teoretické aj empirické dôvody pre očakávanie, že globalizácia zvýši dôležitosť výmenného kurzu. Makroekonomické princípy otvorenej ekonomiky teoreticky implikujú, že mobilita kapitálu hlboko ovplyvňuje rozhodnutia v politike výmenného kurzu.

Robert Mundell pred viac ako 40 rokmi ukázal, že vláda finančne integrovanej politiky čelí rozhodnutiu medzi autonómnou monetárnou politikou a fixným výmenným kurzom (Mundel,

1963). Ak sa vláda rozhodne pre fixný kurz, tak mobilita kapitálu zamedzuje dosiahnuť monetárny stav rozdielny oproti referenčnej mene. Na druhej strane, ak sa vláda rozhodne pre nezávislú monetárnu politiku, musí dovoliť, aby sa jej mena hýbala. Tieto obmedzenia znamenajú, že menová politika a výmenný kurz budú pravdepodobne veľmi rozdielne v ekonomike, ktorá je finančne otvorená oproti ekonomike, ktorá nie je. Rovnako sa zvyšujú obavy z rizika medzinárodných finančných a obchodných tokov u tých, ktorí sú v nich zapojení. V relatívne uzatvorenej ekonomike sa iba málo finančných hráčov zaujíma o menové pohyby. Ale s tým, ako sa menová politika globalizuje, čoraz viac firiem, investorov a pracujúcich zisťuje, že ich úspech, či neúspech je viazaný na výmenný kurz a jeho dopad na obchodné a finančné toky. To upriamuje pozornosť na výmenný kurz.

Tradičný prípad stabilných výmenných kurzov ukazuje na výhody ekonomickej integrácie. V otvorenej ekonomike hlavnou výhodou fixného kurzu je nižšie riziko a tiež nižšie transakčné náklady, ktoré sú brzdou medzinárodného obchodu a investícií. Stabilizovaním meny môže vláda posilniť obchod a investície. Fixácia výmenného kurzu však niečo stojí. Výhody väčšej ekonomickej integrácie cez fixáciu výmenného kurzu vyžaduje, aby sa vláda vzdala schopnosti viesť nezávislú monetárnu politiku. Princíp "nemožnej trojice" vysvetľuje, že vlády si musia vybrať dva z troch cieľov: mobilitu kapitálu, stabilitu výmenného kurzu alebo monetárnu nezávislosť (Frieden, 2008).

## 2. Mundell-Flemingov model

Pod Mundell-Flemingovým modelom rozumieme štandardný *IS – LM* model upravený pre podmienky otvorenej ekonomiky.

Existuje niekoľko verzií Mundell-Flemingovho modelu, napríklad statický Mundell-Flemingov model, dynamická deterministická verzia modelu prezentovaná Dornbuschom, či jeho stochastická verzia rozpracovaná Obstfeldom. V príspevku sa budeme venovať prvej z nich, a to jednoduchšej statickej verzii. Statický Mundellov-Flemingov model vychádza z nasledujúcich predpokladov:

- ceny tovarov sú fixné počas celého analyzovaného obdobia,
- domáca krajina je malou otvorenou ekonomikou, t.j. premenné týkajúce sa zahraničia sú fixné. (Chocholatá, 2005)

Pôvodná verzia Mundell-Flemingovho modelu pozostáva z troch základných rovníc:

$$\dot{s} = i - i^* \quad (1)$$

$$m = \sigma s + \kappa y - \theta i \quad (2)$$

$$\dot{y} = \chi(\alpha + \mu s - \psi i - y), \quad (3)$$

kde pre jednoduchosť sú všetky premenné s výnimkou úrokovej miery uvažované v logaritmoch. Nech  $s$  je cena zahraničnej meny,  $i$  je domáca úroková miera,  $i^*$  je zahraničná úroková miera,  $m$  je ponuka peňazí,  $y$  je domáci dôchodok a bodka nad premennou znamená deriváciu v čase;  $\alpha$  je samostatná zložka agregátneho dopytu. Všetky parametre v rovniciach sú kladné, t.j.  $\sigma > 0$ ,  $\kappa > 0$ ,  $\theta > 0$ ,  $\chi > 0$ ,  $\alpha > 0$ ,  $\psi > 0$ .

Ak je trh rizikovo neutrálny, potom očakávaná zmena výmenného kurzu musí byť kompenzovaná nákladmi príležitostí z držby finančných prostriedkov v tejto mene. Táto podmienka je všeobecne nazývaná podmienkou nekrytej úrokovej parity a je zobrazená rovnicou (1) za predpokladu dokonalej predvídateľnosti. Predpoklad dokonalej



predvídateľnosti je ekvivalentný teórii racionálnych očakávaní. Rovnica (2) rozbrazuje rovnovážny stav peňažného trhu, kde predpokladáme, že hladina spotrebiteľských cien  $p^c$  je vážený geometrický priemer cien zahraničného a domáceho tovaru a platí  $p^c = \sigma(s + p^*) + (1 - \sigma)p$ , kde  $\sigma$  je váha priradená zahraničným cenám v indexe spotrebiteľských cien. Predpokladáme, že domáce a zahraničné ceny sú stanovené, potom môžeme  $p$ ,  $p^*$  položiť rovné 0 a v rovnici zostane len  $\sigma s$ .

Rovnica (3) zobrazuje pohyby v celkovom outpute pre zvýšenie dopytu na trhu tovarov a služieb. Output je v konečnom dôsledku dopytovo určujúci, aj keď v krátkom období môžu byť rozdiely medzi celkovým dopytom a ponukou v závislosti od pohybov dopytu. Celkový dopyt môže byť tiež funkciou outputu, a to je v súlade s rovnicou (3), pokiaľ hraničný sklon  $k$  spotrebe je menší ako 1. (Sarno & Taylor, 2002), (Shone, 2002), (Hutirova, 2013).

### 3. Modifikácia Mundell-Flemingovho modelu

V tejto časti budeme uvažovať pozmenený Mundell-Flemingov model, t.j.

$$\dot{s} = i - i^* \quad (4)$$

$$m = \sigma s + \kappa y - \theta i \quad (5)$$

$$\dot{y} = \alpha - \mu s - \psi i - r y. \quad (6)$$

Pretože dopyt po peniazoch závisí pozitívne od ceny zahraničnej meny a od domáceho dôchodku, sú parametre v rovniciach (5), (6) kladné, t.j.  $\sigma > 0$ ,  $\kappa > 0$ ,  $\theta > 0$ ,  $\alpha > 0$ ,  $\psi > 0$ ,  $\mu > 0$ ,  $r > 0$ . Musí byť tiež splnená podmienka  $\frac{\sigma}{\theta} s < t < \frac{\kappa \mu}{\sigma}$ .

Z rovnice (5) si vyjadríme  $i = \frac{\sigma}{\theta} s + \frac{\kappa}{\theta} y - \frac{m}{\theta}$  a dosadíme do rovnice (4). Dostaneme

$$\dot{s} = \frac{\sigma}{\theta} s + \frac{\kappa}{\theta} y - \frac{m}{\theta} - i^* \quad (7)$$

Z rovnice (6) dostaneme po úprave

$$\dot{y} = - \left( \mu + \frac{\sigma \psi}{\theta} \right) s - \left( r + \frac{\kappa \psi}{\theta} \right) y + \alpha + \frac{m \psi}{\theta} \quad (8)$$

Dostali sme systém

$$\begin{aligned} \dot{s} &= \frac{\sigma}{\theta} s + \frac{\kappa}{\theta} y - \frac{m}{\theta} - i^* \\ \dot{y} &= - \left( \mu + \frac{\sigma \psi}{\theta} \right) s - \left( r + \frac{\kappa \psi}{\theta} \right) y + \alpha + \frac{m \psi}{\theta}, \end{aligned}$$

ktorý zapíšeme v maticovom tvare

$$\begin{pmatrix} \dot{s} \\ \dot{y} \end{pmatrix} = \begin{pmatrix} \frac{\sigma}{\theta} & \frac{\kappa}{\theta} \\ -\mu - \frac{\sigma \psi}{\theta} & -r - \frac{\kappa \psi}{\theta} \end{pmatrix} \begin{pmatrix} s \\ y \end{pmatrix} + \begin{pmatrix} -\frac{m}{\theta} - i^* \\ \alpha + \frac{m \psi}{\theta} \end{pmatrix}.$$

Za predpokladu, že  $\psi$  je veľmi malé číslo, môžeme ho položiť rovné nule a dostaneme

$$\begin{pmatrix} \dot{s} \\ \dot{y} \end{pmatrix} = \begin{pmatrix} \frac{\sigma}{\theta} & \frac{\kappa}{\theta} \\ -\mu & -r \end{pmatrix} \begin{pmatrix} s \\ y \end{pmatrix} + \begin{pmatrix} -\frac{m}{\theta} - i^* \\ \alpha \end{pmatrix}. \quad (9)$$

Keď položíme  $\dot{S} = 0$ , dostaneme body, v ktorých nastáva rovnovážny stav na trhu peňazí a ktoré nazývame LM krivkou. Ak položíme  $\dot{y} = 0$ , dostaneme body, v ktorých nastáva rovnováha na trhu tovarov a služieb a nazývame ich krivkou IS. Matica koeficientov systému (9) je

$$A = \begin{pmatrix} \frac{\sigma}{\theta} & \frac{\kappa}{\theta} \\ -\mu & -r \end{pmatrix}.$$

Vlastné čísla matice A dostaneme ako korene charakteristickej rovnice  $\det(a - \lambda E) = 0$ , t.j. z rovnice

$$\begin{aligned} & -(r + \lambda) \left( \frac{\sigma}{\theta} - \lambda \right) + \frac{\kappa\mu}{\theta} = 0, \\ & \text{t.j.} \\ & \lambda^2 + \left( r - \frac{\sigma}{\theta} \right) \lambda + \frac{\kappa\mu}{\theta} - \frac{\sigma r}{\theta} = 0. \end{aligned} \quad (10)$$

Z podmienky  $\frac{\sigma}{\theta} s < t < \frac{\kappa\mu}{\sigma}$  vyplýva, že  $r - \frac{\sigma}{\theta} > 0$ ,  $\frac{\kappa\mu}{\theta} - \frac{\sigma r}{\theta} > 0$ . Potom pre korene  $\lambda_1, \lambda_2$  charakteristickej rovnice (10) platí

$$\begin{aligned} \lambda_1 + \lambda_2 &= -\left( r - \frac{\sigma}{\theta} \right) < 0, \\ \lambda_1 \cdot \lambda_2 &= \frac{\kappa\mu}{\theta} - \frac{\sigma r}{\theta} > 0. \end{aligned}$$

Z týchto vzťahov vyplýva, že  $\lambda_1 < 0, \lambda_2 < 0$ , a teda kritický bod (rovnovážny stav) systému (9) je stabilný. Diskriminant charakteristickej rovnice (10) je  $D = \left( r - \frac{\sigma}{\theta} \right)^2 + \frac{4}{\theta} (\kappa\mu - \sigma r)$ . Ak je  $D \geq 0$ , potom kritický bod systému (9) je stabilný uzol. Ak  $D < 0$ , potom kritický bod systému (9) je stabilné ohnisko.

Určíme si vlastný vektor, ktorý zodpovedá prvému vlastnému číslu  $\lambda_1$ , čo je vektor spĺňajúci vzťah

$$\begin{pmatrix} \frac{\sigma}{\theta} - \lambda_1 & \frac{\kappa}{\theta} \\ -\mu & -r - \lambda_1 \end{pmatrix} \begin{matrix} \rightarrow \\ v_1 \end{matrix} = \begin{matrix} \rightarrow \\ 0 \end{matrix},$$

a druhému vlastnému číslu  $\lambda_2$

$$\begin{pmatrix} \frac{\sigma}{\theta} - \lambda_2 & \frac{\kappa}{\theta} \\ -\mu & -r - \lambda_2 \end{pmatrix} \begin{matrix} \rightarrow \\ v_2 \end{matrix} = \begin{matrix} \rightarrow \\ 0 \end{matrix}.$$

Dostaneme dva vlastné vektory  $\begin{matrix} \rightarrow \\ v_1 \end{matrix} = (r + \lambda_1, -\mu)^T, \begin{matrix} \rightarrow \\ v_2 \end{matrix} = (r + \lambda_2, -\mu)^T$ .

Všeobecné riešenie homogénneho systému, ktoré zodpovedá daným vlastným číslam a vlastným vektorom tvorené dvojicou lineárne nezávislých riešení, kde  $C_1, C_2$  sú reálne čísla, je

$$\begin{pmatrix} s \\ y \end{pmatrix} = C_1 \begin{pmatrix} r + \lambda_1 \\ -\mu \end{pmatrix} e^{\lambda_1 t} + C_2 \begin{pmatrix} r + \lambda_2 \\ -\mu \end{pmatrix} e^{\lambda_2 t}.$$

Keď položíme  $\dot{s} = 0$  a  $\dot{y} = 0$  v systéme (9), dostaneme rovnice

$$\frac{\sigma}{\theta} s + \frac{\kappa}{\theta} y - \frac{m}{\theta} - i^* = 0$$

$$-\mu s - ry + \alpha = 0.$$

Ich riešením dostaneme rovnovážny stav – kritický bod systému

$$[s, y] = \left[ \frac{\kappa\alpha - mr - \theta i^* r}{\mu\kappa - \sigma r}, \frac{\mu m + \mu\theta i^* - \alpha\sigma}{\mu\kappa - \sigma r} \right].$$

#### 4. Grafické znázornenie

Pre parametre  $\alpha = 1, r = 1, \theta = 25, \sigma = 1, \kappa = 2, \mu = 1, m = 0.5$  a  $i^* = 0.04$  systém diferenciálnych rovníc

$$\begin{aligned}\dot{s} &= \frac{\sigma}{\theta}s + \frac{\kappa}{\theta}y - \frac{m}{\theta} - i^* \\ \dot{y} &= -ry - \mu s + \alpha,\end{aligned}$$

má tvar

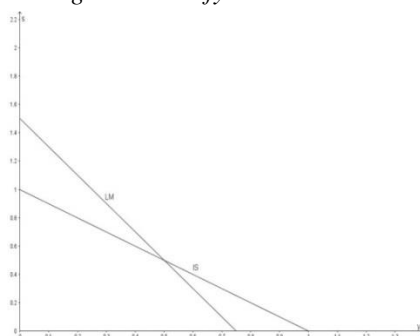
$$\begin{aligned}\dot{s} &= 0.04s + 0.08y - 0.06 \\ \dot{y} &= -y - s + 1.\end{aligned}$$

Krivky LM a IS majú rovnice

$$\begin{aligned}0 &= 0.04s + 0.08y - 0.06, \quad (LM) \\ 0 &= -y - s + 1 \quad (IS).\end{aligned}$$

Pretože diskriminant  $D = \left(r - \frac{\sigma}{\theta}\right)^2 + \frac{4}{\theta}(\kappa\mu - \sigma r)$  je kladný,  $\frac{\sigma}{\theta}s < t < \frac{\kappa\mu}{\sigma}$ , rovnovážny stav  $(y, s) = (0.5, 0.5)$  je stabilný uzol. Riešenie systému (9) je znázornené na Fig. 1.

Figure. 1: Grafy kriviek LM a IS



Ak by sme zvolili parametre  $r = 2, \theta = \sigma = 1, \alpha = \kappa = \mu = 2, m = 0.5$  a  $i^* = 1$ , dostaneme systém diferenciálnych rovníc, ktorý má tvar

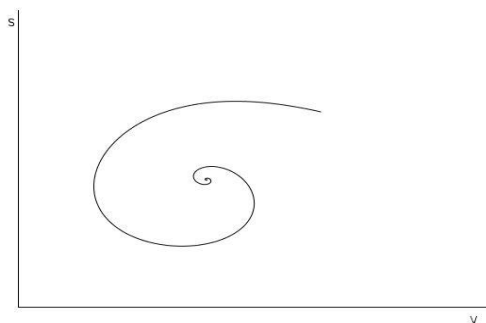
$$\begin{aligned}\dot{s} &= s + 2y - 1.5 \\ \dot{y} &= -2y - 2s + 2.\end{aligned}$$

Krivky LM a IS majú rovnice

$$\begin{aligned}0 &= s + 2y - 1.5, \quad (LM) \\ 0 &= -2y - 2s + 2 \quad (IS).\end{aligned}$$

Pretože diskriminant  $D = \left(r - \frac{\sigma}{\theta}\right)^2 + \frac{4}{\theta}(\kappa\mu - \sigma r)$  je v tomto prípade záporný, t.j.  $D = -7$  a  $r - \frac{\sigma}{\theta} > 0$ , rovnovážny stav  $(y, s) = (0.5, 0.5)$  je stabilné ohnisko. Riešenie systému (9) je znázornené na Fig. 2.

Figure 2: Graf ohniska

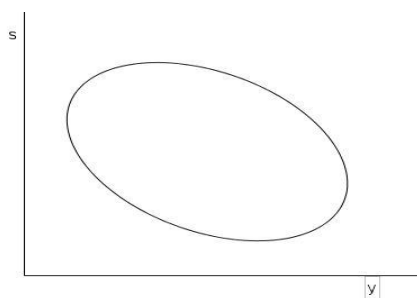


Pre parametre  $r = \theta = \sigma = 1$ ,  $\kappa = \mu = 2$ ,  $\alpha = 1.5$ ,  $m = 0.5$  a  $i^* = 1$ , dostaneme systém diferenciálnych rovníc, ktorý má tvar

$$\begin{aligned}\dot{s} &= s + 2y - 1.5 \\ \dot{y} &= -y - 2s + 1.5.\end{aligned}$$

Pretože diskriminat je záporný a charakteristická rovnica má rýdzoimaginárne korene, rovnovážny stav  $(y, s) = (0.5, 0.5)$  je centrum. Trajektória riešenia je uzavretá krivka (Fig. 3).

Figure 3: Graf uzavretej krivky - centrum



## 5. Mundell-Flemingov model v monetárnej a fiškálnej politike

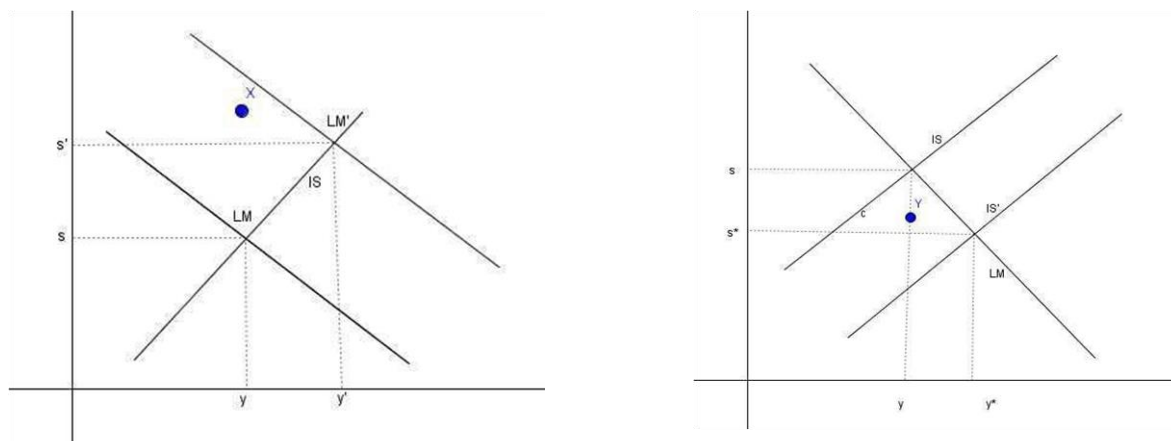
Zvýšenie ponuky peňazí spôsobí posun krivky  $LM$  doprava. Vznikne nová krivka  $LM'$ . Nastane situácia, že dlhodobý výmenný kurz začne oslabovať. Rovnováha, ktorá prechádzala bodom  $[y, s]$  prejde do novej dlhodobej rovnováhy v bode  $[y', s']$ . Output sa hneď neprispôbi novej situácii a ani rovnováha neprejde priamo z bodu  $[y, s]$  do bodu  $[y', s']$ . Výmenný kurz sa dostane na svoju dlhodobú rovnováhu do bodu  $X$  (Obr.4). Output sa pomaly upravuje a bod  $X$  sa presúva do novej rovnováhy v bode  $[y', s']$ .

Vplyvom fiškálnej politiky nastane pohyb  $IS$  krivky doprava. Vznikne nová krivka  $IS'$ . Dlhodobý výmenný kurz posilňuje. Uzol, ktorý pôvodne prechádzal bodom  $[y, s]$ , musí prejsť do novej dlhodobej rovnováhy v bode  $[y^*, s^*]$ . Keďže outputu bude trvať dlhšie, než sa prispôbi vyššej úrovni celkového dopytu, nemôže ani rovnováha prejsť priamo z bodu  $[y, s]$  do

$[y^*, s^*]$ . Výmenný kurz namiesto toho výskočí nad svoju dlhodobú rovnováhu, do nového uzla  $Y$  (Obr.5). Keď sa output pomaly upraví, bod  $Y$  sa posunie do novej dlhohodobej rovnováhy v bode  $[y^*, s^*]$  (Hutirová, 2013).

Fig. 4 (vľavo): Monetárna politika v Mundell-Flemingovom modeli

Fig. 5 (vpravo): Fiškálna politika v Mundell-Flemingovom modeli



## 6. Conclusion

Vo všeobecnosti každý spojitý časovo závislý proces možno opísať sústavou diferenciálnych rovníc. Pomocou tejto analýzy sa vyšetrujú vlastnosti diferenciálnych rovníc s jedným alebo viacerými parametrami. Pomocou nej dokážeme určiť, za akých podmienok sa systém bude správať deterministicky, či už bude konvergovať do nejakého stabilného stavu, resp. vytvorí sa cyklus stavov, medzi ktorými sa bude pohybovať alebo bude divergovať do chaosu. (Bachratý)

V práci som sa zaoberala nehomogénnym systémom dvoch diferenciálnych rovníc a ich aplikáciou v ekonomickom modeli výmenného kurzu. Tento systém je vyriešený a taktiež je vyšetrená aj jeho stabilita, čo je graficky znázornené.

Mundell-Flemingov model bol porovnaný v monetárnej a fiškálnej politike. Vplyv monetárnej politiky spôsobil zvýšenie outputu. Zvýšenie ponuky peňazí vyvolalo posun  $LM$  krivky doprava a oslabenie dlhodobého výmenného kurzu. Fiškálna politika naopak posilnila dlhodobý výmenný kurz s dlhodobým zvýšením outputu, čo spôsobilo zvýšenie investícií a tým posun  $IS$  krivky doprava.

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# INTEGRATED MANAGEMENT ANALYSIS OF INNOVATION PERFORMANCE IN CONDITIONS OF GLOBALIZATION

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**Abstract.** One of the key goals of any company willing to survive and thrive in today's conditions of globalization is to create and solidify its competitive advantages. The level and effectiveness of innovation in the company largely determines whether the goal is achieved. It is only possible to manage innovation effectively when this activity is viewed as an integral system that pulls together all processes of developing, creating and operating innovative facilities into a single innovation project. In order to manage such projects effectively, appropriate methods, procedures and indicators of management analysis need to be developed and applied. This type of management analysis is of comprehensive nature and includes the analysis of innovation performance, investment analysis, competitor analysis and marketing analysis. The main purpose of such analysis is to provide the managers and owners of the company with full, reliable and quality information about its innovation performance, untapped reserves and opportunities for their mobilization. When designing a system of indicators for integrated management analysis of innovation performance, priority is given to science and technology indicators and those of competitiveness, quality, heuristic and commercial potential of innovations. The results of such analysis could be used for substantiating the choice of alternative innovation projects that meet the criteria of this or that area of analysis; identifying the possibility of applying non-standardized analysis methods when conducting integration procedures and selecting the most successful innovation project; obtaining an overall assessment of innovation performance, trends and development factors.

**Keywords:** integrated management analysis, innovation performance, company

**JEL Classification:** L29, M19, M49

## 1. Introduction

One of the key tasks for any company willing to survive and thrive in today's conditions of globalization is to create and solidify its competitive advantages (Kach et al., 2015), (Ukpere, 2010). The level and effectiveness of innovation in the company largely determines whether the task is accomplished. Competition drives companies to build their economic strength by making a better use of available production and financial resources as well as by attracting investors for business overhaul or expansion (Gorodnichenko et al., 2010), (Lai, Lin, & Wang, 2015). This is preceded by innovative efforts in order to develop options for capital investment

with the purpose of identifying and maintaining competitive advantages (Mostafi, Abraham et al., 2011), (Thoenig & Verdier, 2003).

At the same time, it is only possible to manage innovation effectively when this activity is viewed as an integral system that pulls together all processes of developing, creating and operating innovative facilities into a single innovation project (Martinez-Torres, 2014), (Parto, 2008), (Walker et al., 2015).

In order to manage such projects effectively, appropriate methods, procedures and indicators of management analysis need to be developed and applied (Kim et al., 2012) (Krylov, 2013), (Miorando et al., 2014). This, in turn, calls for identifying their place in today's market economy.

When defining the most important organizational and methodological aspects of this conceptually new type of management analysis one should assume that integrated management analysis of innovation performance is meant to combine the analysis of innovation performance as well as investment, competitor and marketing analysis.

## **2. Objectives and methodological principles of integrated management analysis of innovation performance**

Integrated management analysis of innovation performance studies innovation (in the widest sense of the word, that is, including investment) in companies that have already shifted to an innovation-driven model of development, or are in the process of such transition.

The subject of integrated management analysis is the entirety of processes that generate required resources, costs and results in the course of innovation in a company.

The key purpose of integrated innovation analysis is to provide the managers and owners of the company with full, reliable and quality information about its innovation performance, untapped reserves and opportunities for their mobilization.

This objective breaks down into local goals (subgoals) that correspond to each of the four local types of management analysis.

To make integrated analysis more scientific, specific principles of its application should be established, such as the principles of the "key driver" (that being innovation analysis) in partially integrated analysis, of the priority of the company's innovative activity within the sixth wave of innovation, as well as the principle of balance (of various stages of research and innovation; of one's own and borrowed innovative solutions).

## **3. System of analytical indicators**

We believe that among the numerous indicators that characterize integrated innovation priority should be given to those of scientific and technical impact, competitive ability, quality, comprehensiveness and marketability of innovations (Ilysheva & Ilyshev, 2004), (Ilyshev et al., 2005).

It appears worthwhile to consider the suggested indicators, first of all, within homogenous groups (based on each of the four local types of management analysis); secondly, to grade the analytical indicators according to three stages of the innovation process: the creation of an innovation; its adoption and obtaining the results (Ilysheva & Krylov, 2014).



Table 1 presents a system of 21 ultimate indicators for the comprehensive assessment of a company's innovation performance that was designed by the authors. The indicators are bundled together to form four groups corresponding to the local types of management analysis for their further integration.

*Table 1: System of ultimate indicators of integrated management analysis of a company's innovation performance*

Indicator of integrated management analysis of a company's innovation performance	Stages of innovation process		
	Creation of innovation	Adoption of innovation	Obtaining results
1. Indicators of innovation analysis:	+	+	+
1.1. of the breakthrough nature of innovation	+	-	-
1.2. of scientific and technological impact	-	+	-
1.3. of innovative involvement	-	-	+
1.4. of innovation marketability	+	-	-
1.5. of innovation incentives	-	-	+
2. Indicators of competitor analysis:	+	+	+
2.1. of competitive advantage	-	-	+
2.2. of innovation intensity	+	+	-
2.3. of process innovation intensity	-	-	+
2.4. of technological dependence	-	+	-
2.5. of legal protection of innovations	-	-	+
2.6. of design phase length	+	-	-
3. Indicators of marketing analysis:	+	+	+
3.1. of comprehensive product innovation	-	-	+
3.2. of adoption of cutting-edge technology	+	-	-
3.3. of demand for process innovations	-	-	+
3.4. of application versatility	-	+	-
4. Indicators of financial and investment analysis:	+	+	-
4.1. of government-backed financing	+	+	-
4.2. of the company's dependence on commercial loans	+	+	-
4.3. of the company's financial independence	+	+	-
4.4. financial indicator of technological dependence	+	+	-
4.5. of capital participation by foreign investors	+	+	-
4.6. of capital participation by domestic investors	+	+	-

*Source: the table was developed by the authors*

Let's consider the makeup of each group of indicators.

The first one combines five indicators of innovation analysis itself. They mainly characterize the scientific and technical level of innovations being developed. The indicators that we include in the group are:

- the indicator of the breakthrough nature of innovation (1.1) that reflects the share of cutting-edge process and product innovations in the total number of process and product innovations;
- the indicator of scientific and technological impact of adopted innovations (1.2) shows the share of novel product innovations (that is, excluding modifications and upgrades) in the total number of product innovations;
- the indicator of innovative involvement (1.3) is the share of all innovative products, including modifications and upgraded ones, in the company's output;

- the indicator of innovation marketability (1.4) is calculated as an average number of license agreements per process or product innovation;
- the indicator of innovation incentives (1.5) is the ratio of net profit from innovation (in the broadest sense of the word) to the company's salary budget for innovation workers;

The above indicators of innovation analysis reflect primarily the scientific and technical level of the process of creating innovation, its market capabilities and incentives for innovation. However, it would be hard for a company to become truly established and succeed in this field by only paying attention to these indicators and ignoring rivals' achievements. It is necessary to exploit the possibilities of competitor analysis that draws upon the data of competitive intelligence that seeks to reveal the strengths and weaknesses of the key competitors (Ilyshev et al., 2010).

The second group of indicators – those of competitor analysis – include six analytical indicators:

- the indicator of competitive advantage (2.1) is a mean score value of competitiveness of innovative products. It is calculated based on the share of innovative products at each level of competitiveness in the total amount of shipped innovative products and the score value of each level of competitiveness;
- the indicator of innovation intensity (2.2) shows the total number of created process or product innovations per developer;
- the indicator of process innovation intensity (2.3) is calculated by dividing the number of employed process innovations by the total number of technological processes;
- the indicator of technological dependence (2.4) is the ratio of process or product innovations employed (adopted) under license agreements to the total number of created process or product innovations;
- the indicator of legal protection of innovations (2.5) is calculated as the ratio of the number of product innovations that are protected by at least two documents (a patent, a utility model, a design patent or a registered trademark) to the total number of created product innovations;
- the indicator of design phase length (2.6) shows the average time (number of years) required for creating (adoption, employment) of process or product innovations;

The indicators of competitor analysis describe only the relations of the company being studied with its existing and potential competitors and ensuing improvements to its strategy of innovation. It is, therefore, necessary to combine innovation and competitor analysis with marketing research data.

The third group of indicators – those of marketing analysis – is made up of four analytical indicators:

- the indicator of comprehensive product innovation (3.1) is the ratio of the number of product innovations that conform to a set of key requirements (economic, after-sales service, consumer safety) to the total number of created product-innovations;
- the indicator of adoption of cutting-edge technology (3.2) is the share of advanced technologies in use by the company that employ process innovations to the total number of advanced technologies (under the Classification of the Federal State Statistics Service);

- the indicator of demand for process innovations (3.3) is the ratio of the number of designed and employed process innovations in the company to the total number of process innovations it designed that have found application across the industry;
- the indicator of application versatility (3.4) is calculated as the ratio of the fields of application of process/ product innovations to the total number of consumer markets in the national economy.

The above indicators of marketing analysis reflect the standing of a company that is engaged in innovation in the market of innovation.

Six indicators are included in the fourth group – that of financial and investment analysis:

- the indicator of government-backed financing (4.1) is the proportion of the amount of received public funding to total spending on innovation from all sources of financing;
- the indicator of the company's dependence on commercial loans (4.2) is calculated by dividing the amount of commercial loans for innovation by the total amount of money spent on innovation that comes from all sources of financing;
- the indicator of the company's financial independence (4.3) the ratio of the company's own funds invested in innovation to total spending on innovation from all sources of financing;
- the financial indicator of technological dependence (4.4) is the proportion of money spent to buy license-protect innovations to total spending on innovation from all sources of financing;
- the indicator of capital participation by foreign investors (4.5) is the ratio of foreign investment in innovation to total investment in innovation in the company;
- the indicator of capital participation by domestic investors (4.6) is computed as the ratio of domestic investment in innovation to total investment in innovation in the company.

The above-described indicators of financial and investment analysis lay out the sources of financing and investment in innovation in the company being studied.

#### **4. Information sources and methods**

We believe that the main sources of information for integrated management analysis of innovation activities are up-to-date statistics, financial accounting data, findings of a specially conducted expert survey in the industry being studies, competitive intelligence data and the results of consumer and customer surveys.

When selecting a method of integrated management analysis of innovation, one can opt for any of the six classification groups of methods (Kovalev, 2004): non-formal (logical) method, elementary methods of microeconomic analysis; traditional methods of economic statistics, mathematical and statistical methods, methods of decision theory, methods of financial computing.

#### **5. Areas of application**

The obtained results of analysis can be used:

- for the development of the theory and methodology of economic analysis to substantiate the choice of alternative innovation projects that meet the criteria of a specific area of

local analysis and to identify the possibility of applying non-formal analysis methods when conducting integration procedures and selecting the most successful innovation project;

- for improving information and analytical provision for managerial decision making in order to obtain a comprehensive assessment of innovation performance, trends and development factors; to identify untapped reserves and opportunities for growth; to work out a range of extrapolation and exploration forecasts for the short-term, mid-term and long term perspective; to design a concept for the development and improvement of innovation management in the foreseeable future; to create alternative strategies for reaching innovation goals; to develop targeted regional programmes of state support for priority innovation areas; to build a system of indicators and monitoring of innovation.

## 6. Conclusion

The previous sections enable us to come to the following conclusions:

- it is only possible to manage innovation effectively when this activity is viewed as an integral system that pulls together all processes of developing, creating and operating innovative facilities into a single innovation project;
- the effective management of such a project calls for developing and employing a new kind of management analysis – integrated management analysis of innovation that incorporates the analysis of innovation performance, investment analysis, competitor analysis and marketing analysis;
- the obtained analytical results can be used not only for enhancing information and analytical provision of innovation management in a company, but also for further development of the theory and methodology of economic analysis.

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## THE EFFECTS OF GLOBALIZATION TO THE FINNISH ECONOMY AND INDUSTRY 1995 - 2016

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**Abstract.** Finland became a member of the European Union at 1995 and since that there has occurred drastic changes in both national economy and industrial structure. The EU membership and globalization has already caused fundamental structural changes in both Finnish economy and industry and the process is still in motion. The pre-2008-crisis period was in many ways both economically and industrially successful to Finland despite several structural problems originating far before our EU-membership. The Finnish economy has traditionally been very dependent on relatively small number of export industries like wood processing industry, heavy metal industry and electro-technical industry. Because of our especially big need for imported energy (oil, coal, gas and electricity) lots of exports revenues are required for keeping the trade balance in surplus in order to finance our high standard of living and social welfare. The global economic collapse of 2008 hit Finnish economy and industry especially hard and the followed prolonged international economic depression has effected the Finnish economic and industrial structure dramatically. The main challenge is nowadays to define, how to restart the economy and industry and the main problem is to find out, how much we can do in Finland to help ourselves and how many of the critical factors are given outside.

**Keywords:** globalization, economy, industry, Finland

**JEL Classification:** J6, N6, O1

### 1. Introduction

The Finnish economical structure changed slowly at the beginning of the 20th century until WW II. The agriculture represented the biggest part of the Finnish economy and the land reform at the beginning of the Finnish independence (since 1917) even made the share of agriculture bigger. (Myrskylä, 1997).

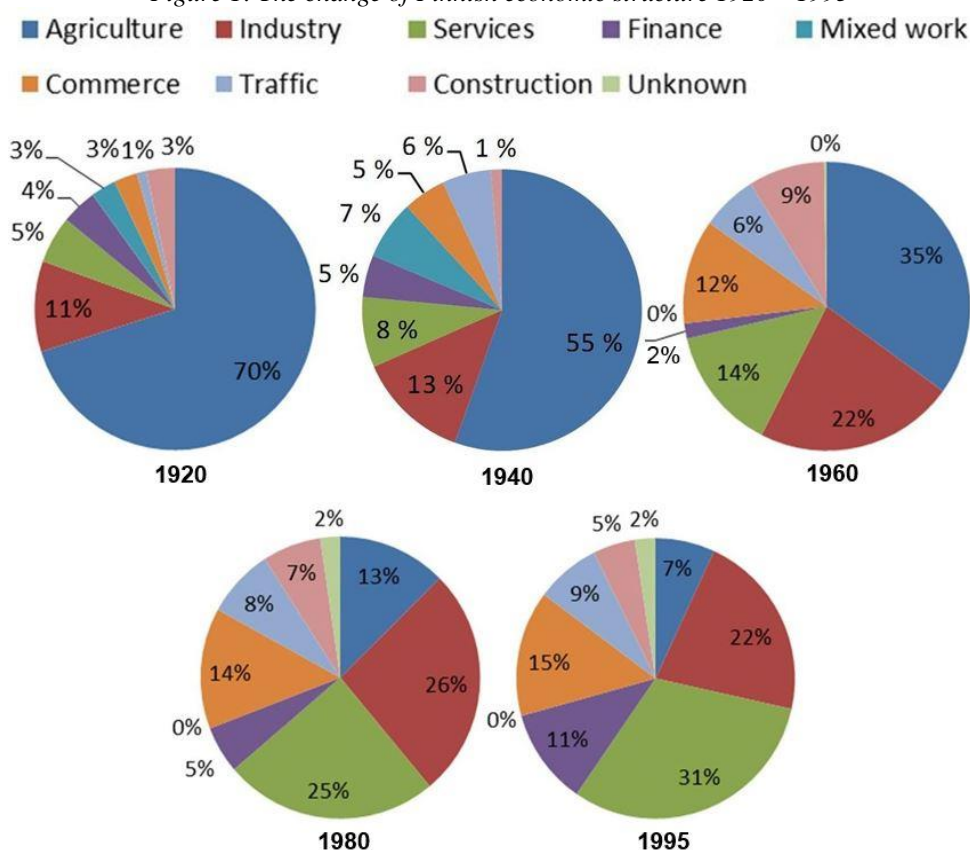
The industrialisation, which started at 1920's, continued steadily until the second world war. Despite the global recession of the 1930's Finnish new economic policies were highly successful. The volume of Finnish industrial production increased by almost 12 % annually in the immediate post-WW1 years. This was faster than the average growth of world trade. The wealth created by the volume of exports and the very favorable trade balance was widely dispersed throughout society. Globalization in Finland was quite small and the industrial exports were mainly pulp, paper and timber products.

The nation's standard of living improved rapidly, and for the first time, people had money to spend on fashionable clothes, new technological appliances, automobiles and entertainment.

The rapid and steady economic development in Finland was exceptional relative to other small Eastern European states. Tariff protection and other policy measures had helped to raise the domestic grain production to 80–90 % of consumption by 1939.

The rapid growth of commerce and traffic began after the WWII. In the next 50 years the shares of commerce was 5-folded and industry was 3-folded. The war compensations to USSR and rebuilding required a rapid creation of industry – especially heavy industry, which later became one of the stars of the Finnish export. Social services, education and public health care were massively improved after the WW II and this caused rapid growth in services.

Figure 1: The change of Finnish economic structure 1920 – 1995



Source: Myrskylä & Pekka. (1997)

After the rebuilding and war compensations were done was Finland an industrial country and the structural change continued. In addition to the traditional pulp, paper and timber exports also the machine industry and later electro technical industry made Finland a significant operator in the more globalized world markets. The Finnish export industry increased national wealth because of relatively low labour costs and quite high technical quality of the most important export products.

During the 1950's and 1960's an important strategic decision was made: our small nation is not able to compete in global markets without full utilisation of our human resources. This meant that each Finnish young must have equal possibilities for vocational or academic education even to the highest level despite sex or social background. So by the 1970's totally equal education system was created and since that the only thing limiting educational progress has been individual talent and willingness to study.

This policy has produced plenty of highly skilled work force for the most demanding needs in industry, service and administration and ensured the development of relatively small nation to a prosperous industrial country.

Globalization was had very positive effect for Finnish economy and industry – especially because Finland had good trade relations and agreements with both western and eastern blocks. One can say that Finland experienced especially beneficial global position between east and west cooperating mutually beneficial way with both blocks.

By 1980's the welfare state was created and the standard of living was nearing the average of the European industrial countries. The significances of industry, services and commerce exceeded the significance of agriculture and Finland transited from agricultural economy via industrial economy to service economy. All this laid the foundation for the growth and prosperity period which lasted until 1990, the downfall and recovery during 1990 – 2008 and the current and future challenges of the Finnish economy.

The first crisis was the mass immigration from countryside to towns and cities during 1960's and 1970's. All the people leaving their countryside homes and farms did not found work and hundreds of thousands, mostly young, people immigrated to Sweden in order to work there, especially on the rapidly growing Swedish automotive industry. During the 1960's and early 1970's about 20 000 people immigrated to Sweden and the peak years 1969 and 1970 about 40 000 people immigrated to Sweden. All in all, nearly half a million people went to Sweden to work for some period of time and about half of them stayed permanently. (Vilkuna, 2003).

The 1980's were watershed years in the Finnish economic structure. The liberalisation of the financial markets at 1985 started an unprecedented period of growth in the Finnish economy, but it was mostly financed by excessive debts. Until the 1980's the Finnish banking sector and international capital flows were heavily regulated, which meant low risks and practically no credit losses. The financial deregulation started in the mid-1980's following the international pattern.

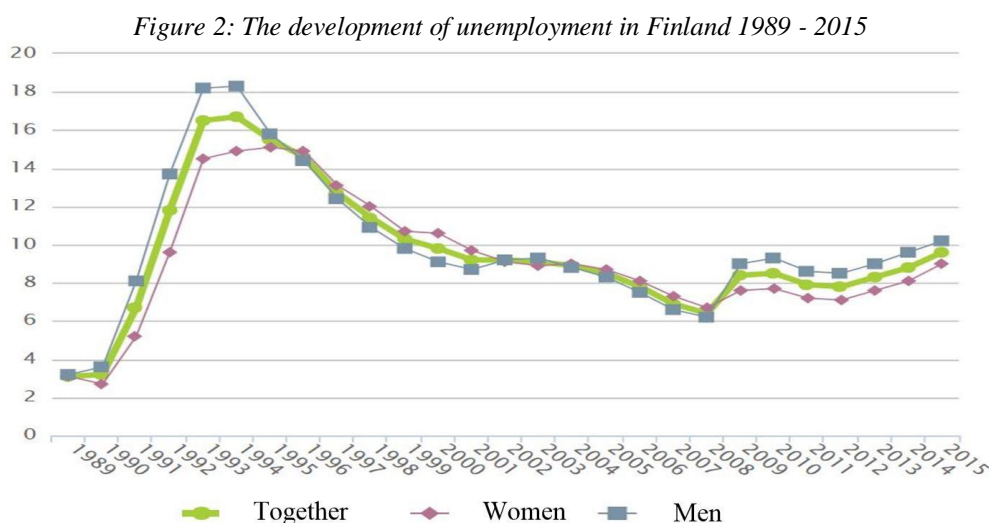
After the financing gates were opened a flow of foreign credit increased rapidly domestic liquidity 1986 – 89. This credit expansion fuelled an investment boom and asset price bubble in 1987 – 90. /3/ The banks – enjoying fully with the new unrestricted economic politics – were actively expanding their financing to both private loaning and company financing. Money was literally pushed to the markets and the economical viability of the customers or their collaterals became secondary. The globalization of finance market pushed the Finnish economy into unprecedented growth and overheated bubble economy.

Eventually the Finnish economy was overheating and all collapsed at the autumn of 1990. The Finnish economy was hit by the collapse of the USSR, which was a significant export country (in the 1980's the exports to Soviet Union was about 15 – 20 % of the whole Finnish exports), and our bubble economy collapsed. (Available on: <http://www.eva.fi>).

Especially the clothing, shoemaking and textile industrias were hit severely, because those were strongly dependent on the collapsed Soviet exports. In a way Finland became an economic collateral damage of the global change and the relative narrow industrial base (wood/paper, machine and electrotechical industries) made Finnish economy vulnerable for these global changes. The result was an unprecedented downfall and recession in the Finnish economy. The followed 4,5-year depression wiped out half a million workplaces mostly from construction, industry and commerce. The official unemployment rate rose from 3,1 % (1989) to a 16,7 %



(1994). /3/ As seen on the Figure 2 the Finnish unemployment exploded after 1990 and the dramatic development continued until 1995.



Source: Elinkeinoelämän valtuuskunta. (August 2016)

## 2. The Finnish EU membership 1995

Finnish government applied for the EU membership at the 18<sup>th</sup> of March 1992 and the membership negotiations started at the 1<sup>st</sup> of January 1992. The Finnish EU membership was submitted to an advisory referendum over EU membership at the 16<sup>th</sup> of October 1994. 56,9 % of the given votes were supporting the EU membership and the Finnish parliament respected the result and made the final decision to join EU at the 18<sup>th</sup> of November 1994. Finland joined officially the EU at the 1<sup>st</sup> of January 1995. Finland joined the European Monetary Union at 1<sup>st</sup> of January 1999 and 1<sup>st</sup> of January 2002 Finland joined the EURO-zone.

The EU membership enhanced the slowly started economic growth significantly and the following 12 years were the period of strong economic growth in Finland – at least according to the economic statistics. Of course the starting situation was unique. After nearly 5 years of economic freefall growth started again and the economy begun to recover rapidly. This required lots of efforts by the government and the persistently high unemployment rate cost a lot of budget money.

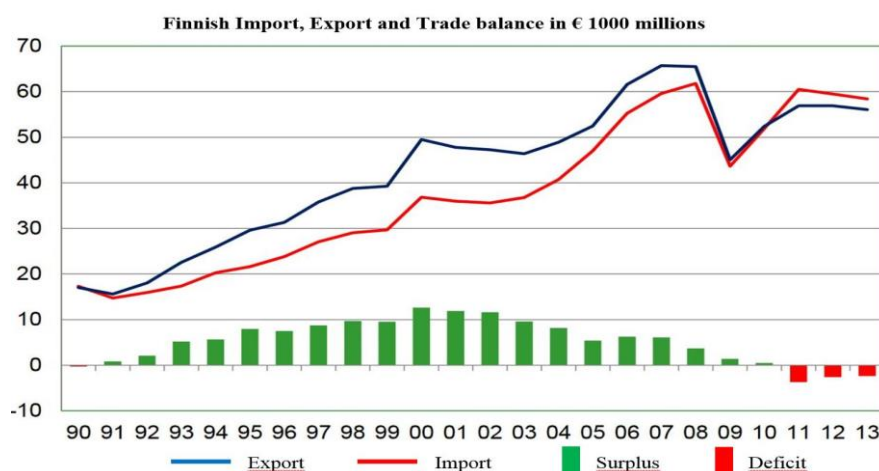
The EU membership opened the EU-markets for the Finnish export industry and because of the relatively weak Finnish currency FIM supported by occasional devaluations in order to boost the exports the Finnish economy and export industry experienced a quick recovery from the depression. Because of the structural change in the Finnish economy and the depression of the early 1990's a lot of industrial working places disappeared and despite the economic recovery only a part of those were restored – mostly in exports industries like pulp and paper, shipbuilding, heavy industry and electro technics. The biggest star of the Finnish exports industry was of course Nokia, which grew 1995 – 2005 almost exponentially. As the growth numbers and exports were impressive, it was not enough to getting the unemployment to pre-depression level, as also seen in Figure 2.

Some fields of industries like textile industry and some other low-value-added industries disappeared permanently because of the opened global markets. The domestic clothing, shoemaking and textile industry was unable to compete against the very cheap production in

many developing countries like Bangladesh and ex-soviet republics like Estonia. The result was “mass extinction” of these companies in Finland. And even the textile and clothing companies which were able to survive outsourced practically all the labour intensive production phases into cheap labour countries.

The golden years of the Finnish export industry eventually started immediately after the crisis year 1990 – first slowly and then strengthened substantially with the Finnish EU-membership, which opened the “global gates of exports” to Finland in totally new way, as seen at Figure 3. (Available on: <https://www.veronmaksajat.fi/>).

Figure 3: Finnish Import, Export and Trade balance 1990 - 2013



Source: Tulli (1997)

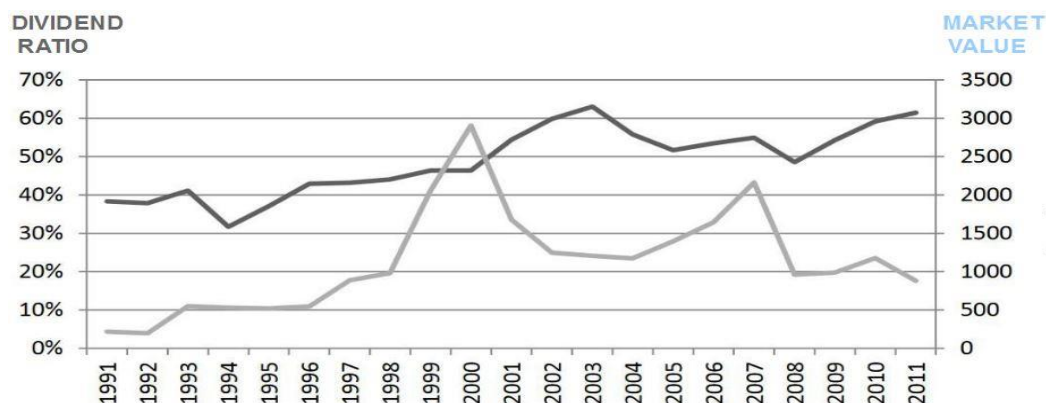
The European markets have always been the most important market area for Finnish export companies and of course the EU-membership made this trade even more important and profitable as the EU area became our home ground. The Finnish industry flourished because of low transaction costs within EU. Finnish economy has become very dependent on exports in order to finance the welfare society and the costs of persistent unemployment.

### 3. The Structural Problems of Finnish economy and the 2008 Crisis

As seen at the Figure 1 the Finnish economic structure has been changed from agricultural through industrial into service economy – and not without challenges. Especially the welfare society had quite high “price tag” which could be afforded only in the very positive economic situation with stable and significant growth. In the surface all seemed to be under control in the early 2000's because the export was good and economy was growing nicely. As the Figure 4 shows, there was a number of underlying problems unsolved and in a way one can say now that the Finnish economy was a catastrophe looking a time to happen. (Available on: <http://www.tulli.fi/>).

A major problem was that the average salary levels in Finland were increased generally in the way that the economically solid exports industry had shown. In the name of equality also the service sector, public administration and low-value-added industry salaries had increased with the same pace like the export industry salaries. This made the competitiveness of our economy weaker by the year against other EU-countries and especially against global competition. (Available on: <http://www.stat.fi>).

Figure 4: Dividend ratio (%) and market value (Millions of €) of the companies at Helsinki Stock Exchange 1991 – 2011

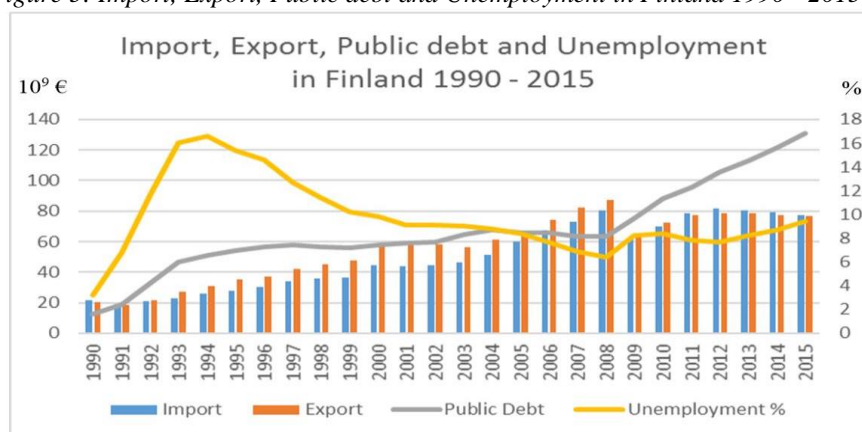


Source: Saastamoinen (2012)

Before the economic earthquake of 2008 the Finnish economy had experienced over 12 „fat years“ but despite good years the debt burden and unemployment remained big problems. Also the companies were not using the record profits on investments – instead the companies handed out record dividends and the average dividend ratio was growing steadily from about 40 % of 1991 to staggering 65 % of 2003. Especially the over 50 % dividend level (2001 – 2008) is generally considered as unsustainable. (Kulmala, 2005).

When the US subprime crisis pushed the whole western economy to crisis the first to decline were industrial investments. This hit Finland especially hard, because most of the Finnish exports were and are industrial investment goods. The demand of Finnish export goods declined rapidly and this time Finland did not have possibility to use the usual remedy: devaluation of the currency. Since 1999 Finland was a member of EMU and since 2002 a member of the EURO-zone, so currency adjustment was out of the question.

Figure 5: Import, Export, Public debt and Unemployment in Finland 1990 - 2015



Sources: Statistics Finland, Veronmaksajat, edited and visualised by the Author /

As shown in the Figure 5 is the unemployment rate been persistently near 10 % since year 2000 and partially because of that the level of public debt has been rising steadily since 2008. Of course the Finnish situation (63 % of GBP) is not yet as bad as for example in Germany (78 %), France (94 %), Italy (133 %) or Greece (175 %), but the direction is at least troubling. (Available on: <http://tilastokeskus.fi>).

In addition, the open global competition has already wiped out many low-value-adding industries so unemployment rose – especially youth unemployment. Because of the financial crisis the companies and public institutions in Finland needed to cut down the operational costs which caused even more layoffs and outsourcing (abroad). (Available on: <http://tilastokeskus.fi>).

A lot of well-paid industrial working places vanished and the new working opportunities are usually on significantly less paid service sector. Also the current salary levels of for example construction work are already eroded by numerous guest workers from lower salary countries like Estonia – another consequence of globalization. Finland is no more an island protected by national and protectionist limitations and restrictions like it was before EU-membership.

As a result, the Finnish middle class (20 000 to 50 000 € pa.) is shrinking and low income class is increasing. This is bad for the economy, because the middle class has traditionally paid about half of all the income tax revenues in Finland. The low income class cannot pay more taxes and the rich class will not pay more. When the middle class is diminishing the whole income tax system is shaking.

Another structural problem is the very high housing cost level in Finland – especially in big cities. A single low-income person living alone in a rented single flat in a big city is not able to pay the rent and living costs with the salary. Social subsidies are needed, which increases public spending and debts. This is a problem, because one suggested way to cut down the unemployment is to allow more low-income jobs to be created. The key question is: should the salary of all full time jobs be such that it will provide at least minimal means of life? If the salaries are less, the difference must be covered by public subsidies (rent support, social support etc.) which increases public spending. If the municipal taxes are increased in order to cover the additional expenditure the net income is even less and more public money is needed and so on. Vicious circle.

## 4. Conclusion

Globalisation – good or bad? The development of Finland from a poor agricultural country to a rich industrial country is mainly result of the globalization, our natural resources (timber) and the wise political decisions made support both the optimal use of the limited Finnish human and material resources and the development of the industry. So it was undoubtedly the global markets which made Finland prosperous along the unique geopolitical position, which helped Finland became a global bridge between east and west.

Globalization also changed the world in a way which caused severe problems the Finnish economy and industry. Global financing was opened to Finnish economy after decades of controlled finance markets at 1985 causing overheating and collapse of our economy at 1990. The recovery was slow, but EU-membership 1995 opened totally global markets to Finnish industry and started an unprecedented growth period which lasted until the financial crisis of 2008.

The Finnish EMU membership at 1999 and later joining the EURO-zone 2002 made it impossible to boost declining exports and economy by devaluation of the currency, which was a standard and frequently utilized tool (called as “the vitamin D”) of Finnish economic policy 1945 – 1992. The last devaluation was done 1991 and the Finnish markka was let to float 1992 and these actions together weakened the FIM externally about 40 % and this of course helped Finnish exports significantly.

The modern globalization has exposed the Finnish economy to almost unlimited international competition and because of the structural problems:

- Finnish industry: weakened competitiveness because of lowered technical productivity caused by excessive dividends instead of investments since year 2000 and because of expensive cost structure in Finland fuelled by excessive general salary rises 1995 – 2008
- Finnish economy: persistent unemployment and heavy costs of the welfare society have created a vicious cycle causing ever increasing public debt. The only theoretical way to uphold the current Finnish economics viably requires strong economic growth which nowadays seems to be at least utopian.

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## INTEGRATED MANAGEMENT SYSTEMS AS AN ELEMENT OF GLOBALIZATION IN PRODUCTION MANAGEMENT

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**Abstract.** Integrated management systems allow to search for ways of continuously improvement of the organization. It is a versatile tool that can be used in any type of organization. It is part of globalization of the management practices and fuller realization of social and customers' needs. Such systems combine several processes, practices, actions and procedures used on the basis of whole organization. These are two or more, interacting and complete sub-systems of the organization. Speaking about the integration of management systems, usually they are taken into account the systems defined in international, European and national standards, and in particular these are quality management system, environmental management system and safety management and occupational health system. The objective of integrated management systems is to seek ways to continuously improve the efficiency of the organization, taking into account the various aspects of its business. In Poland, managers of different enterprises, organization began to be interested in management systems in the 90's of the XX century. Today, many enterprises have implemented at least one management system. The aim of the paper is to evaluate the functioning of the management systems. The research took the form of survey that has been filled by senior or lower managers of different enterprises located in south of Poland. It was possible to show the conditions for the implementation of management systems in these enterprises, benefits that have been achieved, problems that had to be faced. The study also shows which management systems are the most popular in the research region.

**Keywords:** integrated management systems, management of production, improvement

**JEL Classification:** D20, L23, M11

### 1. Introduction

Nowadays, globalization has become one of the most important changes that occur in management of the most of contemporary enterprises. Inclusion of the enterprises into the globalization process requires entirely new approach and attitudes with respect to relations with other people in different countries, with particular focus on economic, political, technological, cultural and other conditions. One of the components of globalization are management systems and integrated management systems implemented by enterprises. Nowadays, many enterprises and organizations implement at least one management system and many enterprises decide to

implement the next (Skurkova et al., 2014), (Kadlubek, 2015) (Kotus et al., 2013a), (Kotus et al., 2013b).

Integrated management systems represent a universal tool that helps continuously improve the enterprise. This means connection of the processes, procedures and practices of operation used in the organization in order to implement its policies that can be more effective in achievement of the goals resulting from the policy rather than using separate systems. It is important that the management systems can be implemented by various enterprises and organizations, regardless of their type, size and products supplied (Pustejovska et al., 2013), (Jursova et al., 2014), (Sygut, 2016), (Kardas, 2015).

Integration of management systems typically means systems defined within international, European and national standards. The most popular management systems are systems developed by the International Organisation for Standardization (ISO). These system are subjected to periodical reviews and the decisions are made on their further use, withdrawal or updating (Nagel-Piciorus et al., 2016), (Pheng et al., 2015).

The Integrated Management System means two or more synergistically operating and supplementary subsystems of the organization. These are most often quality management systems, environmental management systems, and work safety management systems (Domingues et al., 2016), (Parra-Lopez et al., 2016), (Garengo & Biazzo 2013).

In Poland, the boom for implementation of the management system started in the nineties of the 20th century. Initially, the most of the enterprise decided to implement quality management system according to ISO-9000 standards. However, with changing market requirements, other systems started to be implemented and integrated with each other (Konstanciak, 2015), (Zhuravskaya et al., 2016).

The aim of the paper is to evaluate the functioning of the management systems. The research took the form of survey that has been filled by senior or lower managers of 47 different enterprises located in south of Poland. It was possible to show the conditions for the implementation of management systems in these enterprises, benefits that have been achieved, problems that had to be faced. The study also shows which management systems are the most popular in the resear.ch region

## **2. Methodology**

The research was conducted in the form of a survey in southern Poland. The survey was developed in electronic form, to facilitate the collection of all answers.

The survey was composed of two parts. The first one included respondent's particulars, e.g. respondents characteristics. The research respondents features were following: sector, enterprise size, type of property, number of employees responsible for the management system and the level of management of the respondent.

The main part of the survey consisted of 13 questions. The first question concerned the type or types of the management systems implemented by the enterprise. The second question was designed to indicate the causes of implementation of the management system.

Next questions concerned the implementation process. The respondent was supposed to indicate who the system was implemented by i.e. whether it was implemented independently or by an outside firm. In next questions, the respondent was asked to determine whether they



took part in trainings concerning system implementation and whether they participated in the implementation process. The respondents were also asked to say whether they know the most important procedures and instructions for the system in the enterprise.

Next questions concerned system operation. In the beginning, the respondents answered whether the certificate of the management system is used in the enterprise marketing strategy. The respondents were asked to indicate whether they perceive the benefits of system functioning and, if so, the respondents listed the internal and external benefits and factors that ensure smooth operation of the management system. The last two questions concerned the problems and difficulties connected with system functioning i.e. the main problems the organization experienced at the stage of the system design before the first certification and which factors make it difficult for the management system to function.

### **3. Characteristics of respondents**

The participants of the survey included 47 enterprises from the southern Poland. The most frequent management systems implemented by the enterprises surveyed included ISO 9000, ISO 14000 and ISO16929.

Answers were given by the people who work in the enterprises studied in the positions of the managers (of various level). Over 72% of the people declared that they belong to the medium-level management.

The most of the enterprises that participated in the survey were production enterprises (84%) and enterprises of the automotive sector (28%). 84% of them are large companies, with 88% of private property.

The structure of the people responsible for management systems in the enterprises surveyed is very varied. In 24%, this was 2 people, in 20% - 5 people, in 12% - 10 people, in 8% - 1, 5 or 8 people.

### **4. Results**

Due to the limitations of the extent of this publication, the paper presents the most important questions contained in the questionnaire. The results concerning selected answers were presented in two manners. If a respondent could choose only one answer, the results were presented in the form of circular charts. If a respondent could indicate more answers, the result was presented in a tabular form. In this case, the percentage contribution means how many respondents of all the study participants marked a specific answer.

The first analysed question concerned the causes of implementation of the management system (Tab. 1). In this case, the respondents were allowed to choose between several answers. The most frequent answer was to increase customer trust (56%). The respondents answered that this was cost reduction (48%), facilitation of the document and information flow (44%) and improvement in work organization (40%). This means that the respondents think that implementation of different management systems is the first step towards customers and provides the evidence that the enterprise operates adequately and raises trust. It is also essential that they are aware of the support provided by management systems in proper organization. It is remarkable that only 4% of the respondents answered that the cause of implementation is

extending the range of products, whereas none of them gave other answers than those proposed in the questionnaire.

*Table 1: What were the causes of implementation of the management system?*

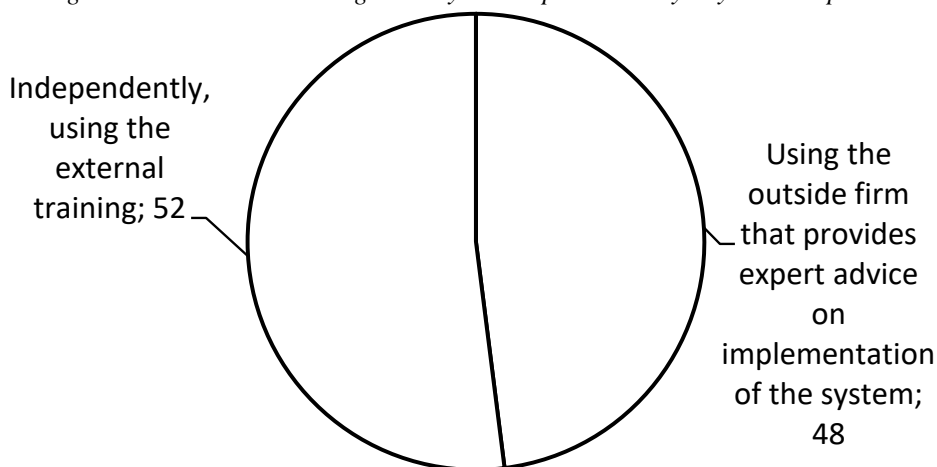
Reply	Percentage fraction
improved work organization,	40
facilitation of the document and information flow,	44
improving company reputation,	12
entering into new markets,	20
extending the range of products,	4
improved customer trust,	56
cost reduction,	48
increased revenues,	32
internal requirement of the management system specified by the customer,	24
internal requirement of the management system imposed by legal regulations,	20
another answer.	0

*Source: own study*

Next, the respondents were asked about who implemented the management system (Fig. 1). 52% of the respondents answered that the enterprise implemented the system independently but was supported by external training. The most of the enterprises that participated in the survey are private enterprises. These enterprises expect lower costs and the use of an outside firm that implemented the system increases the overall cost of this implementation. Furthermore, 48% declared that they used outside firms that provided expert advice on implementation of the system. None of the respondents answered that implementation was conducted independently, without trainings and the help of the outside firms.

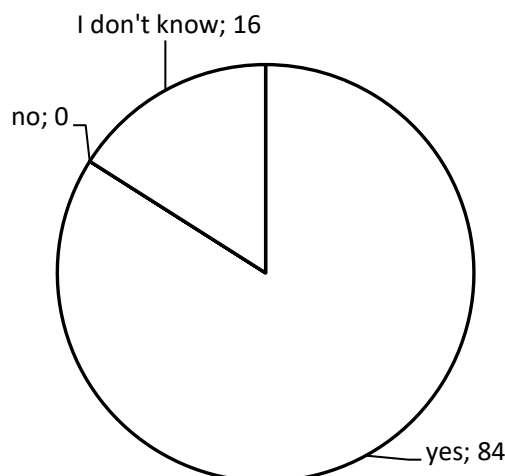
The question was also asked whether the certificate of the management system was used in the enterprise marketing strategy (Fig. 2). 84% of respondents answered positively. Interestingly, 16% of them were unable to answer this questions although they work at managerial positions. However, they were managers of lower level.

*Figure 1: Who was the management system implemented by in your enterprise??*



*Source: own study*

Figure 2: Is the certificate of the management system used in the enterprise marketing strategy?



Source: own study

The next question was asked about the internal benefits of using the management system (see Tab. 2). The respondents were again allowed to give several answers. The most important benefit mentioned by the respondents was standardization of organization activities (72%). Activities of enterprises are described in detail and properly organized. Therefore, they can be used conveniently. 56% of the respondents were convinced that implementation of the management system would reduce costs incurred by the enterprise. Consequently, despite the fact that the enterprise incurs costs during the implementation, the overall costs in the enterprise are reduced in the next period. It is also essential for the respondents that the responsibilities and authorizations are determined unequivocally (48%), which improves enterprise operation. Only 4% of the respondents observed a reduction in employee turnover rate.

Table 2: Which internal benefits of the system can be observed in your organization?

Reply	Percentage fraction
standardization of the organization activities,	72
unequivocal specification of responsibilities and authorizations,	48
organization and repeatability of activities,	20
facilitation of internal communication of the organization,	12
facilitation of decision-making processes,	20
making evaluation and organizational improvement possible,	36
facilitation of document flow,	32
reduction in employee rotation,	4
enhanced level of work satisfaction,	12
increased enterprise revenues,	24
cost reduction,	56
increased quality of products and services,	16
another answer.	0

Source: own study

The external benefits were also analysed (see Tab. 3). In this question, respondents were also allowed to mark several answers. According to the respondents, implementation of the management system represents the marketing element (72%), improved enterprise reputation (64%) and higher enterprise reliability (52%). These factors are connected with building trust to the enterprise and its reputation.

Table 3: Which external benefits of the system can be observed in your organization?

Reply	Percentage fraction
improved enterprise reputation,	64
better recognisability of the enterprise in the market,	36
higher enterprise reliability,	52
improved external communication with partners,	20
enhanced effectiveness in finding orders,	12
finding new markets,	8
marketing element,	72
element of combating competition,	12
another answer.	0

Source: own study

The respondents also mentioned the factors that allow for functioning of the management system in their enterprise (see Tab. 4). For 72% of them, the most important is involvement of top managers in the organization and employee awareness (60%). Therefore the precondition for operation of any management system is people, their attitudes and approach. It is also important to have concrete requirements for the system (52%), which makes it easier to plan and organize activities in the enterprise.

Table 4: Which factors make it easier for the management system to function in your enterprise?

Reply	Percentage fraction
involvement of the top managers,	72
proper use of the process approach,	20
employee awareness,	60
allocation of adequate resources for system functioning,	44
concrete requirements for the system,	52
trainings,	36
another answer.	0

Source: own study

Another question concerned main problems the enterprise experienced at the stage of system construction before the first certification (see Tab. 5). The biggest problems resulted from interpretation of the requirements contained in standards (76%), which is the frequent problem with legal regulations. Unfortunately, such documents are not written in a clear language. The substantial problem was also financial barriers connected with costs of system implementation (60%). Unfortunately, implementation of the management systems is connected with numerous fees. Another problem is employees' reluctance towards procedures and instructions implemented (56%). The employees do not like changes, especially if the changes involve the need for changing in employee's habits. It is interesting that only 8% of the respondents indicated insufficient involvement of top managers. This is likely due to the fact that the questionnaire was filled in by the managers. The question is one that was answered with the answer not contained in the questionnaire and, unfortunately, the answer was "I don't know". The respondents may not have taken part in the system implementation or worked in the enterprise for the shorter time that the system existed.

Table 5: Which major problems were experienced by the organization at the stage of construction of the system before the first certification?

Reply	Percentage fraction
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none,	8
interpretation of standard requirements,	76
insufficient involvement of top managers,	8
reluctance of employees towards procedures and instructions,	56
process approach,	36
difficulties with the design of the system containing many components,	36
financial barriers connected with the costs of system implementation,	60
necessity of supplementation of the documentation,	48
necessity of organization of additional trainings for employees and extending the knowledge,	24
excessively short time to plan system implementation,	4
another answer.	8

Source: own study

The last question was asked about the factors which make it difficult for the system to function effectively (see Tab. 6). The main problem mentioned by the respondents was insufficient preparation of the employees for working within the system (68%). This may be connected with high employee turnover rate. Some respondents said that the system documentation was excessively extended (48%). Unfortunately, the most of the management systems require preparation of specific documents. Some companies also decide to develop procedures and instructions which, according to the individual standards, are not obligatory. It is worth emphasizing that despite these two answers, percentage contribution of other answers was not excessively high, which means that the enterprises encounter different difficulties. However, these difficulties are not the same in all the enterprises.

Table 6: Which factors make it more difficult for the management system to function effectively in your enterprise?

Reply	Percentage fraction
mistakes at the level of system construction,	24
not allocating adequate resources for system functioning,	20
no coordinated activities in individual system components,	12
insufficient time caused by excessive workload,	16
insufficient involvement of top managers,	20
maladjustment of system requirements to the specific nature of the organization,	8
insufficient preparation of employees for working within the system,	68
no training,	20
not perceiving the system as a collection of mutually correlated components that affect each other,	28
excessively extended documentation,	48
necessity of internal audits,	12
necessity of process monitoring,	20
necessity of manager reviews,	8
another answer.	0

Source: own study

## 5. Conclusion

Regardless of the size, type, sector and property type, a number of enterprises decide to implement various management systems and they often integrate these systems. This represents

an element of globalization since the systems function in different countries and, as mentioned before, can be utilized in various organizations.

During implementation of management systems, enterprises encounter many difficulties and problems, especially with interpretation of standards and costs. However, all of this is compensated by various benefits. This means in particular the marketing element and the information about the systems implemented is attached to products or various types of documents. Another benefit is enterprise's reputation and improved trust since the specific standards are developed and respected in the enterprise.

The role of the management systems and the need for their integration has increased substantially and will be successively extended over to further areas of management, thus leading to globalization of these management systems and further improvement in enterprise performance.

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## **FACILITY MANAGEMENT AS AN IMPORTANT COMPETITIVE ADVANTAGE OF COMPANIES IN INTERNATIONAL ENVIRONMENT**

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**Abstract.** The operation of companies in conditions of globalizing market environment and growing competition puts pressure on the application of effective management methods with emphasis on comprehensive integrated solutions and optimal inputs and outputs of corporate activity. If companies want to be competitive in an international market environment, they need to develop more and more effort. The development of science and technology allows companies to use modern technology. Their products become more competitive and these technologies allows at the same time to minimize costs. Thus, we can conclude that companies around the world have the possibilities to optimize their core processes. But if companies want to be successfully in international environment, they cannot focus their activities only to core processes, but also to support activities and processes. These activities and processes are named as facility management. In the past, the term facility management associated only with the management of buildings. However, this definition was inadequate. Facility management is characterized as management area whose aim is streamline support processes in companies and reduce their costs by appropriate settings of these support processes. It is a method of mutual harmonizing of employees, work activities and working environment, which incorporates the principles of business administration, architecture, humanities and sciences. This article deals with the definition of basic concepts, objectives and activities that fall under the area of facility management. Article focuses on possibilities of implementing the facility management (internal and external). It highlights the advantages and disadvantages of both procedures. It describes the importance of supporting business processes, because these activities often determine business success and competitiveness in globalizing market environment.

**Keywords:** facility management, support process, core process, comprehensive

**JEL Classification:** F60, M10, M21, M50

### **1. Introduction**

Globalization is a term that can be defined in the simplest way as the mutual connections and dependence between the parts of the world system in various fields, such as politics, economy, culture, environment and so on. This is a phenomenon that brings us certain advantages but also disadvantages. The most commonly presented benefits include for instance easier access to markets, information technology development, market liberalization, increased competition, which increases the pressure on wider offer and increases quality. The most common adverse accompanying phenomena of globalization are considered to be unemployment, energy crisis, the dominance of monopoly, instability of national economies



and so on. In the present paper we will discuss one of the accompanying phenomena, which is the competition, in the context of facility management.

Increasing competition as a result of globalization is from the perspective of consumers perceived as a positive impact, because the pressure of competition causes that the manufacturers are trying to produce in order to survive the competition. This means that they use modern technologies, ensure the quality of products and optimize costs in order to be able to offer products at a price acceptable to the customer. In general, we can say that there is the myth, that competition increases supply, quality and lower prices. That is how the customer perceives the competition.

In terms of manufacturers, however, the competition is a threat. They must adapt to new technologies, ensure the quality of products at minimal cost, to be able to compete with other producers in terms of price of final products. It is a difficult task, and therefore businesses must fully dedicate to its core business. However, to achieve the best results in the core activity, the company must have quality background, in terms of smooth operation of support processes and activities. And it is the task of facility management - a multidisciplinary field that deals with the management of support processes and activities.

In the past, support processes were not separated from core business activities. The attempts to increase efficiency of main enterprise program and to reduce the operational cost led to the requirement of the complexity of supporting activities. The aim was to ease the burden on those employees who are dedicated to the core business activities from all other activities.

## **2. History and Importance of Facility Management**

FM is a relatively young multidisciplinary field. Activities that are the part of FM have been always carried out (in every business indeed), but the separation of the FM activities into an individual discipline happened later. The first company National Facility Management Association (NFMA) was established in 1980 in USA. Europe met this concept at the beginning of the 90s of the 20th century. The growing importance of FM can be presented through the scientific articles registered in a significant database Web of Science (Core Collection).

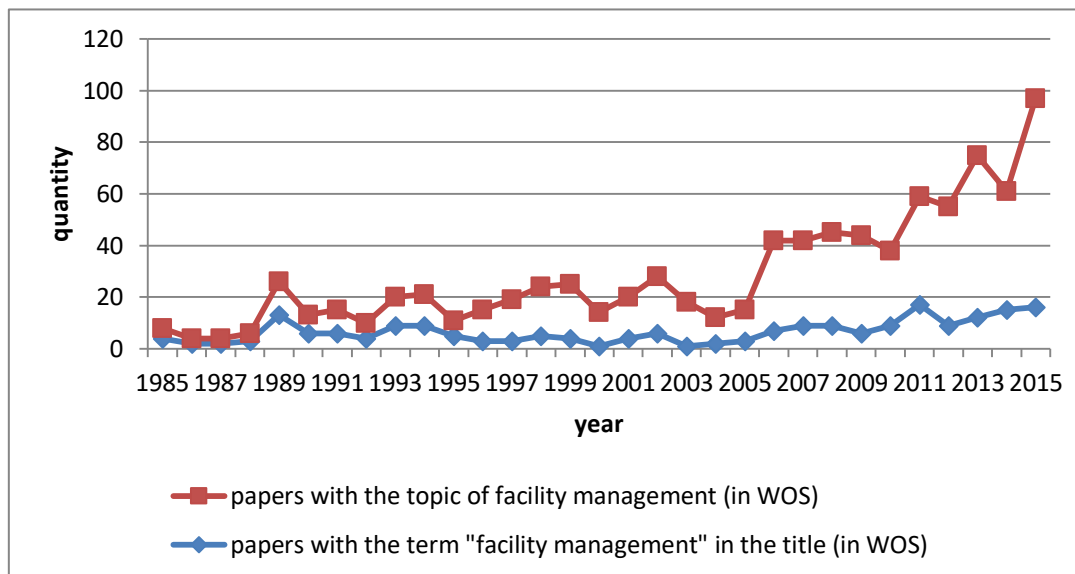
We focused on a number of citations of articles indexed in the Web of Science Core Collection in the period 1985 - 2015 in two ways:

- the term "facility management" occurring in the title of the article,
- theme of the article is closely related to the concept of "facility management" (FM concept occurs in the abstract and the keywords).

The total number of articles indexed in WOS Core Collection on 31.12.2015, dealing with issue of the FM, is 682, of which 204 ones have the concept of FM stated directly in the title.

Development of the number of articles dealing with the issue of FM and the number of articles with the term of FM in the title, for the period 1985 - 2015 is shown in Fig.1.

Figure 1: Number of articles in WOS Core Collection

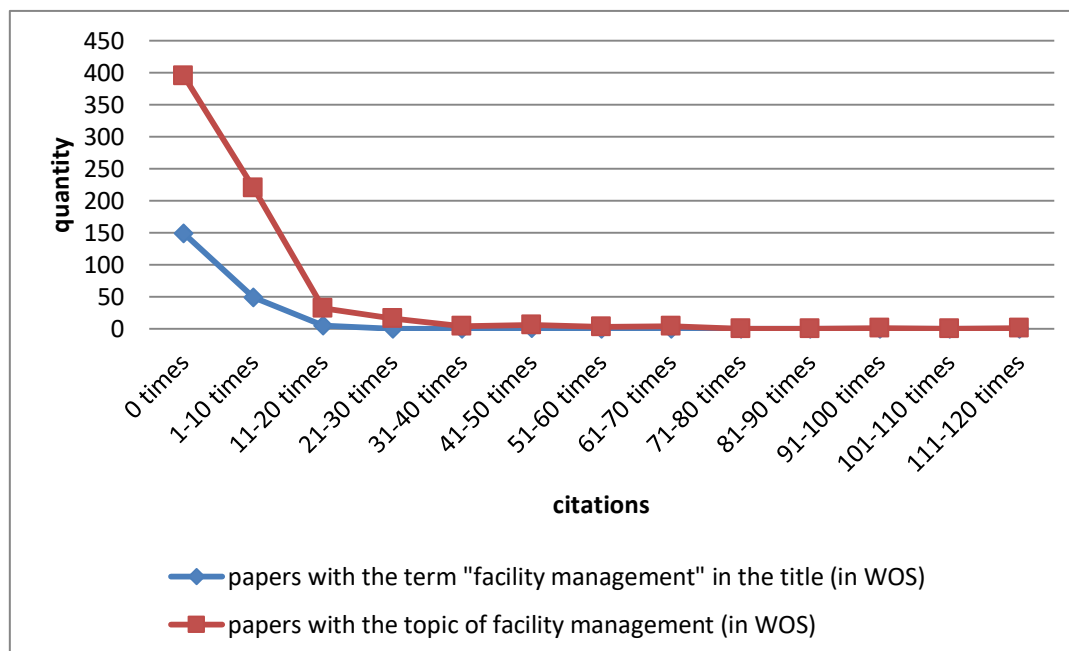


Source: own proceeding

Based on the development of the number of articles dedicated to the issue of facility management, we can see that especially since 2005, there is a rapid increase. Based on this situation, we can conclude that there is an increased interest in this topic, which declares the increasing importance of facility management as a multidisciplinary self-discipline.

Besides that, this fact is confirmed by the citations of articles dealing with the issue of FM. Citations of individual articles are reflected in the chart below.

Figure 2: Citations of articles in WOS Core Collection



Source: own proceeding

682 articles are dealing with the issue of FM and 42% of them is cited at least once. Most cited article related to the FM is Assessing and Managing the university technology business incubator: an integrative framework (Milan, 1997), with 113 citations. An important article in

terms of citation is Building Information Modeling (BIM) for existing buildings – literature review and future needs (Volk, R. et al., 2014), which was designated as "highly cited paper" during the May / June 2016.

Of the 204 articles directly containing the term FM in the title, 27% of them is at least once quoted. The most cited article of them is Facility Management - Odor Control Using Biofilters. 1. (Williams & Miller, 1992) with the total number of 41 citations. We can consider as very influential authors all those, whose articles are cited more than 10 times (Zhang, X. & Gao, H., 2010; William E et al., 2013; Eksioglu et al., 2006, Weiming, S. et al., 2012).

### **3. Definitions and Goals of Facility Management.**

Although the facility management is considered to be a relatively young area within the company management, since its inception it has undergone development in the understanding of its nature. The original essence of the concept comes directly from the name of this managerial discipline. The term "facility" in the context of company is understood as "the premises and services required to accommodate and facilitate business activity"(Bernard and Noor et al., 2014). Management is defined as an activity involving the planning, organizing, decision-making and control of organizational activities in order to achieve organizational objectives. On that basis, facility management can be defined as the management of the premises in which the business activities are carried out.

At present, however, we can say that the concept of facility management is perceived much wider. It's not just a building maintenance any more. Facility Management manages all the processes and activities that are perceived as supporting (secondary) ones. This includes building maintenance (the original concept of facility management), as well as other services related to space and support of company employees. As supporting (secondary) processes are considered all processes designed to ensure the proper functioning of the main processes and the overall running of the organization. These processes are not related to the main business, but the organization must implement them in order to be able to provide core business. The supporting processes are:

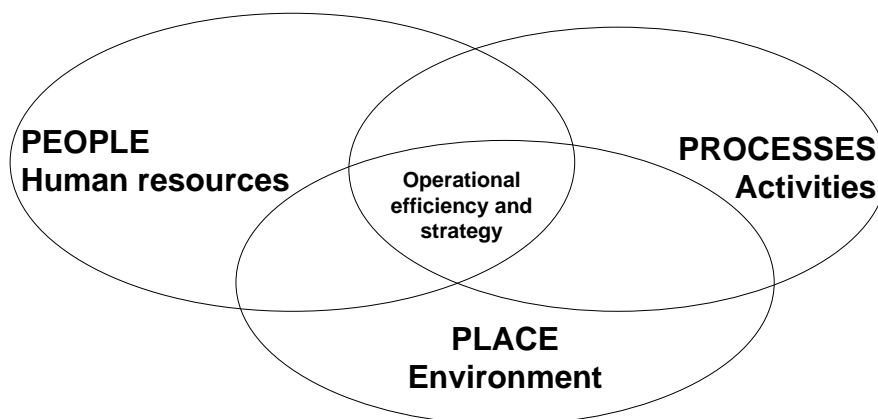
- human resources management,
- financial management and financial resources management;
- facilities and property management, cleaning and maintenance,
- operation, maintenance and servicing of technical equipment,
- customer service,
- revision, professional technical inspections,
- fire protection and health and safety management,
- IT processes,
- procurement processes and sourcing (supplier selection, purchase of services and equipment, the acquisition of human and financial resources, etc.),
- supplier management processes,
- operational processes, current business and management of the organization,
- risk management,
- safety management processes,
- quality management process,
- external relations,
- care of the environment and sustainable development,

- project management,
- corporate governance processes.

For better understanding of the wider meaning of this term, we present following definitions:

„Method, of organizations alignment of work environment, workers, and work activities. It incorporates principles of business administration, architecture, humanities, sciences and engineering“ (IFMA). This generally accepted definition is also called 3P (People - Processes - Place). Optimal bundling of these three components creates the conditions to improve the work of each employee and leads to the effectiveness of core business organizations (Kuda et al., 2012).

*Figure 3: Synergy of “3P”*



*Source: Vyskočil & Štrup (2003)*

“Facility management embraces the concepts of cost-effectiveness, productivity, improvement, efficiency, and employee quality of live. In practice, these concepts often seem to be in conflict” (Cotts et al., 2010).

“Facility management is the integration of activities within the organization to ensure and develop the agreed services which support and enhance the efficiency of its core activity” (STN EN 15221).

It is very pertinent to understand the evolution of facility management, which has developed from just simply looking at “hardware” such as buildings, furniture and equipment to covering “software” such as people, process, environment, health and safety (Becker, 1990; Alexander 1999 and Then, 1999 in Noor et al., 2014).

In 2009, GJTA (Global Job Task Analysis) defined 11 core competencies of facility management. The GJTA included responses from facility managers in 62 countries. It is the most comprehensive to date and the first truly global survey and analysis. The core competencies are:

- Communication
- Emergency Preparedness and Business Continuity
- Environmental Stewardship and Sustainability
- Finance and Business
- Human Factors
- Leadership and Strategy
- Operations and Maintenance
- Project Management

- Quality
- Real Estate and Property Management
- Technology (IFMA).

The main goals of facility management in organization are:

- creating conditions for main processes to take place and identifying the best ways of attaining the strategic goals,
- stimulating core business activities,
- maximizing returns on investments and improving financial management,
- cost reduction,
- providing support for deciding on priorities,
- improving risk management,
- improving resource allocation efficiency and striving for the efficient use of resources,
- enhancing flexibility in decision making,
- improving the organization's competitiveness etc. (Kral & Bartosova, 2016).

#### **4. Implementation of FM internally and externally**

The term of facility management is often presented in practice in the context of external providing of services (outsourcing) which belong to the facility management. We do not usually speak of facility management only if those activities are provided for the subject by an external company. It does not matter whether these processes are secured internally or externally through outsourcing. Considering the fact that almost every business needs to implement a number of supporting activities and processes in addition to the core (main) ones, we can tell that the businesses implement the FM.

Outsourcing in facility management is just a tool through which organizations can achieve greater effectiveness of operation and the support of core business (Kuda et al., 2012).

Whether the company decides to implement it internally or externally, can significantly affect its costs. Both options have their advantages and drawbacks.

Currently, globalization, outsourcing has become very popular and frequently applied strategy in the field of facility management (Sridarran & Fernando, 2016). Implementation of facility management outsourcing strategy can be considered in the context of Lean Management. Outsourcing allows organizations to fully address the underlying operations and to cover the activities that are important, but they are not activities that generate profit.

Among the major benefits resulting from the application of outsourcing within facility management belong:

- ability to focus on core business,
- potential cost savings,
- improving of quality,
- acquiring professional of know-how to management of the support business processes. (Potkany, M., 2015)

## 5. Conclusion

Facility management is a discipline that is still in the process of its formation. It has been evolving yet, especially the content of this discipline. Since the establishment of FM, when the FM was associated solely with the building maintenance, it has come to the current understanding of the nature of facility management, i.e. it is a multidisciplinary discipline that includes all the activities which are not considered to be the core business, i.e. all support activities. Separation of Core Business from support activities can mean obtaining of extraordinary competitive advantage for companies, because they can specialise more to the activities which are the main ones and generate profit. Importance of facility management in an international environment continues to grow as presented in this article, which we were trying to prove through the ever growing number of articles dealing with this issue.

## Acknowledgment

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# HUMAN RESOURCES AND PERSONNEL MARKETING MANAGEMENT IN BUSINESS PRACTICE FROM THE PERSPECTIVE OF GLOBALIZATION

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**Abstract.** Turbulent environment and global competition require that companies will be flexible and ready for a change. In terms of globalization, this means that a growing global population actively participates in global economic, technical and scientific activities. The development of science in the broadest sense and the creation of the information society are considered the main factors of the globalization process. Distribution of economic tasks between national economies contributes to their economic interdependence. The global economy supposes not only free trade but also liberalization in the whole complex of economic relations. Prerequisite of flexibility of corporation is flexible workforce that is not only prepared to change their professional profile, but is able to accept such changes. Enterprises tend to attract workers who not only have the necessary qualifications, but also desirable personality characteristics, who are optimally motivated and have the desired attitude to work and are flexible and ready to change. Today a personnel marketing is seen as a process to ensure the organization of long-term quality human resources and strategic potential. It is working closely with personnel management and forms the basis of information. It deals with target groups by different form of communication in order to increase the attractiveness of the organization as a potential future employer. Personnel marketing is a relatively new field of theory and practice in the field of personnel activities of business practice.

**Keywords:** personnel marketing, human resources, recruitment, evaluation and compensation of employees, globalization

**JEL Classification:** M, M12, M14

## 1. Introduction

Personnel marketing as a separate field of human resources management was established by dissociation of personnel management. Its beginnings are associated with two phenomena: a new look at the workforce that has begun to be understood as the human capital of the organization and the insufficiency of conventional procedures used to obtain high-quality workforce for the organization. Simple advertising has not succeeded in finding and obtaining labor. In the labor market it was needed to use the active approach of searching, attracting, motivating and convincing the workforce to decide to take the offered position.

Currently, in expert circles a discussion frequently raises about the importance of personnel marketing during the global economic crisis, or what functions it can perform, respectively



performs. The responses are now very diverse, conservative and liberal, on the one hand rejecting the importance and place of personnel marketing in the global economic crisis, and on the other hand, the glamorous and uncritically exaggerating its importance and place in the regulatory processes and the macroeconomic and microeconomic regulatory mechanisms set to cope not only with global crisis, but after the next social crisis. As indicated by the current development of the global economic crisis, the roles of personnel marketing personnel will not cease to exist, but they will regroup and content qualitative change.

This results from the pursuing and deepening globalization processes, which result in long-term changes both in society and in the labor market. In terms of the conception of personnel marketing there is an important fact that the regional labor market is very heterogeneous and therefore highly segmented.

In shaping the concept of personnel marketing it is important to have on mind the fact that the labor market is besides of supply and demand activity and the impact of market consumer goods and services also under the strong influence of the state (employment policy, labor legislation, social or pension policy and other areas of the active role of the state) and under the influence of trade unions. Every company wants to get the very best personnel in the labor market, whether they are manual workers or white collar employees, such as the artisans, merchants, and experienced managers. For the enterprise to be able to attract such labor in the required quantity, quality in time when for the enterprise is such staff strictly necessary, it should be able to attract and present itself in the eyes of potential candidates as an attractive employer.

## **2. Theoretical basis of personnel marketing**

The personnel marketing is seen as a process to ensure the organization of long-term quality human resources, strategic potential today. It is working closely with personnel management and forms the basis of information base for it. It deals with target groups by different forms of communication in order to increase the attractiveness of the organization as a potential future employer. It is a relatively new area of theory and practice in the field of HR activities. It has formed as a separate scientific discipline reflecting the need for changes in the labor markets. Personnel marketing is the way, the concept and the process of obtaining the workforce from the environment of external and internal market with workforce. Personal activity with the help of personnel marketing tools ensures optimum number, structure and quality of the staff in accordance with the current needs of the company.

Brachtl defines personnel marketing as "a set of activities related to the creation of the name of a good employer directed to own and potential job-seekers in the enterprise. The primary objective of personnel marketing is then simply creating the conditions for ensuring long-term qualified and motivated employees" (Brachtl, 2006).

Koubek is another important author in the field of human resources management. He defines personnel marketing as "marketing approach use in human resources, especially efforts to shape, and maintain the necessary workforce of the organization that relies on creating a good reputation of employer organizations and on labor market research. It is therefore a draw of attention to the organizations' employing quality" (Koubek, 2007). Personnel marketing is a relatively new approach in the field of human resources management. Human resources in companies take increasing importance and attention. The cause of these changes may be the realization of most companies, that the key to prosperity is just in the employees, in the rational

management of resources and in meeting their needs, and in their formation, motivated, adapting to change and create employment and social conditions for them.

## **2.1 The mission of personnel marketing**

The labor market is the object of personnel marketing. Potential production factor - human capital, human resources, as a representative of abilities, knowledge, skills and habits of people that are used to implement business objectives enter into the labor market. Personnel marketing in order to fulfill its goal also in terms of globalization, it is necessary to pay attention to its process and ensure the continuity of its implementation phases. Today personnel marketing is represented by a separate department which obviously must continue to work with others (marketing department, human resource management, personnel department, etc.) and speak with one voice as a whole in many companies (Bednárík & Čapkovičová, 2015). The mission of this activity is to strive for a good reputation and smooth formation of the staff of the organization and strengthening of workers belonging to the organization. Personnel marketing process consists of specification of procedures and tools that the company outlined in its concept.

Personnel strategy can even be developed and agreed together with corporate strategy, though the separate approach is more frequent during the development of these strategies (Rybanský & Málíková, 2015). Personnel strategy is one of the sub-strategies of the organization and reflects the intentions of the organization into the future, long-term and comprehensive goals in human resources (linked with the other objectives of the organization) which should help to achieve organizational goals.

Personnel strategy of the organization creates prerequisites for the realization of corporate strategy in its field and must respond to changes in organizational strategy. It must also address the organization specifications (internal conditions) and respects the external conditions that affect the organization. It contains ideas about ways and methods to achieve other goals through the human resources of the company. It is determined by the overall enterprise strategy; it means a long-term complex understanding business objectives.

This area of personnel management is exactly the key distinguishing feature of personnel management in the modern understanding of active agent, affecting the prosperity and competitiveness of the organization with respect to its long-term perspective - as opposed to his understanding as passive HR outsourcing, where recruiters more or less only react to managers' demands (Raabe, 2006). The fact that the return on investment in human resources is more long-term as the returns of other investments of the organization, puts much greater demands on the need and ability to communicate the strategic goals of human resources management with the entire staff.

### **2.1.1 Using the tools of marketing mix**

Classic tools of marketing mix is not necessary to describe in detail. The concept of marketing mix refers to the connection and relationship of the marketing mix with segmentation, targeting and positioning in the organization (Lancaster & Reynolds, 2005). That is the concept of 4P that is the base for the set of marketing tools for the labor market. Marketing mix according to Kotler is "the set of marketing tools that the company uses to achieve marketing objectives in the target market" (Kotler, 2001). The basic concept is defined as the "four P":

- Product - involves a combination of goods and services that the company offers to the target market.
- Price - is a certain amount payable by the customer, if he wants to obtain the product.
- Place - represents all company activities that ensure that the product is available for the target consumers.
- Promotion - all activities that mediate essential information about the product and persuade target consumers about the advantages of making his purchases.

The mission of personnel marketing is planning and conducting such activities that promote the attractiveness on the labor market. An important part of personnel marketing is to analyze and research the labor market factors affecting the formation and existence of the labor force in the organization.

Also in the management of human resources it is possible to specify personnel marketing mix. Summary of the tools that the enterprise knowingly applies to both internal and external market of labor are the tools of personnel marketing. Personnel marketing mix of the company responds to four basic questions:

- what I offer (jobs as "product") respectively what I want to get (the labor force as a "subject");
- how much it will cost (valuation of human capital as "price")
- where I offer respectively I have to look for (labor market as the "place" of the implementation of personnel marketing)
- how do I get what I need (promotion in the labor market as "communication").

## **2.2 Practical application**

A prerequisite for successful organizations are those who identify with the vision and objectives of the organization and effectively contribute to their achievement. Through human resource management, it is possible to achieve this ideal situation, or at least closer to it. It is not enough only to adequately reward the employees for their work, you need to give them space for self-realization, the development and implementation of their employment potential. This is related to increasing the responsibilities and competences of individual workers, which contributes to the growth of their motivation and productivity. Together with the other functional areas of management, the management of human resources is involved in a synergistic effect - the achievement of the objectives of employees and the organization as a whole.

Human resource management is not present only in one form. There are many perspectives on human resource management and it is the task of organizations what approach they choose. There are two basic approaches - soft and hard approach to human resources management. They differ in understanding the status and importance of worker in the organization. However, they are mutually not exclusive and often it happens that the organization shall apply the mixed form of these approaches of human resources management. The aim is to determine the main tasks and activities of human resource management, trends in human resources management and the capabilities of personnel work. All targets in the area of human resources management should therefore be compatible with the overall company strategy and promote it.

At the same time by the personnel targets setting it should be taken into account the needs of employees. It should be realized with a view to maintaining the efficiency of the organization. Mihalčová ranks the main tasks of human resource management:

- compliance of the number and structure of jobs, staff numbers and structure,
- enforce appropriate people management style,
- the most appropriate use of working time,
- use the most appropriate work skills of employees
- tolerance of interpersonal relationships at work,
- career management (Mihalčová et. al, 2007).

Human resource management is essentially about knitting together and align human resources with the strategic needs of the organization and ensuring that these resources are fully utilized. Content of the tasks for the management of human resources is mainly a reflection of what is expected from company management human resources management system. Mostly, with the help of the outcomes of human resource management, these tasks can be done:

- creating an environment that enables management to acquire, educate and motivate people needed to ensure current and future business activities,
- developing human potential continuously and create an atmosphere that motivates employees to the fulfilling the corporate objectives,
- facilitating balance of the enterprise and adapt to the different interests of the stakeholders - shareholders, employees, customers, suppliers, the state in which it has its head office etc.,
- strengthening the mutual relations and promoting teamwork within the company,
- following the international, national and local developments affecting the practice of employing people and interpreting and clarifying the implications for corporate strategy,
- managing, supporting or promoting changes in human resources and act as a stabilizing factor (Brezaniová, 2008).

### **3. Implementation of research in the Trnava region**

Based on the survey, which was conducted at the turn of 2015 and 2016 in the Trnava region in the field of cooperation of Trnava Self-Governing Region and Labor offices and businesses we use some of the results in this paper.

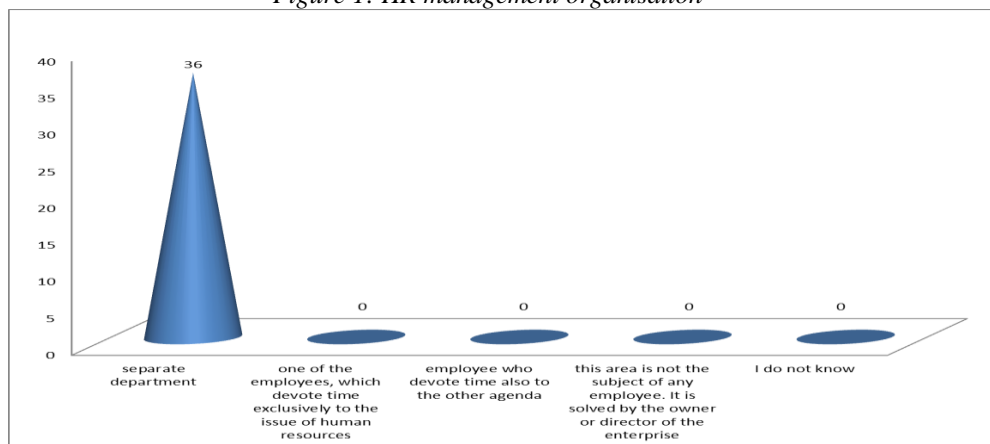
#### **3.1 Way to ensure human resource management**

The way the human resources are managed is the subject of a questionnaire issues. Respondents were able to choose one of the following options in the survey:

- separate department;
- one of the employee, which is devoted exclusively to the issue of human resources;
- one employee, which is also given to another agenda;
- this area is not given to any employee; it is addressed by the owner or director of the organization.

These options represent the types of organization of human resources management in the company. In the evaluation of questionnaires in this area we recorded following results:

Figure 1: HR management organisation

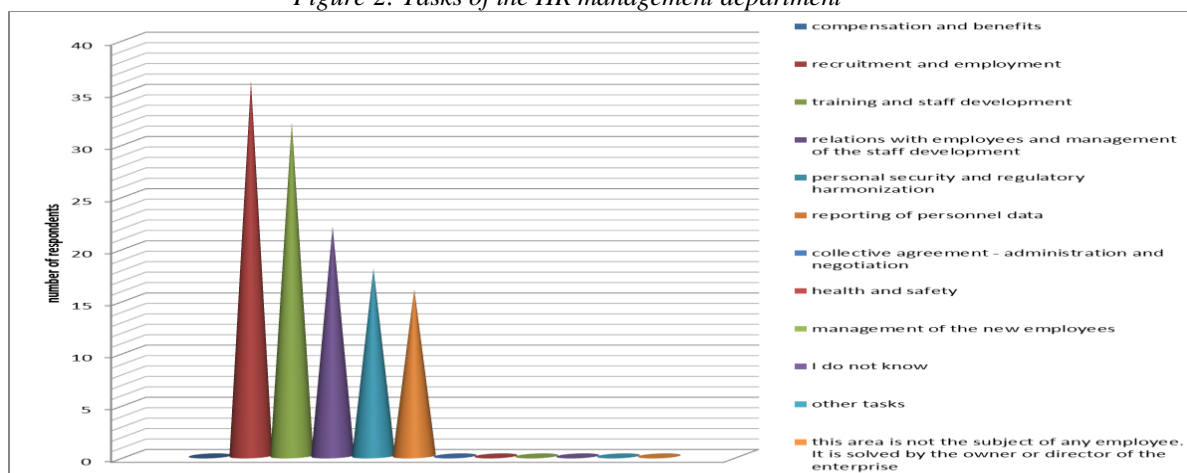


Source: Own processing

### 3.2 Responsibilities of the Human Resources Management Department

Human resource management and activities that lead to their execution are a matter for the HR department, while being an integral part of the work of all managers of the organization, regardless of their status in the hierarchy of management functions. The personnel department is an internal organizational unit specialized in human resources management. Around since the eighties of the 20th century in most organizations it was renamed to the department of human resources. By this the employers declare that employees are important to the business and represent a unique source of new values. Department of Human Resources provides professional, i. e. conceptual, methodological, and counselling, guidance, organizational and control personnel work aspect. It also ensures operational personnel actions and generally performs certain duties towards external institutions. It is sometimes said that the Human Resources Department provides personnel services, especially if it is perceived as an entity that ensures the requirements and needs of managers and individual employees - internal customers. The task of the next question was to find out what activities are engaged by the departments of HR management in various companies that participated in the survey. Evaluation yielded the following results, which we reported graphically in the graph No.2.

Figure 2: Tasks of the HR management department



Source: Own processing

As it is clear from the graph, primary concern of staff dealing with HR management in the enterprises is essential range of activities in this area. It consists mainly of recruitment and employment in the activities of 36 respondents, training and staff development activities in 32 respondents and relations of the staff addressed 22 companies.

## 5. Conclusion

Based on the evaluation of questionnaire survey and application of theoretical knowledge it is necessary to propose the following methodology of personnel management marketing. The methodology contains the sequence of the implementation activities of enterprises used to create the optimum conditions for human resources management.

- Establish a personnel strategy of the organization relating to the long-term objectives and the general objectives of the needs of employees.
- Allocate human resources management activities, which will be applicable in the management.
- Determine the share of work of human resources management between the personnel department and managers.
- Ensure quality and continuous communication between the above-mentioned departments, which consists of feedback.
- Improve the orientation of the personnel department to enterprise's problems
- Employ qualified and professional staff, who has not only theoretical knowledge of HR department, but also practical skills.
- Selection of suitable staff means of course the non-financial benefits. It creates the assumption of long-term action of these people in the company, leading to stronger interpersonal relations in the workplace, identification with the company and its objectives, and also to higher personnel loyalty.
- Develop and implement an effective system of performance measurement, accountability and follow-up system of remuneration or sanctions.

In order to ensure the enterprise's overview of the benefits of taking action in the area of human resources, it would be good to keep in enterprises the statistics on the characteristics of efficiency of personnel work, and to compare them with other companies.

## Acknowledgment

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## POSITION OF SMALL AND MEDIUM-SIZED ENTERPRISES IN THE GLOBALIZED SINGLE MARKET OF THE EUROPEAN UNION

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**Abstract.** Thanks to globalisation lots of large spatial and economic groupings (OPEC, EU, NAFTA, CEFTA and others) were created. The EU single market enables a free movement of goods, people, services and capital. Small and medium-sized enterprises (SMEs) in the EU operate mainly at a national level and only a few of SMEs takes part in a cross-border business. Irrespective of the scope and field of their operations, SMEs are affected by EU legislation in various areas, such as taxation, competition and commercial law. Small and medium-sized enterprises are an integral part of the business environment in all countries. SMEs represent a majority share of the overall structure of business entities. SMEs in Europe have an important contribution to the market shaping, GDP creation, employment and they increase the competitiveness of the country. SMEs have more difficult access to foreign financial resources needed for their development and increase of their competitiveness. Financial groups often fail to provide funding, loans, guarantees and venture capital in the extent which is required by SMEs. One of the key factors of further dynamic development of SMEs are innovations, implementation of innovative processes and creation of better and more comprehensive supportive environment for research and innovation activities of SMEs. Small and medium-sized enterprises, which indicate the direction and pace of the global economy development, play an important role in the implementation of innovation. This article presents the current status of SMEs in the globalized EU and international organizations dealing with the promotion and financing of SMEs.

**Keywords:** European investment fund, competitiveness, venture capital, innovative processes

**JEL Classification:** P00, R32, L1

### 1. Introduction

SMEs are the engine of the globalized European economy. Their important role in the economy of each country highlight also Kozubikova et. al. (2015). They drive job creation and economic growth and ensure social stability. In 2013, over 21 million SMEs provided 88.8 million jobs throughout the EU. Nine out of every 10 enterprises is an SME, and SMEs generate two out of every three jobs. SMEs also stimulate an entrepreneurial spirit and innovation throughout the EU and are thus crucial for fostering competitiveness and employment. Given their importance to European economy, SMEs are a major focus of EU policy. The European Commission aims to promote entrepreneurship and improve the business environment for SMEs, thereby allowing them to realise their full potential in today's global economy.



A new boost for jobs, growth and investment is the first priority of the President of the European Commission.

*„Jobs, growth and investment will only return to Europe if we create the right regulatory environment and promote a climate of entrepreneurship and job creation. We must not stifle innovation and competitiveness with too prescriptive and too detailed regulations, particularly when it comes to small and medium-sized enterprises (SMEs). SMEs are the backbone of our economy, creating more than 85 % of new jobs in Europe and we have to free them from burdensome regulation.“* (Jean-Claude Juncker, President of the European Commission)

The characteristics of a SME reflect not only the economic, but also the cultural and social dimensions of a country. Not surprisingly, very different practices are used across countries and over time. Some countries tend not to make a distinction between legal and statistical definitions. This is the case for Canada, Greece, Portugal, Mexico and the Slovak Republic. The definition can be based on a threshold in revenue, like it is the case in Canada, it can be based on number of employees, as in the UK, or it can combine the number of employees and turnover for legal and statistical purposes like in Portugal. The Slovak Republic, Mexico and Greece use the number of employees as criterion. (Turner et. al., 2010)

In most EU countries, there is a distinction between the legal definition and the statistical definition. The legal definition, based on EU recommendation number 2003/361/EC<sup>4</sup> and EU directive 651/2014, takes account of the number of employees, annual turnover, annual balance sheet and independence. In some cases, the monetary thresholds have been adapted (Italy). More generally, this definition has served as a basis for other European countries, such as accession countries (e.g. the Czech Republic) and Turkey.

Other EU countries use a simplified legal definition based on employment and turnover. This is also the case with Hungary and Moldova. Some EU countries do not have a commonly accepted legal and administrative definition; this is the case for the Netherlands and Spain. Similarly, in New Zealand there is no common administrative definition; turnover is used by some, taxes on employee salaries and wages by other administrations. In Brazil, different criteria and thresholds are used for different legal, fiscal and international trade purposes.

Denmark, France, Norway and Switzerland do not use a legal definition. In Japan, the regular workforce, together with capital or investment, determine the size class, however, thresholds vary for the different activity classifications. This is also the case in Korea, where SMEs are classified by the number of permanent workers, capital and sales. In the US the number of employees is used to identify small businesses in most sectors, except in the non-goods producing sectors where annual receipts are the criteria.

Finally, a simplified definition, based on the number of employees, is used in France and Finland in addition to the EU recommendation. (Lindner, 2004)

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<sup>4</sup>The size categorization of businesses is in line with the recommendation of the European Commission no. 2003/361/EC, since 01. 01. 2005. The SMEs category is presented by enterprises employing less than 250, the category of large businesses includes those enterprises employing 250 or more. Within the SME category are distinguished micro enterprises (0-9 employees), small enterprises (10-49 employees) and medium-sized enterprises (50-249).

## 2. Current state of SMEs in Slovakia and EU

A dynamic development of small and medium-sized enterprises is one of the basic preconditions of a sound economic development of a country. SMEs in Slovakia make 99.9% of the total number of businesses and provide jobs almost to three quarters (73.6%) of the active labour force and form more than half (52.8%) of the value added. Nearly 97% of small and medium-sized businesses are micro-enterprises employing fewer than 10 employees. More than three quarters of SMEs are active in sectors of business services, trade, construction and industry.

In 2015, the sector of small and medium-sized enterprises developed in terms of increasing performance of the Slovak economy. Positive development was seen almost in all major indicators characterizing the development of SMEs. Compared to 2014, employment (by 0.7%), value added (by 4.4%), generated profit (by 8.8%) and exports of goods (by 5.7%) increased in the sector of SMEs. Compared to the pre-crisis year 2008, however, SMEs are lagging behind especially in the area of job creation.

According to data of the Statistical Office of the Slovak Republic (SOSR), 531,729 active businesses were registered in Slovakia in 2015, 531,063 out of them were SMEs. In the annual comparison, there was a decrease in the total number of active small and medium-sized enterprises by 6.0% which was mainly due to the introduction of the new methodology of SOSR for determining the activities of an entity<sup>5</sup>. 96.9% of the total number of active business entities were micro-enterprises (515,236), 2.4% (12,984) small enterprises and 0.5% (2843) medium-sized enterprises. The share of large enterprises was 0.1% (666). In 2015, natural persons - entrepreneurs made almost two thirds (63.7%) of the total number of active small and medium-sized enterprises in Slovakia (531,063). Representation of SMEs - legal entities reached 36.3%.

Table 1: Number of enterprises according to individual legal forms and size categories to 31.12.2015

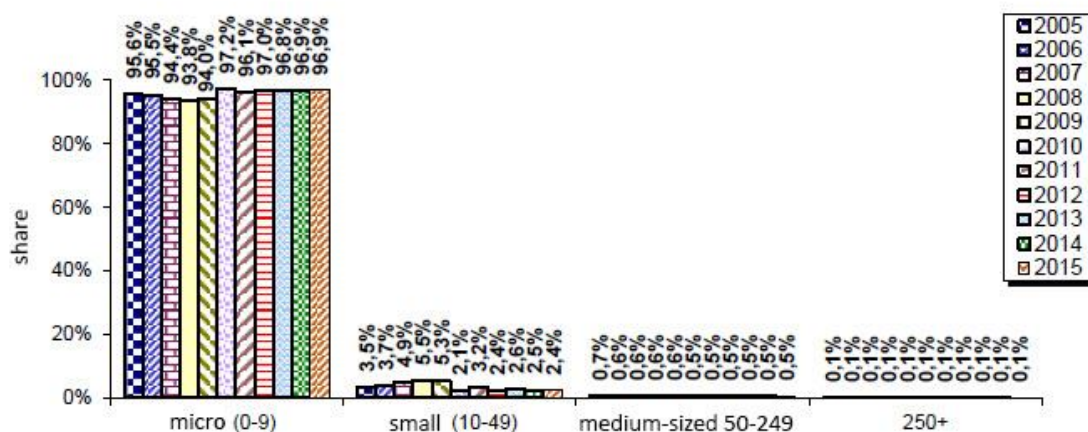
Size criterion/ legal forms	Enterprises	Sole traders	Freelance occupations	Individual farmers	Total		Index 2015/2014
					Abs.	In %	
Micro companies (0- 9)	178 095	315 182	17 657	4 302	515 236	96,9 %	93,96
Small companies (10-49)	11 721	1 215	39	9	12 984	2,4 %	91,71
Medium companies (50-249)	2 780	63	0	0	2 843	0,5 %	103,27
Large companies (250 - more)	666	0	0	0	666	0,1 %	106,05
Total SMEs (0-249)	192 596	316 460	17 696	4 311	531 063	99,9 %	93,95
Total business enterprises	193 262	316 460	17 696	4 311	531 729	100,0 %	93,97

Source: Statistical Office of SR, SBA

<sup>5</sup>An economically active entity is, according to the Statistical Office of the Slovak Republic, is an entity which had employees, revenues or investments in the given referenced period. The Statistical Office of the Slovak Republic used also the data from administrative sources about health insurance payers to determine the activity.

Changes in the individual size categories of entities in 2005 – 2015 are depicted in Fig. 1. In the reference period the share of legal persons in SMEs increased in the category of micro entities. The decrease is seen in the category of small, medium and large businesses.

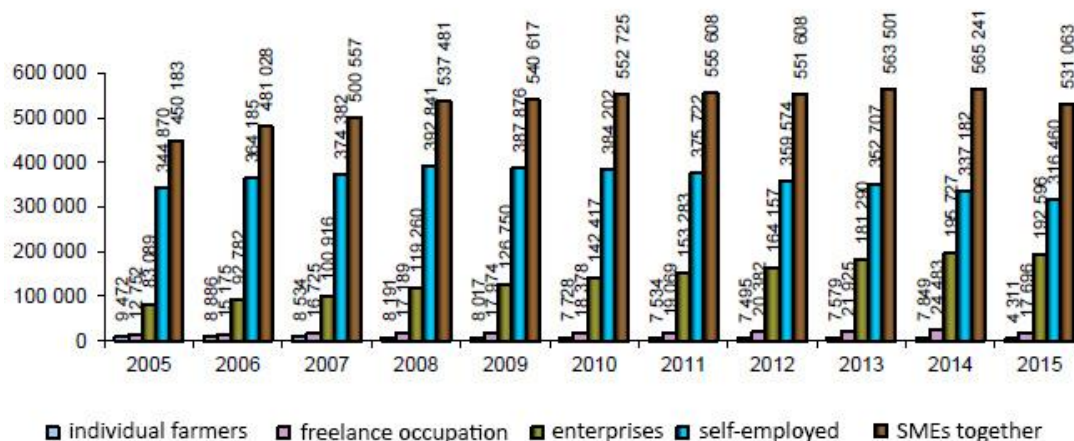
Figure 1: Structure of SMEs in Slovakia according to the size category



Source: Statistical office of SR, SBA

Since 2009, the overall frequency of small and medium-sized enterprises has been characterized by different development trends which are recorded for different legal forms. While the number of small and medium-sized enterprises - legal persons increases every year, the number of individuals - entrepreneurs reported a decline in the previous six years. The decline in the number of natural persons - entrepreneurs is mainly associated with a reduction in the number of self-employed.

Figure 2: Development of frequency of SMEs according to individual legal forms



Source: Statistical office of SR, SBA<sup>6</sup>

<sup>6</sup>Since 2015, data have been processed according to the new methodology for determining the activity of an entity.

## 2.1 Comparison of gender and age structure of entrepreneurs in Slovakia and other EU countries

Based on the data and methodology of Eurostat<sup>7</sup>, the share of women in the total number of self-employed (entrepreneurs up to 74 years) in the European Union in 2015 reached 32.0 % (0,4 pp more than in 2014). Slovakia, with a share of women in the total number of entrepreneurs (29.8%), representing a 2.2 pp less than in the whole EU), is in the long-term horizon one of the countries with below average business activity for women. Although, even worse situation was in Slovenia (29.3%), Romania (28.6%), Sweden (28.5%), Denmark (28.2%), Ireland (20.6%) and Malta (19.5%). The top countries, with the highest proportion of women on the total number of entrepreneurs, were Lithuania (39.7%), Luxembourg (39.0%) and Latvia (38.1%). According to Eurostat, in 2015, 3.2% (0.9 pp more than in the EU) of the total number of Slovak population in the age group 15-24 years was engaged in business activities, 37.8% (11.2 pp more than in the EU) in the age group 25-39 years, 29.2% (0.2 pp more than in the EU) in the age group 40-49 years, 24.4% (2.7 pp less than in the EU) in the age group 50-59 years and 5.3% (9.6 pp less than in the EU) in the age group 60-74 years.

## 2.2 Comparison of size structure and frequency of business entities in Slovakia and other EU countries

The size structure of the business sector in Slovakia is very similar to the size structure of enterprises in other EU Member States. As a characteristic feature of Slovakia, however, may be depicted a greater percentage of micro-enterprises. In Fig. 4 is presented the comparison of the size structure of the business sector in the Slovak Republic and in the EU-28th. The presented data show some methodological differences that need to be taken into account in the mutual comparison. Data of EU-28 are compiled by Eurostat methodology, Structural business statistics, and they include industry and nonfinancial business economy. The statistics shows that from the total number of 22.6 million businesses in the nonfinancial business economy in the EU-28, SMEs represent 99.8%. Representation of micro businesses reached 92.9%, 6.0% of small businesses and 1.0% of medium-sized enterprises. The number of businesses in Slovakia represents the whole Slovak economy and a source of the data is the register of organizations of SOSR. According to these data, the total number of SMEs in Slovakia is 99.9% and the representation of micro-enterprises is 96.9%, which is 4.0 pp. more than in the EU.

Table 3: Size structure of the business sector in SR and EU

		Size of an entity					Summary
		Micro	Small	Medium	Large	SME	
		(0-9)	(10-49)	(50-249)	250 +		
EÚ-28 (2013)	Number of business entities in nonfinancial business economy (in thousands)	20,960	1,345	220	42	22,525	22,566
	Share in the total number of entities	92.9 %	6.0 %	1.0 %	0.2 %	99.8 %	100.0 %

<sup>7</sup>It was founded in 1953, it is based in Luxembourg but works closely with the Member States and thus creates the European Statistical System. Outside Europe, Eurostat plays a leading role in the coordination of statistical systems in Canada, Japan and international organizations such as the UN.

Slovakia (2015)	Number of business entities	515,236	12,984	2,843	666	531,063	531,729
	Share in the total number of entities	96.9 %	2.4 %	0.5 %	0.1 %	99.0 %	100.0 %

Source: data of Slovakia: SOSR, calculation of SBA; data of 28: Eurostat, Structural business statistics

### 2.3 Comparison of employment according to size categories of entities in Slovakia and other EU countries

In 2012, SMEs formed 67.0% of the total number of employed people in the sectors of nonfinancial business economy in the EU - 28 (133.8 mill.), while the proportion of micro-enterprises was 29.2%, small businesses 20.7% and medium-sized enterprises 17.2%.

Present share of SMEs on employment in the Slovak business economy in 2015 is more than 6.6 pp. higher than in the EU – 28. Considering individual size categories, micro entities have more dominant position (share of 16.1 pp. higher) in Slovakia than in EU-28.

Table 2: Comparison of employment according to size categories of entities in Slovakia and EU

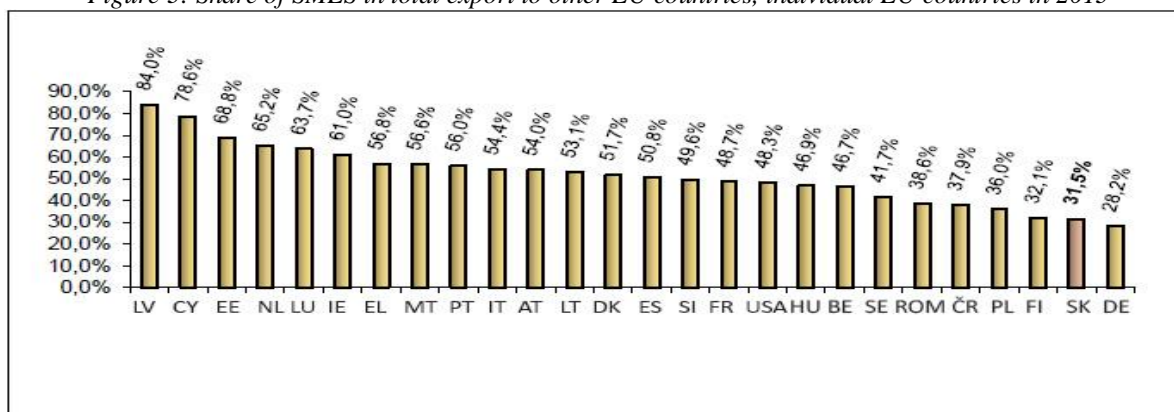
		Size of an entity					Summary
		Micro	Small	Medium	Large	SME	
		(0-9)	(10-49)	(50-249)	250 +		
EÚ-28 (2012)	Number of employed people in nonfinancial business economy 2011 (in thousands)	39,000	27,723	22,967	44,078	89,690	133,767
	Share in the total employment	29.2 %	20.7 %	17.2 %	33.0 %	67.0 %	100.0 %
Slovakia (2015)	Number of employed people in business economy (in thousands)	814.3	233.6	274.5	475.2	1,322.4	1,797.6
	Share in the total employment	45.3 %	13.0 %	15.3 %	26.4	73.6 %	100.0 %

Source: data of Slovakia: SOSR, calculation of SBA; data of 28: Eurostat, Structural business statistics

### 2.4 Comparison of SMEs position according to export in Slovakia and other EU countries

Compared to other EU countries, Slovakia was in next to the last position considering the share of SMEs in exports to EU countries in 2013 (31.5%). A smaller proportion than Slovakia had only Germany (28.2%), which was on last place. The largest share in exports to the EU countries had SMEs in Latvia (84.0%), Cyprus (78.6%), Estonia (68.8%) and the Netherlands (65.2%). The other member of V4 countries had better export policy than Slovakia, namely Hungary with a share of 46.9%, the Czech Republic with a share of 37.9% and Poland with a share of 36.0%.

Figure 3: Share of SMES in total export to other EU countries, individual EU countries in 2013



Source: data of SR: SBA<sup>8</sup>; data of EU countries: Eurostat

The business area of SMEs has great potential which can be further increased by the use of financial and technical support at various levels and also by the use of knowledge transfer or implementation of innovations. (Levy et. al., 2000)

Currently, much attention is paid to support of SMEs, mostly to innovative early-stage start-up companies that are unable to obtain financing to start and develop the business by commercial (bank) loans. Figure 6 portrays the realized analyses of support of SMEs in Slovakia. (Jaroš, 2016)

Figure 6: SWOT analyses of SMEs support in SR

Strengths (S)	Weaknesses (W)
<ul style="list-style-type: none"> <li>➤ The existence of the agency SBA which provides the implementation of programs of the development support for SMEs</li> <li>➤ A wide network of Regional Advisory and Information Centres, business and innovation centres, first contact centres and business and technology incubators</li> <li>➤ By the support of public administration bodies and large enterprises, SMEs gain, with the assistance of public procurement, contracts from EU sources</li> <li>➤ SR is part of the EU which brings benefits in a form of attracting foreign capital, simplified flow of goods and services, labour migration, access to quality education</li> <li>➤ Strong sector of SMEs in Slovakia (99.9% share of the total number of enterprises, in business economy it provides employment to 72.7% of the active labour force and contributes 53.3% to the creation of the value added)</li> <li>➤ Existence of a single methodology to access selected impacts as a basis for a systematic assessment of the impact of regulations on the business environment</li> </ul>	<ul style="list-style-type: none"> <li>➤ High indebtedness of SMEs and low number of SMEs reaching a positive result is the cause of poor creditworthiness, resulting in a failure to provide a bank loan or getting just low bank credit and high interest rates</li> <li>➤ High tax and levy burden of entrepreneurs</li> <li>➤ Lengthy bureaucracy and administrative burden associated with obtaining external funding (EU Structural Funds and other national projects)</li> <li>➤ Uncertainty resulting from frequent updating of important legislation relevant to business</li> <li>➤ SMEs, considering the administrative burden of project preparation, are not seeking these resources, as they cannot prepare the project correctly by themselves and have to pay for it to other companies or agencies, which is really expensive and there is not any guarantee of the project successfulness</li> </ul>

<sup>8</sup>Processed on basis of the data of SOSR. Compared to data of Eurostat, the category of microentities also includes the business operations of entities with unidentified number of employees.

Opportunities (O)	Threats (T)
<ul style="list-style-type: none"> <li>➤ Simplification of legislation for start-ups by the form of a single company with shares and reduce administrative burden of establishment and reporting of business activities</li> <li>➤ Financial and administrative support for SMEs in the field of introducing innovation is the official priority of the Government of the Slovak Republic as well as the priority of support for the programming period 2014 - 2020</li> <li>➤ Project JEREMIE approached equity products to all bigger cities by selected banks</li> <li>➤ Implementation of projects and initiatives to support SMEs from the EU Structural Funds</li> <li>➤ Increase of the number of companies providing financial support for seed, start-up projects and business</li> <li>➤ Existence of a strong industrial base and of a developed industrial infrastructure to support SMEs introducing innovations in business</li> </ul>	<ul style="list-style-type: none"> <li>➤ Persistence of delays associated with the liquidation of the company and its liabilities</li> <li>➤ Long-term underfinancing of SMEs which is reflected in the low potential of expansion of acquisition and in low profitability as well as the lack of funds for disbursement of partnership in the use of public funds by private companies</li> <li>➤ Current challenges to use financial resources from the EU funds or other public sources set the conditions of exploitation of liens up to the project value which is unacceptable for many SMEs</li> <li>➤ Non-systemic action of the Government in the process of the legislation simplification</li> <li>➤ High tax and levy burden of entrepreneurs</li> </ul>

Source : Own - processing

Based on the realized SWOT analysis it is recommended to reduce the administrative burden associated with the business, to simplify the procedures for business start-ups, and also when reporting business activities and communication with the relevant authorities (tax office, licensing office, customs, health insurance and social insurance, where the process of digitization has not been finished yet) as well as in obtaining external funding for business support (EU funds, bank loans, capital funds, etc.). It would be appropriate for Slovakia to have a specialized agency financed by the state or EU funds, which would be an advisory institution for SMEs in the case of administration of projects, writing project plans, explaining the challenges and expected outcomes of the project.

### 3. Conclusion

In the current highly globalized EU with the single European market where the free movement of goods, services, capital and people is guaranteed, large differences between the situation of SMEs across countries may be observed. There are numbers of national barriers which hamper the development of a business environment that would enable faster and easier growth of small and medium-sized enterprises

Despite globalization, a big difference among various geographical areas of the EU is still visible. The example is the V4 countries, where the business environment is easily comparable. However, this business environment in general lags behind the EU average. In recent years, significant changes in the legislative framework and administration have been implemented in these countries, including Slovakia.

At the beginning of 2014 the license tax for legal entities was introduced as well as a withholding tax on payments to off-shore countries, conditions for deduction of a tax loss were changed, a withholding tax was introduced and at the same time there was a decrease in the rate of corporate tax to 22%. Subsequently, changes in depreciation were adopted, a limit to purchase cars was given as well as the 80% rule when buying property for personal

consumption, increased levies for self-employed. There was a change in aggregate statements to VAT and in the system of collection of tax on motor vehicles, where the tax rate was unified for the whole territory of Slovakia. The positive changes were the acceptance of the so-called super deduction for research and development and the introduction of the tax deduction for low-income groups of employees, the introduction of virtual cash register for all entrepreneurs, the application of VAT based on a receipt of payment, the abolition of duty of VAT guarantee for start-ups, the increase of minimum wage, which, however, in our opinion, is not necessary in the market economy.

Currently, negative attitudes remain towards the current state of business and changes in business conditions as well as to the possibility to obtain public financial support for business.

Despite the important role SMEs in globalized EÚ play in some economic indicators, for instance job creation, support of the local economy, balancing the regional development disparities, its position in foreign trade, profit generation and introduction of innovations into economic practice is getting worse in some European countries. These systemic problems of SMEs may significantly influence the future development of the economies of EÚ countries, implementation of the national strategies and policies as well as the efficiency of the implementation of the Structural Funds of the EU.

One of the key factors of further dynamic development of SMEs must be the innovation and the implementation of innovation processes. An important role in implementing innovations and information - communications technologies (ICT) play small and medium-sized enterprises which indicate the direction and pace of the economic development.

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## CSR ACTIVITIES IN ENVIRONMENTAL AREA – GLOBAL TRENDS AND BEST PRACTICES

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**Abstract.** A number of global and local companies would like to be responsible not only for the quality of products they provide, but also for the quality of life in the community in which they operate. Their primary goal is to do business so that the processes and business results should benefit whole society. Long-term obligation of companies is to create and adhere to ethical standards contribute to improving the state of the society and the environment. The main idea of the concept of corporate social responsibility is to create values other than profit. Be so responsible is very good for companies, because companies can use their better environmental and social performance as a competitive advantage, which applies in all segments. The paper will deal with one of the three main areas of CSR, which is the so-called triple bottom line, in particular its environmental and individual activities that companies in this area can be applied within your business. The second part of the contribution will demonstrate examples of good practice and focuses precisely on specific ways and activities that the companies applies in environmental field of CSR and they try to reduce the impact of its business on the environment. Such activities in the field of environmental protection, companies can generate significant cost savings through eco-efficiency in operation or production and ultimately improve the reputation and gaining a positive corporate.

**Keywords:** corporate social responsibility, environmental protection, ecological activities, best practices, global trends

**JEL Classification:** M3, M14

### 1. Introduction

The core idea of the concept of corporate social responsibility is to create other values rather than a profit. Being a responsible company pays off. Companies can use higher environmental and social effectivity as a competitive advantage through all the business sectors. The paper deals with the examples from best practices focusing on particular CSR activities in the environmental field. It describes global trends implemented by successful multinationals which have set the example for the others. We are going to see how to save energy, water or heat in operation or production processes, how to minimise waste and recycle, how to offer eco-friendly products and services in production, design, packaging, transport, etc.

### 2. Theoretical basis for Corporate social responsibility

Nowadays corporate social responsibility is becoming a natural part of international corporations. The first official definition of the concept dates back to 2001 and is included in

a so-called Green book of the European Union named Promoting a European Framework for Corporate Social Responsibility. As stated in this document, corporate social responsibility is defined as voluntary integration of social and economic interests into day-to-day company activities and interactions with its stakeholders (European Commission, 2001). As defined by Bussard and coll. corporate social responsibility requires a company to switch from a profit-minded philosophy to doing business in a broader context of social and ecological relations. A company should not operate in isolation but it should be a direct part of the world outside. By this philosophy the company functions on a triple-bottom line principle. It can be described as a company philosophy claiming that the overall business effectivity is based upon combined contribution to economic prosperity, quality of environment and social capital (Bussard, 2005). A triple-bottom line consists of three basic areas where businesses can use a wide range of possibilities and ways of implementing particular activities:

- economic area (profit),
- environmental area (planet),
- social area (people).

The paper focuses on the environmental area which is to be presented in the following chapter.

### **3. Environmental area of CSR**

There are a lot of human activities causing damage to the environment. Businesses have higher or lower impact on their environment and surroundings. It is basically the environmental area of CSR which specialises in the activities reducing environmental impact of business operations. The company exercises these activities beyond obligatory statutory requirements. As stated by Mrs Zaušková and coll. these activities are defined as follows:

- company environmental policy and its appropriate communication towards employees;
- reduction of environmental impact;
- reduction of material and energetic requirements of production processes (savings on energies and materials);
- waste management;
- waste reduction;
- environmental management systems;
- protection of resources;
- recycling;
- waste sorting;
- use of alternative energy sources;
- implementation of green technologies;
- reduction of environmental impact, investments in BAT – Best Available Technique;
- ecological design of products;
- ecological product packaging;
- cooperation with environmentally-certified suppliers;
- transparency in environmental issues (Zaušková, 2013).

Reducing negative environmental impact depends upon the field of business a company operates in. For instance, an entrepreneur with a production facility can use transport or packaging material repetitively to transport other goods, some production output can be used

as secondary raw material to manufacture other products, recycled paper is used for printing, waste can be sorted and recycled, etc. All the above mentioned activities contribute to reducing negative environmental impact of business activities. The following chapter is going to deal with specific methods and examples of best practices of CSR in the environmental area in multinational companies.

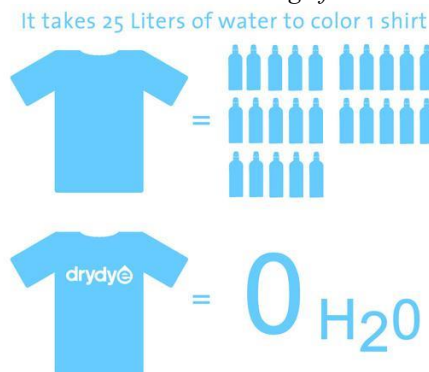
## 4. Environmental area of CSR - global trends and best practices exemples

There are various principles of corporate social responsibility in the environmental area. The following chapter is going to deal with some innovative ways implemented by successful companies in the world, e.g. energy and water saving, recycling, production of eco-friendly products or using ecological packaging.

### 4.1 Water saving when colouring T-shirts

The company Adidas has prepared 50,000 „Dry Dry“ T-shirts produced without any use of water at all. A new technology is very valuable. Even though the whole world is attempting to produce in an ecological and environmentally-friendly way, clothing industry is using water resources beyond measure. Every two years as much water is used in colouring as is the size of the Mediterranean Sea. The company Adidas used compressed carbon monoxide instead of water, which brings about savings of up to 50% of energy and chemicals. More than 1.2mil of litres of water were saved when producing 50,000 T-shirts by this method.

Figure 1: Water consumption in traditional colouring of T-shirts and „dry dry“ T-shirts



Source: <http://www.ecouterre.com/>

### 4.2 Water saving in exploitation of cotton

Cotton represents another potential risk in terms of water consumption. As assumed by the World Wildlife Fund 8,500 litres of water are used to obtain 1 kg of cotton. Such a quantity is needed for production of one pair of jeans. The companies Levi's, IKEA, Gap and Adidas are trying to limit this waste. Farmers in India, Pakistan, Bresil, Western and Central Africa are helped to implement drip irrigation and various methods of rainwater harvesting system.

### 4.3 Statement of environmental profits and losses

Representatives of a German company Puma understand that in order to introduce sustainability, they have to know exactly what is its environmental impact within the whole supplier chain. Therefore Puma has implemented a so-called statement of environmental profits

and losses. The whole planet is seen as a supplier whose services have to be paid for (fresh air, clean water, healthy biodiversity, fertile soil). The results of the analysis showed that 6% of the total costs are generated by its direct activities, e.g. in offices, warehouses and stores. Another 9% is generated by suppliers, i.e. the producers of Puma shoes and clothes. The remaining 85% (€124 mil.) are linked to natural resources of raw materials such as leather, cotton and rubber. The analysis indicates that Puma suppliers are responsible for the majority of waste the company is generating. Consequently they are joining their efforts to reduce the amount of waste by way of new ideas and technologies. The Puma project can be inspiring for other companies as it enables to evaluate not only current impact of the company but also future risks arising out of excessive exploitation of natural resources.

#### 4.4 Recycling

Apart from energy and water savings companies have to face one more challenge – recycling. Nowadays CSR trend is being implemented in Levi's and Mark & Spencer whose creative advertising campaigns promote a sustainable lifestyle. In April 2012 Mark & Spencer launched a campaign named „Shwopping Revolution“ – when doing their shopping customers were asked to look into their wardrobes and give away a piece of their old clothes. Through a non-profit organisation Oxfam the clothes were donated to charity or used for production of new outfits. Eye-catching rich pink bins called „shwop bins“ could be found in hundreds of Marks & Spencer stores. Thanks to the initiative, Marks & Spencer collected 2.2 mil of pieces of clothes.

The company H&M makes new outfits from old clothes collected from its customers. In 2013 the company launched a new collection of outfits made of recycled old clothes. Customers can donate clothes of any brands and production. The Swedish company is not the first textile producer which has ever tried to reduce its environmental impact in this way. However, it tops the chart in terms of coverage as it launched the biggest global initiative of this kind. H&M wants to avoid throwing away thousands tons of textiles to waste whereas approximately 95% of them can still be reused. Customers are motivated to give away used clothes by a 15% discount on shopping. The question is, however, whether such motivation really contributes to sustainability. By being given a voucher, customers can feel motivated to buy even more and the effect of recycling is reduced or even disappears. On the other hand, we can not deny energy savings of up to 97% as recycled cotton and polyester are used instead of completely new materials.

Figure 2: H&M Campaign „Don't let fashion go to waste“



Source: <http://about.hm.com/>

The company Puma is also considering motivating its customers to donate their old clothes for recycling by placing collection bins in its stores. The first attempts in Germany brought 400kg of second-hand clothes and therefore Puma has decided to implement the scheme worldwide.

#### 4.5 Eco-design of products

A strategist Diana den Held from the Erasmus University in Rotterdam assumes that good eco-design of products, innovations and reuse of materials can generate considerable savings for businesses. Therefore companies should focus more and more on this field. This idea stems from the principles of circular economy – a so-called principle of Cradle to Cradle motivating companies not to produce less harmful products but rather those with potential to improve the environment. Nowadays there are various foreign companies which are trying to renew, recycle and reuse existing materials or return waste back into production and thus implement the above mentioned principle of Cradle to Cradle. The company Herman Miller is one of the examples of best practices. It is one of the pioneers who started designing products by a method of „Materials Passport“. The company is making chairs which can be disassembled into parts within 15 minutes, recycled and reused for a similar purpose. The shipping company Maersk produces its cargo ships in the same way.

#### 4.6 Eco-friendly products

A Swiss company Freitag is another example of best practices. The story of trendy bags by Freitag started in Zurich in 1993 when two graphic designers Markus and Daniel Freitag wanted to buy a bag to carry their graphic designs. As most of the inhabitants of Zurich, they took a bike to get to work and therefore they had specific requirements regarding bags. They were looking for those models which will be firm enough, of a high quality and impermeable so as their designs remained dry even in rainy weather. Finally they decided to produce their own bags and got inspired by colourful lorry covers. They used an old lorry cover as a basic material while straps were made from an unused seat belt and a wheel from an old bike was used as edging. For many enthusiasts of „eco-friendly bags“, the Freitag brothers did not end up with two models only but this idea helped them start up a new venture where 130 members of staff are employed these days. Tens of models made from used materials are sold in 400 stores worldwide. When shopping online, customers can even choose a rubber cover or the specific parts a bag will be made of. Each bag is not only ecological, but also original and for more than 20 years Freitag has been a favourite fashion brand worldwide.

*Figure3: The bag Freitag made from the lorry cover*



Source: <http://www.freitag.ch/>

In February 2013 the company Puma launched a new collection of sustainable shoes, clothes and accessories that can help customers reduce the amount of waste and at the same time prevent environmental pollution. A sports brand created a complete line of „eco-products“ which are 100% certified by the Cradle to Cradle system. The product line called InCycle Collection offers shoes, T-shirts, jackets and bags made of bio-degradable polymers, recycled polyester and organic cotton grown without use of pesticides, chemical fertilizers or other toxic substances. The company focused on increasing use of sustainable materials thanks to the study which showed that 57% of environmental impact by Puma is linked to production of raw materials such as leather, cotton and rubber. There is one condition for product recycling – materials can not be mixed with other ones because otherwise they become non-recyclable. That is the reason why only homogeneous materials are being used in Puma products. For instance, a bio-degradable jogging jacket by Puma is made of 98% of recycled polyester from plastic bottles while an ordinary jogging jacket contains other additional materials, e.g. elastan. Even the zipper itself is made of recycled polyester. In order to ensure bio-degradability of products it is worth mentioning that they all have to be made of organic fibres without use of any toxic substances. Apart from that the international standard for waste composting has to be fulfilled.

#### 4.7 Ecological packaging

The modern trend in an environmental aspect of CSR suggests producing not only ecological products from recycled materials but also giving their products environmentally-friendly packaging. Since 2010 Puma has been using a new design of boxes for shoes – Clever little bag. In comparison with traditional packaging, a so-called clever bag saves 8,500 tons of paper, 20 mil. megajoules of electricity, a million of litres of fuel oil, a million litres of water, 500,000 litres of gas and 275 tons of plastic a year.

*Figure 6: Eco-packaging and Clever little bag by Puma*



Source: <http://www.puma.com/>

## 5. Conclusion

In particular chapters we dealt with the field of corporate social responsibility of businesses, more precisely with the environmental aspect of this concept. The core part focused on specific



methods of implementation of various activities in the environmental area of CSR and stated numerous best practices of companies having implemented these initiatives. Even these steps towards environmental protection can help companies bring considerable cost-effectivity either in operation or production processes. And what is more, a company interested in the environmental protection is highly acclaimed by its customers.

### Acknowledgment

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## GLOBALISATION OF THE LNG TRADE IN CASPIAN REGION

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**Abstract.** The Caspian region is one of the oldest areas of the world where oil is produced and also is an important source of global energy production. This area has significant oil and natural gas reserves. Most of the production of oil and natural gas in the Caspian region is focused mainly on the coastal Caspian Sea countries - Russia, Azerbaijan, Kazakhstan, Turkmenistan and Iran. In the pursuit of globalization of the LNG market and diversification of its supply to the European market and thus reduce dependence on Russia, Turkmenistan actively promotes Trans-Caspian pipeline project and supports the NABUCCO project, a rival project of Russia's Gazprom - "Turkish (former South Stream) branch." An article analysis the LNG trade and identifies the main transit routes from the Caspian region to Europe with regard to their geographical aspects. It also characterized the potential of the selected countries (Turkmenistan, Russia, and Ukraine) and their regional geo-strategic and geo-economic conditions. The article points out alternative scenarios of the creation the gas pipeline on the route of the Caspian Sea - Europe.

**Keywords:** The Caspian Sea, the export of LNG, pipeline, waterway

**JEL Classification:** Q42

### 1. Introduction

The Caspian region in terms of geography separates Russia from the Islamic states of the Middle East. Due to its geostrategic and geo-economic location it is and has been since the early 90's, the focus of intersecting interests of regional powers - Russia, Turkey, Iran, China and even the world's "one" - the United States. (Souleimanov, 2003).

The Caspian region is one of the oldest areas of the world where oil is produced and it is also an increasingly important source of global energy production. This area has significant resources; not only oil but also gas. (available on: <http://www.eia.gov/>).

Most of the reports and information about oil and gas in the Caspian region are mainly focused on the coastal countries of the Caspian Sea - Russia, Azerbaijan, Kazakhstan,

Turkmenistan and Iran. The Caspian Sea, located between Europe and Asia, is one of the largest inland bodies of water and flows into it more than 40% of the world's inland waters. In some cases, it is stated that the concept of the sea is not correct because it is the largest salt lake. The size categorically meets the characteristics of a sea or a lake. From north to south it measures 1200 km long and 320 km wide. (Tvrda, 2015).

The Caspian Sea has great importance to national and international waterways. Most often in the Caspian Sea is the transportation of oil, gas, wood, corn, cotton, rice and sulfur. The most important ports in this area are Astrakhan, Baku, Makhachkala, Turkmenbashi and Aktau Krasnovodsk. (available on: <http://www.energycharter.org/>).

## **2. The export potential of Turkmenistan**

According to the OPEC of the year 2013, Turkmenistan has the fourth largest natural gas reserves in the world. From the largest deposits of gas, Galkynyş benefits Chinese and Turkish companies. At the present, Turkmen gas is distributed in three countries: Russia, China and Iran. Until 1997 the only way to supply gas beyond the borders of Turkmenistan was a Russian gas pipeline: Central Asia - Central. Nowadays, the greatest volume of gas is supplied to China. In 2009 a gas pipeline was put into operation, Turkmenistan – China, which is currently steadily increasing its capacity. Operational capacity of the gas pipeline from Turkmenistan to China is 55 billion cubic meters per year and by 2017, the transport capacity towards the east will increase to 80 billion cubic meters.

According to the agreement signed between the Chinese National Oil and Gas Company (CNPC) and State group Turkmengaz, Turkmenistan is required by the year 2021 to supply 65 billion cubic meters of gas per year. In 2014, production of natural gas in Turkmenistan reached more than 76 billion cubic meters and exports more than 45 billion cubic meters. In 2015, Turkmenistan planned to pump more than 80 billion cubic meters of gas. According to analysts, potential deposits allows Turkmenistan to fully ensure gas supply to all directions, including to Iran, Russia, China, the project TAPI (Turkmenistan - Afghanistan - Pakistan - India), the Trans-Caspian direction and other available ways.

In pursuit of the globalization of the LNG market and diversify its supply to the European market and thus reduce dependence on Russia, Turkmenistan actively promotes Trans-Caspian pipeline project and supports the NABUCCO project, a rival project of Russia's Gazprom - "Turkish (former South Stream) branch". In early May in Ashgabat, they held quadripartite negotiations on gas supplies from Caspian areas into the Europe, which was attended by representatives of gas companies of Azerbaijan, Turkmenistan, Turkey and Vice President of the European Commission for Energy. (Paltsev, 2015).

According to the results of the conference, the intention of the revised project trans-Caspian pipeline from Turkmenbashi has been restored and since 2007 also the existing South – Caucasian gas pipeline Baku - Tbilisi - Erzurum. Trans-Caspian pipeline project from 2010 foresees the construction of a branch to the port of Kulevi on the Black Sea in Georgia, which is together with the terminal in Supsa used to transport oil products and LNG with Azerbaijan State Company SOCAR. (available on: <http://www.traceca-org.org/>).

Figure 1: Gas pipelines from the Caspian region



Source: <http://www.eia.gov/>

As was stated by the European Commissioner for Energy, the restoration of this project, supported by the European Union along with other projects "South Stream", giving the company envisages the construction of a terminal for the liquefaction of gas in Kulevi and Turkmenistan to export Azerbaijan natural gas in the years 2019-2020. Turkmenistan is making every effort for the early completion of construction of the pipeline in the direction of east to west, connecting the Caspian Sea with the main bearing on its territory. (Raj et al., 2016).

Figure 2: South Stream pipeline



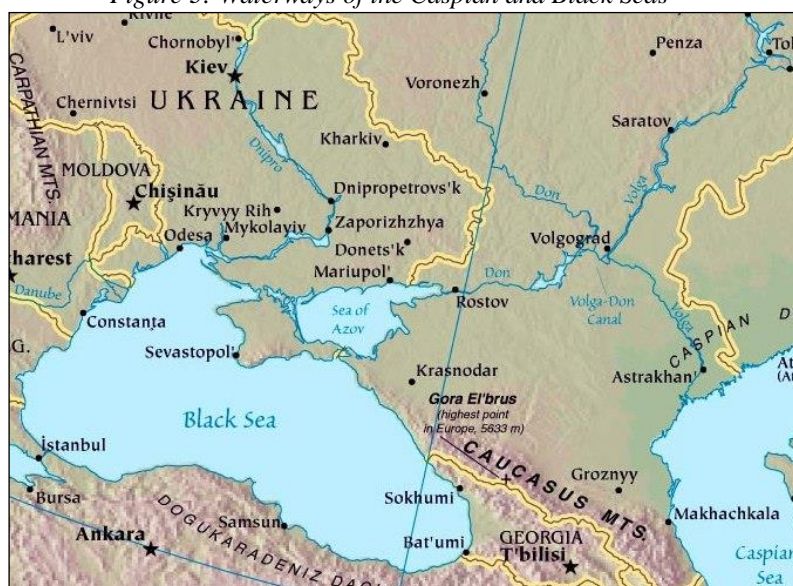
Source: <http://www.eia.gov/>

Hypothetically, we can count on even one more waterway to transport gas from the Caspian to the Black Sea. It is through the inland waterways of the Volga and Don. These pass through Russian territory and they are under its full control. The average length of the period of navigation on the Volga-Don Canal is 211 days. Navigation through the canal during this time cannot extend more than 5,000 vessels with the weight capacity up to 7,000 tons. It is mainly used for transporting solid and liquid cargo, especially petroleum products. Navigation on the channel is allowed only under the Russian flag, which will require permanent or temporary registration of ships to the Russian company. Temporary registration can be done through

Bareboat Charter. All process must be supervised by the Russian Maritime Register or the Russian River Register. (Khan et al., 2016).

Existing intergovernmental convention between the Russian Federation and Azerbaijan about the possibility of navigation through the canal under the flag of Azerbaijan does allow this navigation, but the associated procedure was very difficult, and so the "Caspian cruise" decided that they will not use it anymore. Under the specific condition, agreed between participating governments, theoretically, there is the possibility of navigation on the Volga - the Don canal under the flag of another State. Kazakhstan as a member of the Customs Union had this experience with tanker Batyr. After lengthy negotiations and subsequent final approval of navigation, the tanker passed E50 under the flag of Kazakhstan from the Caspian to the Baltic Sea. Regular transport of goods under these conditions is not possible. The largest transit company transporting the liquid cargo on the Volga-Don canal, which have not been established in the Russian Federation is the company Palmali from Istanbul, Turkey. Their "river-sea" tankers are specializing in the export of oil and oil products. They are registered under Russian subsidiaries and passing them under the Russian flag. It's possible because the products are mostly carried by Lukoil and its partner Litasco and also the Azerbaijan state company SOCAR. (Venkatarathnam, 2008).

Figure 3: Waterways of the Caspian and Black Seas



Source: Halonen-Akatwijuka & Hart (2015).

According to the experience of Ukrainian company Integral with the transport of oil products from Turkmenistan to ports in the Black Sea in the period 2012 - 2013 shows that despite the very reasonable price of products purchased on the Turkmenistan exchange of goods company was forced to close this activity. (Ruester, 2010).

The main obstacles were:

- the necessity of paying 100% advance payment for the purchase of the entire annual volume of goods,
- non-repayable funds if the goods are not collected in the ordered volume,
- long waiting times for loading of the goods at the port of Turkmenbashi.

Russia uses various official and unofficial ways to control high volume of shipping in the Caspian Sea region and controls the export of energy fuels without appropriate authorization. Supply of natural gas from Turkmenistan via a different transit route than the existing pipelines does not exist according to the customs of the Russian Federation. (Hartley, 2015).

### **3. The export potential of Russia**

Russian Federation does not currently have any LNG export terminals in the south of the country. However the report about the suspension of building "South Stream" with the effort focused to eliminate Ukraine as a transit country on the one hand and competition between the pipelines "Turkish Stream" and "Nabucco" on the other hand, presumably bring Russia to build a terminal on the Russian coast of the Black Sea.

After Russia's abandonment of the plan to build another gas pipeline through the Black Sea within the „Turkish Stream" and the abolition of "South Stream" it was for the implementation of the strategy of diversification of supply of the European Union adopted the "EU Energy Security and Solidarity Action Plan". This measure, as well as a new strategy aimed at eliminating Russian gas transit through Ukraine, quite logically towards the use of supplies through the Black Sea and the use of tankers and liquefied gas technologies. (Boucher & Smeers, 2011).

In this case, it will make sense to build a terminal in an area with developed infrastructure of ports, open facilities areas, sufficient depth and access to gas deposits with the possibility of growth in mining. Most preferred appears to be a new Black Sea port of Taman. The first trial operation of the port was in 2013. The main transport commodities are crude oil and petroleum products, LPG, ammonia and grain. The maximum capacity of ships is up to 150,000 tons. Last year the turnover of goods at the port was around 3 million tons. It is expected, that in full port operation, the annual turnover will be around 30 million tons with a tendency of further growth. (Stopka & Kampf, 2016).

Less likely it is to build a terminal in areas with high capacity flow-through pipelines reaching to the coast, but without open spaces and port infrastructure. It is mainly the gas pipeline "Blue stream" to Turkey, which reaches the coast between the ports of Tuapse and Gelendzhik and part of the gas pipeline "South Stream" in the spa area of the town Anapa.

### **4. The export potential of Ukraine**

Ukraine has developed a feasibility study concerned with the construction of an import terminal focused on re-gasification facilities in the port Yuzhne. However, the building is blocked because Turkey did not allow navigation of tankers carrying liquefied gas through the Dardanelles, the Sea of Marmara and the Bosphorus into the Black Sea. It would be possible organization of deliveries through the terminal to the receiving terminal in Komarno, after the release of the voyage and the construction of the terminal. In the case of the implementation plan, it would be possible to deliver LNG from this terminal to the receiving terminal in Komarno. However, it is necessary to release the navigation and build appropriate terminal.

## 5. Conclusion

The major exporters of natural gas in the Caspian region are Russia and Turkmenistan. Slight resources are also in Azerbaijan, but it does not accrue to market needs. A transit country that has spare capacity from Russia and Iran is Turkey. The Ukraine may develop into a similar transit country, but first, it has to meet the requirements of building re-gasification facilities in Yuzhne, south of the Odessa. For the above countries - suppliers of LNG terminals and minimum distance from the Slovak ports is Turkey with its State-owned company BOTAS - Marmara Ereğlisi in the Marmara Sea and a private company EgeGaz Aliage in the Aegean Sea. After obtaining the consent of the passing of a larger number of ships - vessels for transporting gas through Turkey canals, the perspectives for the position of re-gasifying LNG facility in Southern Ukraine, where they could potentially realize deliveries. Other countries that are exporters of gas in the region do not currently have the capacity to liquefy LNG. From these countries – suppliers with terminals of LNG and the shortest distance to Slovak ports is Turkey with its State-owned company BOTAS – Marmara Ereğlisi in the Marmara Sea and a private company EgeGaz Aliage in the Aegean Sea.

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## GLOBALISATION OF ENZYME MARKETS AND INFLUENCES ON LOCAL MARKETS

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**Abstract.** The global enzyme market is characterized by high rate of innovations, changes and market dynamism. Current turbulent markets and rapid changes in industrial productions create space for use of new or eventually optimised products. This paper reports and analyse the results of recent survey of main suppliers on CZ and SK enzyme markets. The purpose of the paper is to compare the marketing approaches of the suppliers and level of involvement of customers to their marketing activities. The survey was focused on suppliers of food, personal and home care and feed enzymes. Totally 25 companies were contacted with questionnaire. Out of 25 companies 14 provided fully usable questionnaire, which represents 56%. The questionnaire contains the questions about marketing strategy, marketing activities, and used marketing tools, communication channels to customers, project ratio and CRM. Based on this survey the requested companies indicated as most important factors influencing their competitiveness on the market the strong marketing campaigns of new products, which includes pilot trials and presentations of technologies, secondary focus on experienced sales team and as third main factor high rate of joint customer projects. Other factors as not complete product range, or cooperation with universities were evaluated as average important. This paper evaluates the market strategies and orientation of enzyme suppliers and indicates the possible improvements in marketing strategies on local markets.

**Keywords:** enzymes, market analysis, marketing strategy, globalisation

**JEL Classification:** F63, M31, O32

### 1. Introduction

Vstupom Slovenska a Česka sa lokálne trhy otvorili úplne pre subjekty z EU, čo výrazne zmenilo v druhej polovici minulej dekády charakter podnikateľského a konkurenčného prostredia. Vstupom nových subjektov na trhy sa prudko zvýšila konkurencia distribučného prostredia. Zamestnávateľia boli nútení implementovať pozmenené stratégie, kvôli limitácii ich hlavných zdrojov – najmä kvalifikovaných expertov a kapitálových prostriedkov (Šubertová, 2013). Vzhľadom na fakt, že väčšina slovenských a českých malých a stredných spoločností bola založená na princípe rodinného podnikania, tieto spoločnosti hrali nezastupiteľnú úlohu v národných ekonomikách (Strážovská, 2015). Konkurencia medzinárodných distribučných a rodinných spoločností vytvorila špecifické konkurenčné podmienky. Je dokázané viacerými štúdiami, že zvýšená konkurencia vedie k zvyšovaniu efektivity a generuje benefity pre zákazníkov. (Zemanovičová, 2010) Na odlíšenie sa od konkurencie, by podnikateľský subjekt mal poskytovať jedinečné služby a uspokojovať zákazníkov atak si získať ich lojalitu (Rypaková et al., 2015). Rozdielny prístup podnikateľských subjektov k vytvoreniu si konkurenčnej výhody ďalej segmentoval spoločnosti pôsobiace na enzýmových trhoch.

Konkurenčná výhoda môže byť vytvorená aj prevzatím kvalifikovaného personálu od konkurencie a jeho ďalší rozvoj, významnú úlohu v podnikateľských subjektoch hrá aj manažment ľudských zdrojov (Hyršlová et al., 2015). Tento fakt hrá najdôležitejšiu rolu v úzko špecializovaných subjektoch a v oveľa menšej miere sa prejavuje v distribučných spoločnostiach so širokým portfóliom produktov, kde na lokálnej úrovni často chýbajú vysokokvalifikovaní experti. Implementácia a využitie informačných systémov je aktuálne už nevyhnutným prostriedkom na zvýšenie konkurencieschopnosti zvlášť v potravinárskom priemysle (Kajanová, 2015, A). Informačné systémy uľahčujú komunikáciu a výmenu špecifických informácií smerom k zákazníkovi bez nutnosti osobného kontaktu a tak sú dokumenty k dispozícii zákazníkovi on-line bez akýchkoľvek zdržaní (Látečková et al., 2009). Často podobné doplnkové služby hrajú významnú úlohu pri finálnom rozhodovaní zákazníkov. Zákazníci subjektívne hodnotia ponuky a ich pridanú hodnotu a často je vysoká pridaná hodnota prisúdená prekvapujúcim faktom pre dodávateľa (Pecinová et al., 2015). Väčšina spoločností v súčasnosti aplikuje princípy udržateľnosti ako súčasť zodpovedného správania sa firiem v podnikateľskej činnosti a zároveň ich využíva ako prostriedok zvýšenia konkurencieschopnosti (Križanová et al., 2015). Biopalivá a bioenergia teda aplikácie enzýmov, ktoré sú vo fáze exponenciálneho rastu poskytujú ďalšie možnosti na vytvorenie konkurenčných výhod. Informácie o princípoch a praktických aspektoch použitia dvoch rôznych nástrojov a to predaj emisných kvót a investície do obnoviteľných energetických zdrojov sú ďalšími možnosťami pre spoločnosti ako zvýšiť svoj trhový podiel. (Plchová 2012) Už samozrejmosťou marketingových stratégií sú sociálne inovácie. Aktuálne trendy sociálnych inovácií závisia od rozmanitosti služieb, flexibilita služieb zákazníkom a od kvality poskytovaných služieb (Majerčáková, 2015). Subjekty teda majú širokú paletu nástrojov a možností odlišenia sa od konkurencie a k získaniu výhod. Tento príspevok prináša súhrn informácií o rozhodovaní subjektov a ich vnímaní dôležitosti jednotlivých faktorov pri rozhodovaní a tvorbe svojich stratégií.

## **2. Svetový trh s enzýmami a jeho špecifiká**

Aktuálne je popísaných v odbornej literatúre približne 5000 rôznych enzýmov, pričom reálne sa komerčne využíva a produkuje cca 45 z nich. Až 75% spotreby industriálnych enzýmov pokrývajú 3 najväčší producenti, celkovo je na svete vyše 400 technologicky orientovaných spoločností produkujúcich enzýmy, avšak drvivá väčšina z nich vyrába jeden vysoko špecifický produkt a ten ďalej distribuuje cez niektorého z hlavných producentov (Tramper & Poulsen, 2005).

Enzýmy sa používajú v technických aplikáciách, pri výrobe potravín, vo výžive zvierat, v kozmetických prípravkoch, v prácach prípravkoch a ekologických čistiacich prípravkoch, v humánnej a veterinárnej medicíne, v biotechnologických aplikáciách a samozrejme ako prostriedok na ďalší vývoj.

Podiel industriálnych a potravinárskych enzýmov je celosvetovo vyrovnaný, najvyšší nárast spotreby enzýmov je vo výrobe biopalív, táto aplikácia je zároveň aj najturbulentnejšou, keďže je dotovaná jednotlivými štátmi a pri zmene dotačných parametrov dochádza k prudkým výkyvom v produkcii. (Norus, 2011)

V rokoch 2009 a 2010 sa výroba bio palív podieľala 20% na použití enzýmov, pričom v priebehu roka 2011 a 2012 tento podiel klesol na 16%, opätovné zvýšenie podielu sa očakáva najmä s nástupom technológií spracúvajúcich celulóзовé odpady , tzv. 2 generácia bio-

etanolovej výroby a tiež sa významnejšie prejavuje nárast produkcie bioplynu, pri použití nových technológií sa očakáva, že dotácie budú obmedzené.

*Table 1: Percentuálne rozdelenie spotreby enzýmov podľa priemyselných aplikácií*

Aplikácia	Rok 2015 - % podiel	Rok 2010 - % podiel
Potraviny a nápoje	27	33
Kozmetika a detergenty	34	29
Bio-energia/Biopálivá	15	20
Priemyselné technické aplik.	8	8
Krmovinárstvo	12	9
Farmácia/výživa ľudí	4	1

*Source: Industrial enzymes Global Trends and Forecats to 2018*

V celosvetovom meradle postupne rastie použitie enzýmov najmä v prácach prípravkoch a vo výžive zvierat, v absolútnych číslach celý trh rastie, aj keď napríklad percentuálne podiely v potravinách a bioenergii poklesli (Cushion, 2010). Svetový enzýmový trh v roku 2017 je odhadovaný na 6,5-6,7 mld € (7,3-7,6 mld USD).

Svetovo najdôležitejšou aplikáciou v roku 2017 ostanú práce prášky a čistiace prípravky, nasledované tradične potravinárskymi aplikáciami, vysoký rast na trhu s enzýmami do detergentov je daný prudkým nárastom spotreby enzýmov na trhoch rýchlo rastúcich ekonomík v Ázii a v krajinách bývalého ZSSR (Shuang Li, 2012).

Z regionálnej perspektívy je najväčším spotrebiteľom enzýmov Severná Amerika nasledovaná tržmi západnej Európy. Najvýraznejšie rastúce trhy sú trhy Číny, Indie, Japonska a Ruska.

## 2.1 Enzýmové trhy Česka a Slovenska

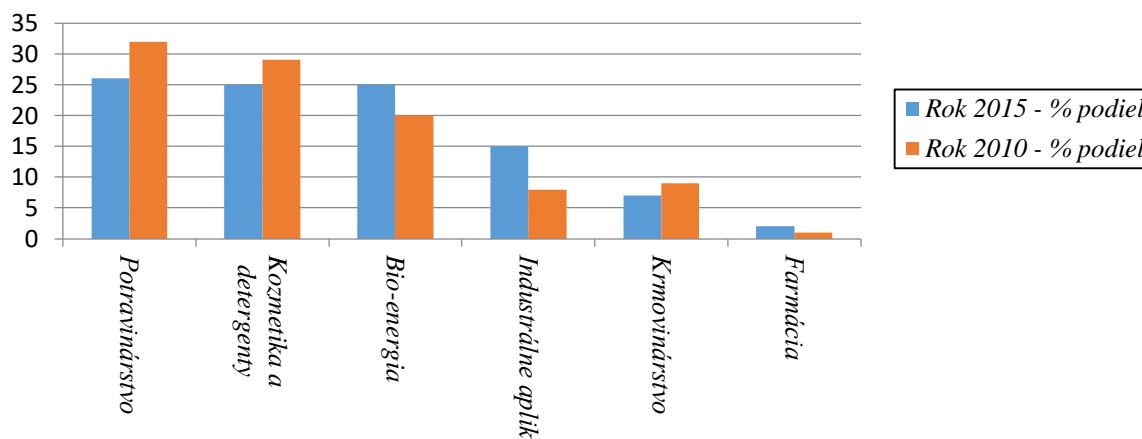
Pre Česko a Slovensko je charakteristický trend rastu spotreby enzýmov najmä v industriálnych a farmaceutických aplikáciách, vývoj v potravinárskych enzýmoch je výrazne odlišný od svetového trendu, jedná sa najmä o vplyvy importov potravín do oboch krajín zo štátov EU, najmä však z Poľska.

Tieto importy a absencia ochrany trhov voči dotovaným produktom spôsobila pokles a stagnáciu lokálnych potravinových výrobcov, pričom obe krajiny aktuálne nie sú schopné pokryť ani polovicu svojich potravinových potrieb domácou produkciou (Kajanová, 2015, B).

Česko a Slovensko sú viac industriálne zamerané, čiže podiel spotreby enzýmov v technických aplikáciách je percentuálne vyšší. Najmä na Slovensku bol pokles v priebehu 5 rokov výrazný o celkovo 6% z pôvodného 32% na 26 % podiel potravinárskych enzýmov na celkovej spotrebe.

Percentuálny podiel klesol aj pri kozmetických aplikáciách avšak tu sa nejedná o zmenšenie objemu produkcie avšak ide iba o percentálnu stratu podielu voči prudko rastúcim aplikáciám v bio-energiách, industriálnych aplikáciách a farmácii, ktoré rástli rýchlejšie.

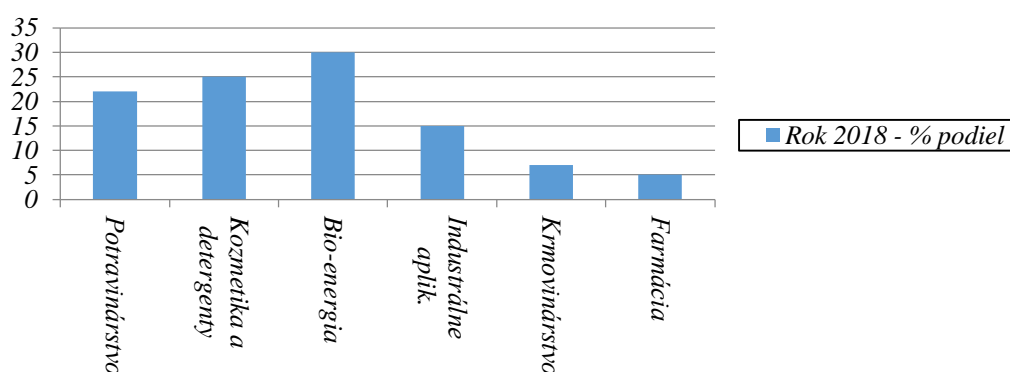
Figure 1: % podiel spotreby enzýmů v priemyselných aplikáciách v Česku a na Slovensku



Source: Intrastat EU

Napriek poklesu výroby bioetanolu podiel bioenergií neklesol vďaka prudkému nárastu produkcie bioplynu, tento nárast vytvára nové segmenty trhu, ktoré vznikli iba v posledných rokoch a pred rokom 2000 prakticky neexistovali. Celkový počet bioplynových staníc v Čechách a na Slovensku neustále rastie, pričom produkujú okrem bioplynu aj elektrickú energiu do distribučných sietí. Enzýmy pri použití vo výrobe bioplynu priamo zvyšujú produkciu bioplynu produkčným organizmom v závislosti od substrátu v rozmedzí 4-35%, pri teste 30 bioplynových staníc priemerné navýšenie bolo 19%. Okrem navýšenia produkcie bioplynu boli pozorované aj ďalšie pozitívne efekty na celú technológiu, predovšetkým výrazné zníženie viskozity obsahu fermentorov. Hranica rentability použitia enzýmů zodpovedala navýšeniu produkcie plynu o 3%. Odhad nárastu spotreby enzýmů v týchto aplikáciách je najvyšší až 15-20% nárast ročne do roku 2018. Ostatné segmenty enzýmového trhu sú mierne rastové, v oboch krajinách o zmene percentuálneho podielu bude rozhodovať najmä všeobecný trend v danom odvetví, pričom výroba potravín je najslabšie rastúcim segmentom.

Figure 2: % podiel spotreby enzýmů v priemyselných aplikáciách v Česku a na Slovensku



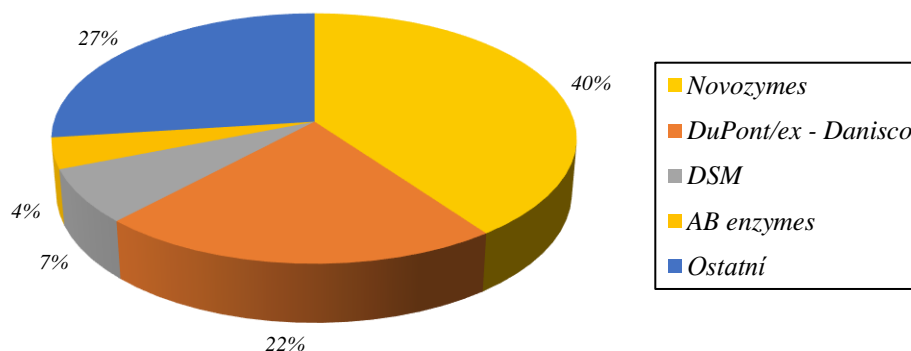
Source: Intrastat EU

Z odhadov jasne vyplýva, že vplyv bielych biotechnológií, najmä produkcia biopalív bude čoskoro hlavnou aplikáciou využívajúcou enzýmy ako katalyzátory procesov. Táto zmena a prudký rast segmentu si vyžiada zameranie sa produkčných a distribučných spoločností na š novú aplikáciu, čo povedie k zmenám v štruktúre predaja enzýmů ako aj nutnosť dodatočnej marketingovej a najmä technickej podpory „on site“ u zákazníkov v oveľa väčšej miere ako je obvyklé, z čoho bude rezultovať dodatočná potreba vysokokvalifikovaného personálu.

## 2.2 Zastúpenie producentov na českom a slovenskom trhu

Na Slovenskom a českom trhu pôsobia všetci hlavní výrobcovia enzýmov priamo ako aj prostredníctvom svojich distribučných partnerov, prípadne kombináciou oboch stratégií. Najväčší podiel na trhu má spoločnosť Novozymes s podielom presahujúcim 40% celkovej spotreby enzýmov, najúspešnejšou aplikáciou Novozymes je škrobárenstvo a detergenty. Druhý najväčší podiel má spoločnosť DuPont s 22% podielom na trhu v potravinárskych aplikáciách a detergentoch. Spoločnosť DSM má tretí najvyšší podiel na trhoch so 7% výlučne v potravinárskych aplikáciách. Aktívne sú aj spoločnosti AB enzymes, BASF, Chr. Hansen, Dyadic, The Soufflet group, ABF a nepriamo aj ďalšie ako aj niekoľko spoločností distribuujúcich enzýmy pod vlastnými značkami pochádzajúcich od rôznych menších výrobcov spolu s 31% podielom trhu.

Figure 3: % podiel producentov na trhoch v Česku a na Slovensku



Source: Novozymes report book 2015

## 3. Marketingové stratégie spoločností pôsobiacich na CZ a SVK trhoch

Hlavní producenti na enzýmových trhoch jednoznačne preferujú vysokú mieru inovácií svojich produktov za účelom maximalizácie trhového podielu. Zástupcovia 4 spoločností s najvyšším podielom uviedli inovácie produktov ako najvýznamnejší faktor úspechu na enzýmovom trhu. Ďalší enzýmový producenti ako napríklad BASF alebo Codexis sa uberajú cestou spoločného výskumu s hlavnými producentmi kvôli optimalizácii ich portfólia a efektívnosti vynaložených investícií do výskumu. Najvýznamnejšie spoločnosti okrem samostatného vývoja a inovácií produktov sa zameriavajú aj na akvizície menších spoločností, ktorým sa podarilo vyvinúť komerčne úspešný produkt alebo radu produktov, každoročne dochádza k niekoľkým akvizíciám, jednou za najčerstvejších je čiastočná akvizícia spoločnosti Dyadic spoločnosťou DuPont kvôli patentovaným technológiám na poli bioenergií, ktorá prebehne do konca roku 2016. V porovnaní s producentmi sú distribučné spoločnosti zamerané najmä na logistickú a technickú podporu zákazníkov, pričom mieru inovácií vnímajú až ako tretí najvýznamnejší faktor. Distribučné spoločnosti ako najvýznamnejší faktor vnímajú nákladovú cenu u zákazníka ako rozhodujúci faktor, druhým najvýznamnejším sa javí technická logistická podpora výrobcu. Malé spoločnosti pôsobiace iba v jednom segmente

alebo zastupujúce výrobcu enzýmov iba v určitej aplikácii kladú dôraz na servis a technickú podporu zákazníkov, pričom mieru inovácií produktov vnímajú ako najmenej významný faktor vplyvajúci na ich trhovú podiel. Je možné skonštatovať, že priame zastúpenia výrobcov sa zameriavajú na stratégiu rozvoja výrobku, ktorá je daná neustálymi inováciami produktov u súčasných zákazníkov. Zároveň u distribučných spoločností týchto výrobcov je stratégia odlišná – skôr zameraná na rozvoj trhu – uspieť so súčasnými výrobkami u maximálneho počtu zákazníkov. Treťou významnou skupinou boli špecializované spoločnosti budujúce si pozície a zázemie u zákazníka pôsobením aj na jeho sociálne cítenie a snažia sa odlišiť od konkurencie bližším a osobným prístupom.

### **3.1 Marketingový mix spoločností pôsobiach na CZ a SVK trhoch**

Až 21 spoločností uviedlo ako hlavnú aktivitu vybudovanie blízkeho osobného kontaktu, ako ďalšie boli uvádzané poskytovanie bezplatného poradenstva a zliav pre vybraných zákazníkov. Najpoužívanejšou formou bolo organizovanie seminárov, zákazníckych dní prípadne eventov pre stálych zákazníkov. Prakticky všetky spoločnosti uviedli posielanie prezentov a pozdravov pri sviatkoch. Informačné letáky, prípadne pravidelné e-mailom šírené newsletteri využíva iba 5 spoločností, z toho iba 2 newslettere sa týkajú enzýmov ako hlavnej témy. Sociálne siete na propagáciu enzýmových produktov zatiaľ neboli využité, aj keď distribučné spoločnosti uviedli, že ich zákazníci využívajú sociálne siete na propagovanie svojich výrobkov obsahujúcich enzýmy - jednalo sa výlučne o produkty zdravej výživy a pre športovcov.

### **3.2 Množstvo a miera úspešnosti projektov pri nových produktoch**

Počet projektov u dopytovaných projektov bol závislý od počtu cieľových zákazníkov. Priame zastúpenia výrobcov (5) s limitovaným počtom zákazníkov mali v priemere 8 projektov s mierou úspešnosti 64%, priemerný potenciál projektov bol 320 tis € na projekt. Distribučné spoločnosti (14) s vyšším počtom zákazníkov v rôznych segmentoch mali v priemere 42 projektov s mierou úspešnosti 30%, priemerný potenciál projektov bol 7.5 tis. €, špecializované spoločnosti pôsobiace iba v jednom príp. presne vyhradenom počte segmentov (6) pracovali priemerne na 24 projektoch s mierou úspešnosti 55%, priemerná hodnota projektu bola 13.5 tis €. Zaujímavým údajom je aj priemerný počet návštev zákazníka počas projektu – pri priamych zastúpeniach výrobcov je to 5.7 návštevy na jeden projekt. Pri distribučných spoločnostiach je to 4.2 návštevy na projekt, pri úzko špecializovaných spoločnostiach je to až 7.1 návštevy na projekt. U priamych zastúpení najčastejší dôvod neúspechu projektu bola nedostatočná efektívnosť produktu vo výrobe. U distribútorov najčastejším dôvodom boli aktivity konkurencie - lepšia ponuka – bez špecifikovania podrobností. U špecializovaných spoločností bola najčastejším dôvodom neúspechu cena produktu. Rozdelenie úspešnosti podľa typov zákazníkov odhalilo ďalšie korelácie medzi segmentáciou dodávateľov a úspešnosťou jednotlivých skupín. U medzinárodných spoločností s centrálnym nákupom pre región prípadne pre celú EU bolo najúspešnejšie priame zastúpenia výrobcov so 65 % úspešnosťou, zvyšných 35% projektov bolo úspešných u distribučných spoločností pôsobiach v cieľových krajinách, pri tomto type spoločností lokálne úzko špecializované spoločnosti neuspeli v žiadnom projekte. Pri medzinárodných spoločnostiach s lokálnym nákupom surovín bol už pomer úspešných projektov vo u distribútorov a špecializovaných spoločností vyrovnaný, získaných 47 resp. 42 % projektov a priame zastúpenia výrobcov sa zúčastňovali na výberovom konaní v podstatne menšej miere a s nižšou úspešnosťou, získali iba 11% projektov. Pri lokálnych spoločnostiach bol pomer získaných projektov výrazne v prospech špecializovaných

spoločností ktoré získali až 55% všetkých projektov, distribučné spoločnosti získali 42% projektov a iba 3% priame zastúpenia výrobcov.

Z uvedených údajov vyplývajú prekvapujúce údaje o nižšej úspešnosti projektov u distribučných spoločností a to či už kvôli nedostatočnej komunikácii so zákazníkmi, ako aj nižšie zameranie sa na projekt u zákazníka a samozrejme miera konkurencie v jednotlivých kategóriách zákazníkov. Obdobne je zrejmé, že úzko špecializované spoločnosti nedisponujú dostatkom personálu na pokrytie požiadaviek nadnárodných spoločností pri projektoch v porovnaní s konkurenciou.

#### 4. Záver

Je zrejmé, že na trhoch pôsobia tri kategórie subjektov s rozdielnym prístupom a rozdielnymi stratégiami oslošovania zákazníkov. Všetky subjekty si vzájomne konkurujú u zákazníkov s výraznými rozdielmi v úspešnosti pri projektoch. Výrazné rozdiely v úspešnosti aj v nastaveniach priorít a marketingových stratégií spoločností poukazujú na priestor na optimalizáciu stratégií u všetkých skupín subjektov. Aktuálne ako najúspešnejšie stratégie sa dajú hodnotiť distribučné spoločnosti, ktoré aj napriek nižšej úspešnosti u lokálnych spoločností dokázali získať klientov v každej kategórii zákazníkov a preukázali flexibilitu v ponúkaných službách, pričom ich stratégie sú výrazne expanzívne a plánujú ďalšie investície do kvalifikovaného personálu a bližšej spolupráce s R&D oddeleniami zákazníkov ako aj výrobcov enzýmov kvôli inovatívnym produktom vyrobeným podľa spätnej väzby od zákazníkov. Zároveň distribučné spoločnosti disponujú pokročilými systémami logistickej podpory a CRM, čo im v prípade regionálnej koordinácie aktivít na enzýmových trhoch dáva ďalšie podstatné logistické výhody. Prvé distribučné spoločnosti už aplikujú model projektov na regionálnej a subregionálnej báze a zároveň kombinujú výhody dodávok enzýmov od rôznych výrobcov jednému zákazníkovi, čím dokážu konkurovať aj najväčším enzýmovým producentom, čo sa prejavilo na úspešnosti pri nadnárodných spoločnostiach. Najväčšou výzvou a sčasti obmedzením pre všetky subjekty boli zhodne uvedené legislatívne podmienky uvádzania enzýmov na trhy EU, kde dochádza k postupnej regulácii trhu povinnými registráciami produktov, čo zníži konkurencieschopnosť niektorých subjektov, kvôli obmedzeniam.

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# GLOBALIZATION AND ITS IMPACTS ON CHEMICAL ENTERPRISES PERFORMANCE IN SLOVAKIA

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**Abstract.** Globalization and its positive and negative impacts on the development of chemical enterprises in Slovakia are fundamental guidelines of this paper. The main objective is to map the performance of selected chemical enterprises over the period of 2012 - 2015, identify opportunities and threats from the expansion of activities of chemical enterprises in global markets and to analyze the possibilities of increasing and maintaining the competitiveness of Slovak chemical enterprises. The starting points for the assessment of performance of the enterprises analyzed are financial statements: balance sheet, profit and loss statement and cash flow statements. The values of the economic results, profitability indicators, liquidity and indebtedness present contemporary position and performance of selected chemical companies in Slovakia. Within conducted research, we analyzed: progress of chemical enterprises in Slovakia, development tendency the economic results, opportunities and positive impacts of globalization in the environment of chemical enterprises, threats and negative impacts of globalization in the environment of chemical enterprises. Based on the findings we have made recommendations and conclusions which can be generalized and implemented in the management of chemical enterprises to maintain, respectively, to increase competitiveness. Additional analysis result is the comparison of the enterprises within the industry; assess the development of the sector, and the current environment in which analyzed enterprises operate. The main contribution of this paper is to view on the current situation of chemical enterprises in Slovakia within the current business environment and analysis of the positive and negative effects of globalization on their operating management.

**Keywords:** globalization, chemical enterprises, performance

**JEL Classification:** F62, F64, L26

## 1. Introduction

The chemical industry in Slovakia is a strategic branch also in the present economic situation. Same way as enterprises in other industries, however, chemical enterprises must adapt themselves to the global business environment, to changes of the internal and external impacts which can affect different way (positive and negative). Globalization is a phenomenon which affects the corporate decision making process, modify its strategies in the options of the financing of investments and innovations. One of key roles of enterprises is to maintain their competitiveness, adapting to the global markets, and thus successfully supply their products, goods and services to their customers. Basic principles of enterprise global strategy are discussed in works of G. Dubcová (Dubcová, 2014).

In an attempt to maintain the competitiveness of the chemical industry and its products it is necessary to monitor continually the situation influencing the development of this field, demand for chemical products, behaviour of the market and consumers, and also the action of competitive firms. Competitive advantage can be generated by retention of qualified employees and by their development; highly important role plays quality management of knowledge employees (Hyršlová et al., 2015). The field of chemistry and pharmacy in Slovakia gives employment to more than 30 000 workers and has a long tradition and perspective.

In consideration of necessity to quickly and adequately respond to changes brought by exposure on global markets, it is essential that chemical enterprises identify actual opportunities in a broader competitive environment. Globalization as shown in many studies and authors brings both positive and negative impacts. If chemical enterprises wish to succeed in Slovakia in the competition of European and international enterprises, they must realistically evaluate their opportunities. Slovak enterprises are mainly small and medium sized companies (Šubertová, 2015). Consideration of their opportunities and the analysis of possible threats is a prerequisite of successful and responsible management of chemical company (not just chemical).

## **2. Objectives of the paper**

The aim of this paper is to present the results of research activities focused on mapping out the current situation of the chemical industry in Slovakia, identification of opportunities arising from the existence of the global business environment and create an overview of the positive and negative impacts of globalization on the performance of chemical companies.

The partial objectives are:

- to analyze the inputs presenting the evolution and current status of chemical industry,
- to present the basic characteristics, which declares a state of the chemical industry in Slovakia,
- to identify the positive and negative impacts of globalization on chemical enterprises,
- to make an overview of recommendations allowing the improvement of the Slovak chemical enterprise.

## **3. Methods**

In the course of research the following scientific methods were used: analysis, synthesis, deduction, comparison, and monitoring. In accordance with the principles of scientific work the structure of the paper is following: introduction, methods, results, discussion, conclusion, and references. Based on the statistical data was processed information on the actual situation enterprises in the chemical industry in Slovakia. Based on the financial statements, we evaluated the performance of selected chemical companies. Consequently, we have created an overview of the positive and negative effects of globalization and formulated recommendations for chemical enterprises in Slovakia, which will allow to increase their competitiveness and to better adapt in a rapidly changing global environment.

## 4. Results

The chemical industry has been affected by a global economic crisis equally as other industrial branches. The main problems, which have arisen in the Slovak Republic, are not only the instability in oil markets, a link-up to the machine or automobile industry, the restructuring of the industry and acquisition of financial sources, but also a drop in the consumption of chemical products, the lower competitiveness of firms and their products, the problematic value of company outputs with respect to the strength of the euro and to the decline in currencies in neighboring countries and, at a final stage, the liquidation of “previous chemical giants” or smaller companies.

Most of the Slovak chemical companies are exhibited to a strong pressure in the main sales markets of the European Union. They try to face this phenomenon through restructuring. Although it is true that a lot of firms have already modern, up-to-date-level productions and achieve the potentially highest indicators of quality, namely in the field of economics, ecology and effective production, on the other hand, there exist plants which are relatively obsolete and require the high investment costs for their revitalization and the intensification of their own competition ability. According to the numerous studies the competition is a source of efficiency and it generates benefit for consumer (Zemanovičová, 2010). Enterprises should focus on monitoring and measurement of performance parameters of particular activities using the system of parameters (Majerčák & Majerčák, 2015). Opportunities and barriers of performance management are also discussed by S. Šagátová and others (Šagátová, 2014), (Pecinová et al., 2015).

### 4.1 Actual view on chemical industry enterprises in Slovakia

The fundamental characteristic which we monitored was the number of enterprises in the chemical industry - classification of economic entities by economic activities (SK NACE Rev. 2) as shown in Table 1.

Table 1: Number of chemical enterprises

	03/2015	06/2015	09/2015	12/2015	03/2016	06/2016
CD Manufacture of coke and refined petroleum products	22	20	20	21	22	24
CE Manufacture of chemicals and chemical products	412	415	413	425	437	459
CF Manufacture of basic pharmaceutical materials and pharmaceutical preparations	31	31	32	29	29	31
CG Manufacture of rubber and plastic products and other non-metallic mineral products	4 484	4 456	4 416	4 219	4 258	4 380
Total	4 949	4 922	4 881	4 694	4 746	4 894

Source: Statistical Office of the Slovak Republic, 2016

Since September 2015, it is possible to observe an upward trend, which is a result of the disappearing recession of chemical industry in Slovakia. We follow significant difference in the "Manufacture of rubber and plastic products and other non-metallic mineral products", which considering direct link to a well-functioning and growing automotive industry can be

expected in the near future increase of the number of enterprises, respectively subcontractors of new foreign investor (Jaguar Land Rover).

Another characteristic, which declare the importance and position of chemical industry is the number of employees in the industry. The average number of employed persons by category and special aggregates industries Classification of Economic Activities (NACE Rev. 2) is shown in Table 2.

Table 2: The average number of employed persons [number of persons]

	2012	2013	2014	2015
Industry (total)	495 185	491 461	499 439	508 714
CD Manufacture of coke and refined petroleum products	2 389	2 617	2 603	2 446
CE Manufacture of chemicals and chemical products	9 407	9 008	8 973	8 801
CF Manufacture of basic pharmaceutical materials and pharmaceutical preparations	2 300	2 170	2 152	2 195
CG Manufacture of rubber and plastic products and other non-metallic mineral products	47 854	45 349	45 923	48 184

Source: Statistical Office of the Slovak Republic, 2016

In 2012, the chemical industry employed about 12.51% of the employees of the total number employed in the industry. In 2013 it was 12.03% of the total number employed in the industry, which were apparently result of the recession in the industry. Similarly declining share was recorded in 2014 (11.94%). Strengthening of chemical enterprise can be observed in 2015, when the proportion of employees in the chemical industry to the total number of employees in industry increased to 12.11%.

Particular attractiveness of the sector also presents average nominal wages in the industry. The need an educated and high quality staff is the result of higher average wages in the chemical industry, compared with an average of Industry (total). The average nominal monthly wage in industry and by categories of special aggregates industrial sectors Classification of Economic Activities (NACE Rev. 2) is shown in Table 3.

Table 3: The average nominal monthly wage in industry [€]

	2012	2013	2014	2015
Industry (total)	857	888	935	965
CD Manufacture of coke and refined petroleum products	1 821	1 874	1 930	1 993
CE Manufacture of chemicals and chemical products	1 002	995	1 054	1 114
CF Manufacture of basic pharmaceutical materials and pharmaceutical preparations	1 110	1 152	1 082	1 096
CG Manufacture of rubber and plastic products and other non-metallic mineral products	850	877	928	958

Source: Statistical Office of the Slovak Republic, 2016

In all the above areas of the chemical industry is the apparent rise in of average wages especially since 2014.

## 4.2 Global environment and competitiveness of chemical industry

Global trends in world economy intervene into each sector of national economy (Látečková et al., 2009). The topic of globalization is discussed also by Milošovičová and Paškrtová (Milošovičová & Paškrtová, 2015). In the chemical company, the evaluation of the competitiveness needs to consider the amount of costs depending on a great number of factors. It is also necessary to consider the high demanding criteria for production equipment and technologies ensuring the mass and often continual productions. The high values of the long-time tangible and intangible assets are reflected in costs through the amortization of the above-indicated assets and costs for repair works and maintenance.

The next aspect is the aggression of chemicals and products requiring the higher requirements for costs in the area of transport, storage and manipulation in the form of specific vessels, transport modes, utilized packing materials, and specially trained employees. The problems of logistics are discussed by Kuperová and Zatrochová (Kuperová & Zatrochová, 2014). The level of these costs is influenced also by the necessity to observe security regulations and the regulations connected with health protection.

The necessity of competitiveness is justified also by a large use of chemical products and by a wide possibility of the substitution which gives rise to pressures encouraging the entrepreneurial subjects to consider thoroughly the position, quality, production and support of their products. This is observable mainly in the case of solvents, among which are many products of identical properties. Another possibility of the substitution is realizable by products from other industrial branches.

In order to maintain and intensify the competitiveness of chemical companies it is necessary to stabilize the qualified human potential, to support the quality of the chemical production, and to correctly and quickly react to changes ongoing in the competitive environment.

The successfulness of the revitalization of chemical productions depends on the amount of financial sources released for new technologies distinguishing themselves by a positive relation to the environment, by the economical exploitation of sources, and by the expansion of the sphere of chemical products and services (Kajanová, 2009).

## 4.3 Influences of globalization on chemical industry enterprises

During analyzing of the performance of enterprises of the chemical industry, we started from the sales of own products and goods in industry by category and special aggregates of industrial sectors Classification of Economic Activities (SK NACE Rev. 2).

Total revenues in the industry and sales of the chemical industry in the period 2012 - 2015 are shown in Table 4.

Table 4: Total revenues in the industry and sales of the chemical industry in the period 2012 - 2015 [1000 €]

	2012	2013	2014	2015
Industry (total)	82 250 954,5	82 247 465,3	82 236 224,4	87 090 666,1
CD Manufacture of coke and refined petroleum products	4 316 668,4	4 286 288,8	3 593 069,8	3 377 896,3
CE Manufacture of chemicals and chemical products	2 394 192,6	1 861 006,2	1 757 665,1	1 798 169,9

CF Manufacture of basic pharmaceutical materials and pharmaceutical preparations	326 796,8	231 689,8	193 187,9	201 351,2
CG Manufacture of rubber and plastic products and other non-metallic mineral products	5 401 575,7	5 489 168,4	5 770 315,6	6 095 612,2

Source: Statistical Office of the Slovak Republic, 2016

Within the evaluation, of the largest enterprises in the chemical and pharmaceutical industry, according to revenues for the last financial year, the top ten companies were: Slovnaft, Inc. Bratislava (1), Continental Matador Rubber, Ltd. Púchov (2), Continental Matador Truck Tires, Ltd. Púchov (3), Duslo, Inc. Sala (4), Plastic Omnium Auto Inergy Slovakia, Ltd. Lozorno (5), FORTISCHEM, Inc. Novaky (6), Magna Slovteca, Ltd. Nové Mesto nad Váhom (7), Johnson Controls Lučenec, Ltd. Lučenec (8), de Miclén, Inc. Levice (9), Enviral, Inc. Leopoldov (10).

Based on analysis of financial statements of listed companies, we examined their performance and success rate in the years 2012 - 2015 (Table 5).

Table 5: ROA, ROE [in %], profit [in €]

	ROA				ROE				PROFIT
	2015	2014	2013	2012	2015	2014	2013	2012	2015
(1)	8,3	-3,3	0,4	3,5	13,3	-5,7	0,6	5,4	187 005 000
(2)	22,2	21,2	23,8	20,1	26,2	26,0	31,4	32,7	170 448 000
(3)	29,8	29,6	26,3	24,5	43,3	45,7	44,7	42,4	89 329 000
(4)	8,2	2,2	1,3	3,8	12,3	3,5	2,0	6,2	39 069 000
(5)	18,1	15,6	19,1	-	42,6	36,5	46,6	43,4	11 973 042
(6)	4,9	0,8	-8,9	-	8,1	1,3	-20,2	-	3 710 797
(7)	29,1	18,8	11,6	5,6	48,4	59,5	95,2	319,5	15 926 778
(8)	-4,2	-15,5	-98,6	-	-12,2	98,3	103	-	-12 095 118
(9)	15,0	13,5	-0,6	-	48,4	104,2	106,5	-	9 602 567
(10)	15,5	7,7	1,1	2,8	26,7	15,4	2,7	7,5	11 097 776

Source: own elaboration according to [www.finstat.sk](http://www.finstat.sk), 2016

Globalization has contributed positively to an ongoing process of seeking, exploring, evaluating and selecting the ways of new sources of financing by encouraging and attracting additional international financing (Saxunová, 2015).

Among the positive effects of globalization, which influenced the performance of chemical companies in Slovakia can be classified: open up the market, the possibility of integration into world markets, development of international corporations, development of international trade, development of information and communication technologies; inflow of foreign capital, mobility of human capital, the availability of foreign education, the possibility of joint research projects.

Among the negative effects of globalization, which influenced the performance of chemical enterprises in Slovakia can be classified: changes in national laws, environmental problems (Plchová, 2012), raw material problems, energetical issues, safety problems. In conclusion it must be concluded that benefits of globalization greatly exceed negative aspects.

## 5. Conclusion

The topic of globalization has between scientists and experts, its supporters and opponents. The enthusiasm of the benefits which globalization has brought gradually began to fade and began to appear critical views revealing the negative. The aim of this paper was to stimulate discussion on globalization and its impact on enterprises of the chemical industry in Slovakia.

We analyzed the positive trends in the development of Slovak chemical enterprises. We proposed recommendations for enhancing and maintaining the competitiveness of chemical enterprises and described the current state of the chemical industry in Slovakia. Conclusion of this paper deals with positives and negatives of globalization, which could affect the situation and performance of Slovak chemical companies.

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## IMPLICATIONS OF THE “ONE BELT, ONE ROAD” INITIATIVE OF CHINA FOR THE WORLD ECONOMIC RELATIONS

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**Abstract.** The article focuses on the “One Belt, One Road” initiative of China as a new national economic development strategy and framework. The authors admit that the country’s economic growth has been one of the major drivers for the global markets and global economy as a whole for more than a decade. However, China’s economy growth rates are decreasing which has impact on most of modern trends of international economic relations. “One Belt, One Road” or the Belt and Road Initiative is a short name for the complex project and economic strategy otherwise known as “The Silk Road Economic Belt and the 21st-century Maritime Silk Road”. It aims at supporting China’s production capacities by simplifying exports logistics. The main research objectives include estimating the possible impact of the Belt and the Road Initiative on the China’s exports dynamics, determining the corresponding opportunities for the short and middle-term country’s economic development and thus discussing the potential role of the initiative as a new driver for the international economic relations and global economy growth. The authors also pay special attention to the Belt and Road Initiative as a trigger for extending economic integration of the countries of Central Asia, West Asia, the Middle East, and Europe to be included in the “Belt”. At the same time the article examines the scope of possible impact on other countries of the World through the expected changes in the global markets.

**Keywords:** trade road, the OBOR initiative, the Silk Road Economic Belt, the New Silk Road, Maritime Silk Road, China

**JEL Classification:** F02, F13, O19, O24

### 1. Introduction

Over the past several decades of rapid economic growth, China has become a superpower with the largest economy and the resources that could affect not only the situation in the region, but also throughout the world as a whole. Since the transition to a market economy in 1979 an average annual economy growth rate exceeded 9% and an average annual growth rate of foreign trade volumes exceeded 16% (Lin, 2015).

As a result, this decade showed the global community the landmarks of China becoming the world’s largest exporter in 2010, the world’s largest trading country in 2013 and finally the world’s largest economy – overtaking the US in GDP by purchasing power parity (PPP) – in 2014.

It is said that the key to the economic miracle has been a gradual dual-track approach to transition from the planned economy. The country didn't rush to privatize big enterprises in capital intensive industries and restricted foreign investments – providing necessary protection to the sectors not having comparative advantage (unlike most of the former Soviet Union economies and Eastern European countries). At the same time labour intensive sectors and industries with comparative advantages were opened up to internal and foreign investments and market competition. All in all, despite some common social and economic problems, the policy has led to stable and rapid economic growth (Deng & Dong, 2015).

After more than three decades of rapid growth, China has gained leadership among the BRICS countries ranked by GDP per capita as the figure is forecasted to exceed eight thousand USD or 15 thousand USD based on PPP in 2016 – with only Russia having better result of around 25 thousand USD by PPP. However, alongside with the shift from the low-income to the upper-middle income countries, China's economy growth rates are decreasing which has impact on most of modern trends of international economic relations.

Chinese officials and businessmen agree on the need for a new impulse to ensure further economic development. The two main trends of the ongoing reforms are both internal – limiting the role of the state interventions and allowing the market competition in pricing and resources allocation in most sectors and industries of the economy; and external – removing existing barriers for foreign investments and limitations on foreign trade.

In this regard the New Silk Road – an ambitious project of the Government of the People's Republic of China – is believed to have potential to give start to a new economic revolution. The first steps have already been taken to initiate the project including agreements with key partner countries, which indicates that the project is viable.

## **2. The scope of the “One Belt, One Road” initiative**

The Overland and Maritime Silk Road or most commonly referred to as “One Belt, One Road Initiative” (OBOR, or simply “Belt and Road Initiative”) are all short names for the complex project and economic strategy otherwise known as “The Silk Road Economic Belt and the 21st-century Maritime Silk Road”. It aims at supporting China's production capacities by simplifying exports logistics and at the same time transforming the country into the high income economy.

Xi Jinping formulated the major proposed initiatives comprising the OBOR in negotiations with Kazakhstan and with ASEAN countries in September – October 2013 (Gong, 2014). From the international perspective, the initiatives are aimed at establishing a regional cooperation framework across Asia to Europe and Africa (Fallon, 2015).

More details about the concept of the project have been revealed by the Foreign Minister of China. He referred to the OBOR as "One Belt – One Dream" which highlighted the importance of the initiative. It is ideologically roughly based on the Silk Road from Asia to Europe that has existed thousands of years ago. Thus it represents prosperity and the country's renaissance. The New Silk Road passes through the Central Asian countries, Russia, Belarus and Europe. The sea part will take place in the Persian Gulf, the Indian Ocean and the Mediterranean Sea (figure 1).

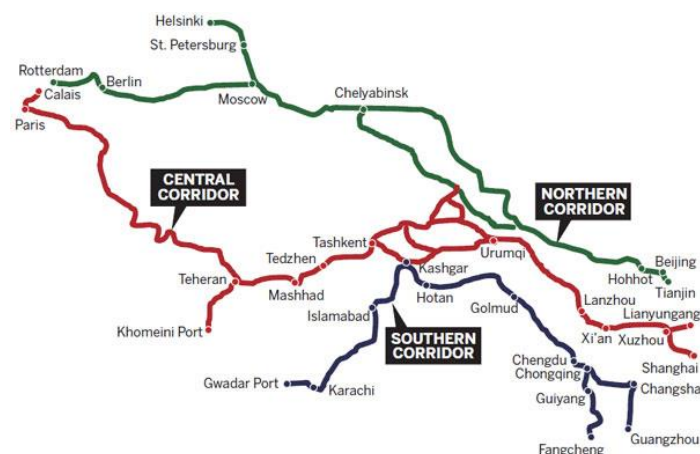
Figure 1: Proposed routes of the Silk Road Economic Belt and the 21st-century Maritime Silk Road



Source: Macau Daily Times

Land project is called the “Economic Zone of the New Silk Road”. Like its ancient ancestor it originates in Xi'an in China, crosses the whole Central Asia, Iran, Iraq, Syria, Turkey goes through the Bosphorus. The trade route then passes through the whole Europe and has its end in Venice, where it meets with a large-scale parallel Maritime Silk Road. The latter starts in the city of Fuzhou, passes through the largest cities of South China and trade centres of the South Asia crossing the entire Indian ocean to Africa and Middle East reaching Athens (Greece) and Venice (Italy). According to the plans, China will form a huge economic zone, which includes a variety of different infrastructure projects in many countries along the land and sea routes. In November 2014, China announced the creation of the Development Fund of the Silk Road in the amount of 40 billion dollars. The Fund will be used to finance projects in the infrastructure, natural resources, industrial cooperation, and other related sectors in the countries of Central and South Asia along the land and maritime "New Silk Road." Apart from that, China has proposed using the funds of the Asian Infrastructure Investment Bank – which has 57 participating countries – alongside with the BRICS Bank to support the OBOR initiative. It has been announced that an action plan for the next few years and roadmaps are being developed, with specific targets and deadlines for infrastructure objects construction (Zhang, 2016). From the very beginning the project suggests expandable framework. Thus it has been discussed that the railroad infrastructure can form three corridors within the Silk Road Economic Belt to maximize benefits for participating countries (figure 2).

Figure 2: The three corridors that can form the land part of the OBOR



Source: China Daily

The strategy of the OBOR involves the implementation of a number of important steps indicating the socio-economic objectives of the project:

1. Construction of transportation networks including construction of new and modernization of existing roads. China is using its expertise in innovative high-speed highways, railways, sea ports.
2. Road construction will inevitably cause the need for corresponding infrastructure including logistics centres and, consequently, new jobs.
3. The transport network stimulates the development of trade. Silk Road will connect Eurasian countries with each other, developing new supply chains.
4. The most important condition for the development of the project is political stability in the region, public safety guarantee and general agreement between the participating countries.
5. Social and cultural exchanges between all countries of the Eurasian region, the presence of common goals and values can bring together such different cultures of east and west.

It should be noted that the Chinese free trade zones of Shanghai, Tianjin, Guangdong, Fujian and future ones are considered a separate economic development initiative, in fact these projects are deeply integrated into the OBOR initiative. The OBOR initiative is supposed to be based on internal liberalization of investments which in turn starts from the pilot projects in the free trade zones.

The main advantages of China that will help to implement the OBOR include capacities and expertise in infrastructure construction, capital surplus, background image of the country that has driven the global economy with an economic miracle of the booming development in the recent decades.

### **3. Forecasted impacts on the global economy**

As it has been mentioned above, China is the world's largest trading country and the world's largest economy based on PPP. So it's no wonder China has corresponding influence on global economy and international affairs.

The concept of the OBOR combines the most important elements of the today's global economy opportunities:

- Trade relations development;
- International investment flows expansion;
- Unified infrastructure along the transportation routes;
- Strong links to the service sector;
- International social and cultural interaction.

Today, China is the world's leading supplier of steel, machinery, electrical and high-tech equipment and the largest supplier of consumer goods to the world market. As wages in China are constantly rising, the country is losing its comparative advantages and has to bring down the other costs of production and delivery of exported goods. Supported by the neighboring countries and remote trade counterparts, the OBOR is very likely to remove existing limitations on China's exports logistics (Blanco Pitlo & Karambelkar, 2015). It will be a catalyst for profound changes in the region and increase the flow of goods from China. According to experts' estimates due to the OBOR, China can double the trade turnover with the countries

along the OBOR in the next 10 years. Thus the overall trade turnover can increase from the current level of about 24.6 trillion yuans a year, or \$3.7 trillion USD, up to \$5 trillion USD.

In not-so-distant future the country will have to face the shift from net exporter to net importer and move on from exporting goods to exporting capital as it already has capital surplus in a form of national savings of around 50% of the GDP. Production in labour intensive industries will have to be moved to other countries lower wage level. In this regard the fact that both the proposed Maritime Silk Road and capital investment flows of China has reached Africa is of crucial importance (Hou, 2015).

The OBOR will help in integrating more countries into the world economy by redirecting exports and investment flows. Investments of China in South Asian, African and East European countries having significant potential of supporting lower income economies which have an opportunity to get a piece of the pie from the international relocation of labour intensive industries (Zhao & Tao, 2015).

At the same time the OBOR signifies a new stage of globalization that is sometimes referred to as “the end of hyperglobalization”. In the age of pragmatic approach to international economic relations globalization is driven by regional leaders uniting neighbouring countries in order to exploit their common economic potential and pursue common goals.

Economic relations between China and Central Asian countries have become so close that China is the most significant trading partner, the main investor and is becoming the major political advisor in the region. In the future mutually beneficial trade and economic ties between the countries will only increase. So not only China, but also other countries of the region are interested in implementing the OBOR.

The OBOR has significant potential to act as a trigger for extending economic integration of the countries of Central Asia, West Asia, the Middle East, and Europe to be included in the “Belt”. It should also be noted that the OBOR aims at strengthening the global role of China in the world from both economic and political points of view (Fasslabend, 2015). In this regard business experts indicate several major risks associated with ambitions arising from the project (Zhang et al., 2015).

Firstly, although OBOR is not supposed to be an economic union or a classic economic integration, the project is opposed to the Eurasian Economic Union on the one hand and Trans-Pacific Partnership on the other hand as the two leading integration initiatives involving the countries of the region (Makarov & Sokolova, 2016). It is important to mention that neither the EEU, initiated and supported mainly by Russia, nor the Trans-Pacific Partnership, promoted by the US, have China involved. The Central Asian region has always been at the intersection of the spheres of influence of China, Russia and the US. Competition, rapprochement and alliance between the countries is a very complicated question. The situation reflects the intentions of the countries to maintain their strategic advantages in the Central Asia and the Asia-Pacific regions – and to promote geoeconomic interests. In this regard both the US and Russia may be opposed to the OBOR initiative (Kaczmarek, 2016).

Another concern lies in environmental field (Li et al., 2015). Intensive construction can exacerbate the water crisis in central Asia, deteriorate the vulnerable environment and lead to energy consumption problems. At the same time Chinese officials claim that the construction projects provide for careful planning and ecological research. Thus it may be admitted that the OBOR project can be developed in an environmentally sustainable manner but the timing of

construction may slightly increase due to the attention of the local communities and environmental organizations.

#### 4. Conclusion

The OBOR initiative can be considered as the largest project we can witness. The New Silk Road Economic Belt and 21st Century Maritime Silk Road will potentially involve a population of over 4 billion people living in participating countries, and one-third of the world's GDP.

Although having received general support from the leading participants, the project is still in its early initial stages. It doesn't provide creation of the formal integration union but rather suggest economic framework as more flexible approach.

It can be assumed that the project is mutually beneficial for its participants. However, the leading role of China suggests that the country's interests prevail. The initiative has potential to boost trade, aid in strengthening positions in the overseas markets and obtained foreign production capacities.

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## WORLD EXPERIENCE OF OPERATIONAL MANAGEMENT IN CONSTRUCTION

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**Abstract.** Operational management in construction includes: current planning, quantitative and qualitative control and accounting of performed work, solution of logistics problems, work mechanization and transport maintenance, rational use activities of all available human and logistical resources, etc. The solution of these questions should be directed at achieving the main goal of operational management - implementation of construction organization projects and work production. It is proved that improvement of operational management system in the construction allows to shorten the duration of work in 1,2-1,4 times, complexity on 20-22%, construction cost - 15%. Economic and mathematical models help to identify the most important connections of construction sites, to describe them and to estimate the parameters of production, so in the management of construction production are widespread. Development and adoption of effective organizational and technological solutions to improve the intensity of road repairs advisable based on monitoring of construction process for the previous period of time using a production function that takes into account the performance of asphalt concrete plants, possibility of freight transport complex, paver performance level.

**Keywords:** operational management, operational management system, organizational and technological solutions, construction

**JEL Classification:** L9, L90, L91

### 1. Introduction

Economic effect gained from putting an object of construction into operation significantly depends on in what terms, what quality it was constructed, with what costs of various resources and what was the level of resource use. All this is largely determined by the level of work organization both at the stage of design and operational management of construction step. Economic indicators of construction can be raised by rhythmical performance of works. Increase in coefficient of rhythm by 1% allows to increase capital productivity for 0,317%, to reduce the estimated cost of an object by 0,35%. (dos Santos et al, 2002, Wang et al., 2010, Edwards & Bowen, 1998).

Researches demonstrate that up to 90% of teams downtime during construction is due to imperfections of operational management in construction industry. Leaders at all levels of production much time spend on operational tasks instead of forward-looking tasks, for which they don't have enough time. It is necessary to predetermine the reasons and sources of



deviations and in advance select the appropriate options for modeling design mechanisms and further permission from available resources, building criteria preferences. Operational management of existing methods does not take into account many of the technological, organizational and economic factors of work production. In limited both financial and material resources conditions relevance of this problem increases. (Smith et al., 2004, Al Nasser et al., 2016, Tan & Wisner, 2003, Anikeeff & Sriram, 2008).

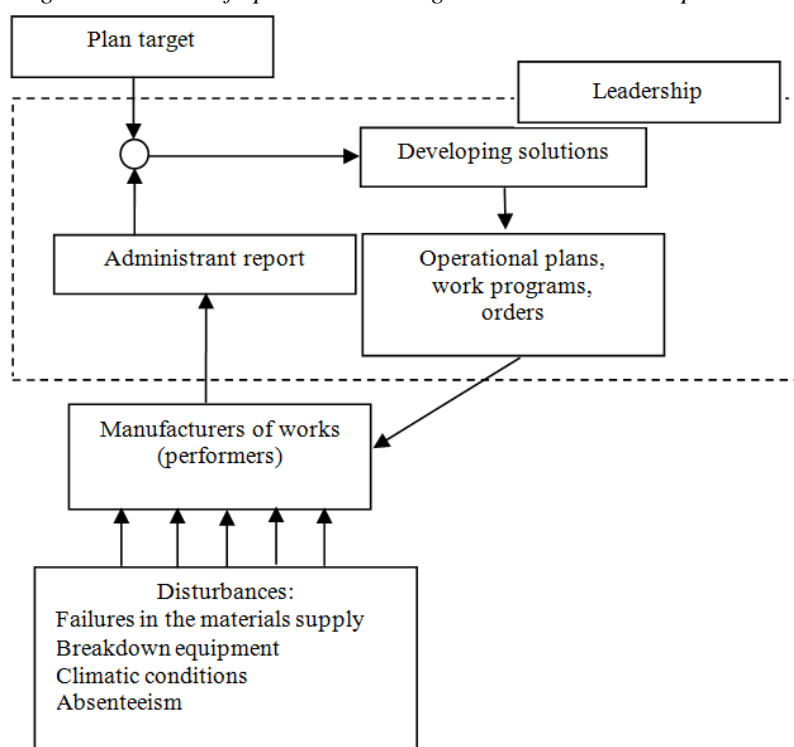
## 1.1 Operational management in construction

Operational management in construction includes: current (operational) planning, quantitative and qualitative control and accounting of performed works, solution of current logistics problems and maintenance work in mechanization and transport, activities for rational use of all available human and logistical resources, etc. The solution of all these questions shall be directed to achievement of a main goal of operational management - implementation of construction organization projects (COP) and work production projects (WPP).

It is proved that the improvement of operational management system in construction allows you to shorten the duration of work in 1,2-1,4 times, complexity of 20-22%, cost of construction - 15%. (Brekman, 1992).

If there are problems in the implementation of the project organizational solutions, its task is to eliminate them and to adjust to the changing conditions of production (Figure 1).

*Figure 1: Scheme of operational management in construction production*



Operational management is a systematic development and implementation of a set of daily activities to ensure:

- operational planning for short periods of time, taking into account real evolving production environment;
- systematic quantitative and qualitative control of production operations;

- interaction control of all parts of building production;
- elimination of various organizational problems.

In real working conditions the mode of production set by COP and WPP and interaction of links of construction process are quite often broken. This result from the fact that in case of construction organization project development the indicators characterizing construction process conditionally are accepted deterministic. In fact, they have a probabilistic nature.

In case of changes in production conditions which aren't provided in construction organization project it is necessary to adjust quickly project decisions to provide the termination of a construction in the set terms with the smallest costs. (Battikha, 2003, Liu & Mohamed, 2012, Hassan & Gruber, 2008, Karpushko et al., 2016).

### 1.1.1 Production functions

Efficiency of construction production is considerably determined by quality accepted project and organizational technology solutions, management and construction ensuring. Justification decisions were regarded as the major management function, and at the end of the 20th century independent scientific direction was created - decisions justification.

Numerous works of domestic and foreign scientists were devoted to development of the theory of decision making: to criteria for evaluation of their efficiency, quality evaluation of decisions with many criteria (the so-called theory of multicriteria assessment of alternatives), to methods of probabilistic planning, etc.. (Popkova et al., 2016, Prasad & Babbar, 2000, Hu et al., 2016, Yang & Regan, 2013).

One of the most effective means to inform decisions is economic-mathematical modeling of systems and processes in construction.

Economic and mathematical models help to identify the most important connections of construction sites, to describe them and to estimate the parameters of production, so in the management of construction production they are widespread. Types of production functions used in economic theory, mathematical analysis, were developed a lot and they can be divided into several classes, each having its own characteristics and are applied in specific cases. (Kim, et al., 2013, Sprague, 2007, Taylor & Jaselskis, 2010).

In general, production function (PF) - is a quantitative relationship between the resource cost, technology level, etc., i.e. volumes and factors of production per unit of time used in the analysis of economic and mathematical theory. (Karpushko & Aleksikov, 2012).

General view of the production function:

$$Y = f(x_1, x_2, \dots, x_n) \quad (1)$$

where  $Y$  - production volume;  $x_i$  - factors of production.

For a given amount of product it is necessary to determine the optimum combination of resources, which leads to the production function, which determines the effect of each of the resources on the production result.

There is a two-factor production function  $Y = f(K, L)$ , which is widely used in the production theory, where  $Y$  - maximum possible volume of the issue,  $L$  - amount of labor and capital  $K$  resources, in terms of use (release) per unit time. Easy of graphical display allows the PF to show this type of relationship between factors. For example, weak relationship

between the volume of output and specific consumption of materials and such factor as production areas, this cannot be addressed without capital.

Most common are following production functions:

Function with fixed elasticity of replacement can be used for modeling of systems of any level and is applied, when there is no information on how to interchange production factors and generally has the following appearance:

$$Y = A \cdot (b \cdot K^{-p} + (1-b) \cdot L^{-p})^{-\gamma/p}, \quad \sigma = \frac{1}{1+p}, \quad (2)$$

where  $A$  - scale factor, which characterizes the influence of factors not accounted in the model,  $A > 0$ ;  $\gamma$  - exponent equation uniformity,  $\gamma > 0$ ;  $b$  - weight coefficient,  $0 < b < 1$ ;  $p$  - elasticity of substitution factors,  $p > -1$ ;  $\sigma$  - elasticity of substitution function.

If  $p = 0$  you get a production function of Cobb-Douglas type, which can be used in the evaluation of the factors due to which there was an increase in the production:

$$Y = AK^\gamma b L^{(1-b)/\gamma} \quad (3)$$

If  $p = \infty$  then limit will turn out a production function with the fixed proportions of factors which received the name - Leontyev's function, and it characterizes technology with not interchangeable production factors:

$$Y = A \min\left(\frac{K}{K_0}, \frac{L}{L_0}\right)^\gamma \quad (4)$$

If  $p = -1$  you get a production function with the linear elasticity of factors substitution:

$$Y = A(bK + (1-b)L)^\gamma \quad (5)$$

or linear production function when  $\gamma = 1$ , which is widely used in road sector, as in most cases the result depends on relativity operation of large number of different technologies:

$$Y = \alpha K + \beta L \quad (6)$$

where  $\alpha$  and  $\beta$  - weight coefficients of production factors.

For example, road construction works are dependent on a number of factors, with various degrees of intensity and impact on one or the other process. Therefore, the form used in the road sector production function or model cannot be determined in advance. Let's analyze the following series of functions.

E. N. Garmanov on the data basis results of 49 road construction companies analyzed indicators characterizing the state of labor productivity on a number of factors when using a linear function of the following form:

$$y = a_0 + a_1 \cdot x_1 + a_2 \cdot x_2 + \dots + a_n \cdot x_n \quad (7)$$

where  $y, x_1, x_2, \dots, x_n$  - variables – constants;  $a_0, a_1, a_2, \dots, a_n$  - function parameters, numerical values of which are determined based on statistical data. (Borovik, 1996).

Application of multivariate regression analysis method allowed E. N. Garmanov to study the dependence of capital productivity index in road construction from 46 factors and highlight the most significant. (Chinowsky & Meredith, 2000).

E. M. Zeiger using factor analysis suggested a variant identification and assessment of reserves of increase of road-construction industry efficiency. To identify existing reserves and their quantitative assessment he made an attempt to establish a quantitative relationship between indicators of production efficiency and their determinants using regression analysis. E. M. Zeiger used for its calculations a linear function of the following form:

$$x_i = \sum_{r=1}^n l_{ir} \cdot f_r + e_i, \quad i = 1, 2, \dots, n, \quad (8)$$

where  $l_{ir}$  - r-th load factor on the general i-th load variable or variable i-th on r-th common factor;  $f_r$  - r-th common factor; n - number of factors;  $e_i$  - specific factors that are the result of measurement errors or inaccuracies model.

V. S. Borovik for evaluating the effectiveness of road-building production model used characterizing the dependence of work volume on the level of consumption of the most important industrial resources. (Borovik, 1990). The proposed model is based on the reporting of enterprise statistical data:

$$Y = C_0 \cdot \prod_{i=1}^n X_i^{\alpha_i} \quad (9)$$

where  $Y$  - volume of work in the natural-material value or form;  $C_0$  - coefficient of neutral efficiency in a cumulative form considering influence of the factors which didn't find reflection in model;  $X_i$  - natural resources, real or value terms;  $\alpha_i$  - indicator of intensity of resources use, evaluate the contribution of  $X_i$  into  $Y$ . Function (9), as opposed to the other, it is more flexible mathematical tool, allowing enough to accurately describe a complex manufacturing process and its dependence on the three or four factors of production. (Marasin et al., 2007, Coates et al., 2004 and Yung, 2015).

Researches of the authors argue that the development and adoption of effective organizational and technological solutions to improve the intensity of road repairs ( $I_i^F$ ), it is advisable based on the monitoring of the construction process for the previous period with the help of the PD form:

$$I_i^F = C_0 \cdot P_{\Pi,i}^{\alpha_1} \cdot W_{T,i}^{\alpha_2} \cdot P_{Y,i}^{\alpha_3} \quad (10)$$

where  $P_{\Pi,i}$  - asphalt concrete plant productivity;  $W_{T,i}$  - possibility of freight transport sector;  $P_{Y,i}$  - laying performance management;  $C_0$  - coefficient reflecting the impact on the intensity of production factors unaccounted works;  $\alpha_1, \alpha_2, \alpha_3$  - factors of influence on the intensity of the implementation of road repair works of various technological factors.

Production can be increased by:

- increase in productivity of asphalt concrete plant by the number of mixers, power or operating mode;
- increase in vehicles capacity, their number, which will affect the possibility of freight transport link or change the route of mixture transportation;
- increase in intensity of works at the facility by increasing the productivity of the laying unit.

After computer modeling of more than 150 work situations imitating real conditions, complex assessment of engineering procedures on intensity of asphalt concrete covering was executed. Performance of works varied from 68 to 1537 m / shift. During this time distance of carriage viewed from 5 to 70 km. Values of use coefficients ( $K_i$ ) were as follows: for asphalt plants - from 0.24 to 1.01 ( $\bar{K}_n = 0,71$ ,  $Cv = 0.25$ ), road transport - from 0.3 to 1.0 ( $\bar{K}_n = 0,93$ ,  $Cv = 0.09$ ), asphalt link - from 0.08 to 1.0 ( $\bar{K}_n = 0,48$ ,  $Cv = 0.56$ ).

Under the conditions of a sufficient number of vehicles dependence of work intensity ( $I$ ) on asphalt concrete plant productivity ( $P_n$ ), transport ( $W_t$ ) and laying units ( $P_y$ ) is as follows:

$$I = 0,271 \cdot P_n^{0,385} W_t^{0,051} P_y^{0,565}, \text{ t/shift} \quad (11)$$

Correlation coefficient - 0.98, standard deviation 0.107.

As a result, it was established on replaceable amount of works the main impact is exerted by productivity of an asphalt pavement link (coefficient of influence 0,565). Because of high efficiency of the asphalt concrete plants their influence is 1,4 times less (coefficient of influence 0,385). Influence of motor transport insignificant (0,051).

At shortage of transport, its influence on intensity of works (coefficient of influence 0,998) and productivity of all mechanized link on laying of asphalt concrete mix increases:

$$I = 0,906 \cdot P_n^{0,013} W_t^{0,998} P_y^{0,016}, \text{ t/shift} \quad (12)$$

Correlation coefficient - 0,98, standard deviation 0,028.

In case of decision making on operational management in construction it is important to have sufficient amount of production process monitoring basic data. From reliability and number of members of statistical data in chronological order depends reliability of the administrative decisions taken on the basis of the production function (10).

## 2. Conclusion

The proposed model of operational management of road repair allows, based on monitoring of the construction process, to improve the validity of organizational and technological solutions to correct the actual implementation schedule to complete construction in a timely manner within the allocated resources.

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## ESTIMATED ECONOMIC IMPACT OF THE IMPLEMENTATION OF THE DCFTA ON THE FOREIGN TRADE OF SLOVAKIA AND THE UKRAINE

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**Abstract.** The EU and the Ukraine applied their Deep and Comprehensive Free Trade Agreement (DCFTA) as of 1 January 2016. The DCFTA reimbursed the obsolete Partnership and Cooperation Agreement and contains a comprehensive agenda for bilateral cooperation spreading across all fields of common interest. This agreement includes that both sides, the EU and the Ukraine, will mutually open their markets for goods and services based on predictable and necessary trade rules and values of the EU. These rules of the DCFTA provide the Ukraine with an ambitious agenda for political and economic reforms and the equality of standards and rules of the Ukraine with the EU in areas such as competition, public procurement and intellectual property rights. The Ukrainian market for Slovakia and mutual foreign trade is very important from the point of view of the size of the market of Ukraine, geographical and linguistic proximity. Foreign trade between the Ukraine and Slovakia during the period of 2008-2015 has been gradually decreasing. Results for the first half of 2016 reflect the implementation of the DCFTA: the DCFTA improved the business and investment climate in the Ukraine through the removal of customs tariffs, tariff burdens and administrative burdens. For several years now, the Ukraine has been trying to draw nearer to those EU member states that will attract new investment, thus creating new jobs, increasing purchasing power and living standards in the Ukraine, thereby strengthening foreign trade between the Ukraine and Slovakia. The main aim of this paper is to estimate the economic impact of the implementation of the DCFTA on foreign trade between Slovakia and the Ukraine.

**Keywords:** foreign trade, Deep and Comprehensive Free Trade Agreement, the Ukraine, Slovakia

**JEL Classification:** F10, F15, F17, F31, O10

### 1. Introduction

Trade relations between Slovakia and the Ukraine are an important factor in the economic growth of the Ukraine. Over the last years, bilateral trade between the European Union and the Ukraine has been growing very slowly; however, despite this development, the Ukraine decided to access to European market in 2014 by signing the Association Agreement. After the 2014, the European Union (EU) has progressively become the Ukraine's main trading partner, with



today's share approaching one half of the Ukraine's total annual foreign trade and it 40%. This trend is set to continue with the recent conclusion of the Association Agreement, which includes the DCFTA between the EU and the Ukraine. The Agreement, which has created a new and closer political and economic relationship between the EU and the Ukraine, has been in effect as of 1 January 2016.

## **2. Association Agreement and Deep and Comprehensive Free Trade Area**

The EU and the Ukraine signed the Association Agreement with its Deep and Comprehensive Free Trade Area on 27 June 2014. The Association Agreement with its DCFTA completely passed through the ratification process in all 28 member states. The general conditions of political and economic cooperation have been in use since November 2014 and trade relations are resolved in the DCFTA, which has been in effect as of 1 January 2016. (Trade.ec.europa.eu, 2016) The DCFTA is part of the Association Agreement (AA) concluded between the EU and the Ukraine and is one of the EU's most choose bilateral agreements. (Drienikova, K., & Zubalova, L., 2013)

The DCFTA gave Ukraine a structure for modernising its trade relations and economic development by opening markets through the gradual cancellation of customs tariffs and quotas, and by a sweeping harmonisation of laws, norms and regulations in different trade cognate sectors, making the conditions for aligning key sectors of the Ukrainian economy to EU standards. The DCFTA consists of 15 chapters, 14 annexes and three protocols. (Sepashvili, E., 2015) The DCFTA is based on the Plus FTA (Free Trade Area Plus) formula, which includes not only the liberalisation of mutual trade with goods, but also the liberalisation of trade in services, foreign direct investment and harmonising public procurement processes. The DCFTA is composed of 150 parts including a wide range of problems requiring internal reforms in the Ukraine. (Kosir, I, 2008)

The Association Agreement covers a wide range of areas and it also affects the Ukrainian economy. This document is very important because it deals with a wide range of areas from energy issues to the area of free trade. The EU was the first to carry out the provisions of this agreement and it began to unilaterally license the rates of customs duties in 2014. (Duleba, 2011) On the contrary, the Ukraine started implementing reform steps only after the DCFTA had come into force on 1 January 2016. These steps represent the gradual adoption of the necessary reform steps including the elimination of most of their tariffs on products originating in the EU as well as the reduction of non-tariff barriers and the harmonisation of its legislation with the EU in trade-related areas. (4 liberty.eu, 2016)

### **2.1 Development of mutual trade between Slovakia and the Ukraine**

Slovak-Ukrainian foreign trade relations are rooted in close historical trading relationships. Slovakia has adopted a very positive attitude to the Ukrainian transformation. This aspect of the development of relations is considered as a powerful factor of further strengthening of successful business cooperation between the two countries. (Prismua, 2016) The penetration of Slovak companies into the Ukrainian market is now important, given the size of the Ukrainian market, its relative unsaturation, geographical and linguistic proximity, with respect to the future consolidation of the market, the prospect of European integration of the Ukraine and last but not least in view of the gradual occupation of the Ukrainian market by domestic and foreign companies. (Samokhvalov, V., 2015)

The Ukraine is a market for Slovak companies offering considerable potential; taking full advantage depends on the realisation of economic reforms by the Ukrainian government, the pace of standardisation of the business and investment environment of the Ukraine and the process of European integration. The Ukraine is an important and strategic partner for Slovakia as well as from the perspective of a supplier of raw materials for further processing in Slovakia. (Ukraine-analytica,2015) Since 2014, the eastern part of the Ukraine has been experiencing the ongoing Russian-Ukrainian conflict. During this conflict, when Russia developed pressure on the Ukraine in issues of energy supplies, Slovakia has become a key partner of the EU in the Ukraine in maintaining the supply of natural gas, and thus, has been supporting the Ukraine in its path to energy independence. (Kastakova, et.al, 2014) Table 1 shows the mutual foreign trade between Slovakia and the Ukraine from 2008 to 2015.

*Table 1: Mutual foreign trade between Slovakia and the Ukraine in millions of euros*

	2008	2009	2010	2011	2012	2013	2014	2015
Import	504.7	252.3	446.7	607.8	593.3	622.5	555.7	469.1
Export	665.9	291.8	368.9	472.0	442.1	479.0	325.9	312.4
Turnover	1170.6	544.0	815.6	1079.8	1035.4	1101.5	881.6	781.5
Balance	161.2	39.5	-77.8	-135.8	-151.2	-143.5	-229.8	-166.7

*Source: MFA SR*

Sales growth of foreign trade with an annual increase of 25-30% was recorded in the years between gaining independence and 2008. In 2008, Slovakia and the Ukraine recorded the first signs of the impact of the economic and financial crisis, which was not fully reflected in 2009. In 2010, bilateral foreign trade with the Ukraine was reportedly revived, which achieved a turnover of EUR 815.6 million. It can be said that for 2011 the two countries' foreign trade turnover significantly started growing again. A turnover of EUR 1,079.8 million was recorded in 2011. Import volume accounted for EUR 607.8 million and export amounted to EUR 472.0 million. (Ignjatijevic, S & Ciric, M & Caric, M , 2013)

In 2012, however, there was a slight decrease to EUR 1,035.4 million. Import accounted for EUR 593.3 million and export amounted to EUR 442.1 million. The year 2013 was, however, once again positive with a turnover of EUR 1,108 million. Imports from the Ukraine amounted to EUR 628.7 million and exports to the Ukraine amounted to EUR 479.3 million. The period of 2014 of the mutual trade exchange was marked by the Russian-Ukrainian conflict and fell to a level of EUR 881.6 million. In 2015, the mutual foreign trade turnover amounted to EUR 781.5 million. (Balaz, P. & Hamara, A., & Sopkova, G, 2015)

### **2.1.1 Expected economic impact of the DCFTA on foreign trade between Slovakia and the Ukraine**

As a consequence of these changes, the foreign political agenda between the Ukraine and the EU is influenced by the foreign trade relations between Slovakia and the Ukraine. These relations in particular are influenced by the ongoing conflict between Ukrainians and Russians in eastern Ukraine. Based on this situation, the Ukrainian trade relations with Slovakia are not developing according to plan. The result of the integration process of the Ukraine into the EU is the perspective of mutual foreign trade relations with the Ukraine; however, at the moment, the conflict situation in the Ukraine is very negative. (Vojtech, F., 2013)

The anticipated implications of the implementation of the DCFTA would improve the business and investment environment for the Ukraine in particular through the abolition of custom burdens and tariffs and the reduction of administrative burdens. On the basis of this

assumption, the Ukraine has the opportunity to come closer to the level of the member countries of the EU, attracting new investments, which is then related to the creation of new jobs, thereby increasing the purchasing power of the population and their standard of living. (Dragan, G., 2015) According to the survey conducted by the IER research organisation (Kyiv) in 2015, Ukrainian businesses were very positive about the implementation of the DCFTA. Research showed that 30% of respondents expected the volume of mutual trade between Slovakia and the Ukraine to increase – this already in the first year, specifically in 2016 – and the other 70% of respondents stated that mutual foreign trade between the two countries would increase over a period of five years. According to them, this increase in the volume of mutual trade should flow from the implementation of the new standards in the manufacture of products and the profit from lower tariffs and simpler procedures. (Spiliopoulos, O., 2014)

Economic-political development is also very important in this process; it is accompanied by reforms in economic areas, such as public procurement, competitiveness, protection of intellectual property rights, state aid, etc., (Kittova, Z. & Balaz, P. et. al., 2014). These reforms assume to help the Ukraine create a much more transparent and internationally understandable legal environment that will make the Ukraine a much more attractive place for domestic and foreign investors, and create momentum for its economic growth. For the Ukraine this means possibilities for the development of foreign trade and new opportunities in business. The expected result is to increase the mutual trade between the Ukraine and the EU and also with Slovakia. (Skorobogatova, N., 2016) According to Slovak and Ukrainian professional and business communities, Ukrainian industries that are export-oriented will benefit from the DCFTA in the form of high import demand for Ukrainian products in Slovakia, unburdened by customs. This will become a new source of revenue for the Ukrainian national economy. (Balaz, P. & Hamara, A., & Sopkova, G., 2015). So such better access to the Slovak market will be an advantage for the export-oriented industries, which face strict limits on foreign markets. An expert forecast for the FTA indicated that the number of sectors of the Ukrainian economy, whose production within the DCFTA with the EU has increased, is almost the same as the number of sectors where production would fall. (Grancay, M. & Grancay, N & Vveinhardt, J, 2016) Namely, the creation of the DCFTA will have a positive effect on agriculture, fisheries, forestry, textile and leather industries and many service sectors; a less positive effect will be felt by the metallurgical industry, engineering, transport and the coal chemical industry due to the reallocation of factors of production and through reducing costs in the food industry. (Brincikova, Z. & Darmo, L, 2014)

The Ukraine would have to ensure the asymmetric reduction in the context of import duties. Due to the low tariffs for agricultural products and symmetrical liberalisation of import duties, the overall result of the DCFTA is about a 17.3 percent increase in living standards and a 5.1 percent increase in real GDP over the medium term. (Bebiakova, D. & Zatko, M., 2015) Regarding the Ukrainian economy and the living standards of Ukrainian citizens, the DCFTA will bring benefits in all respects of economic development. The agreement's most important contribution will reduce export duties (symmetric or asymmetric), but also a reduction in non-tariff barriers to trade in goods and lower regulatory pressure in the services trade environment. The main assumption for the optimal acceptance of the Ukraine's DCFTA is the correct set-up and length of the transition period for trade with sensitive commodities, as well as to carry out the necessary reforms. (SFPA.sk, 2016) Judging on the basis of its implementation, the DCFTA seems to have a positive effect for the Ukraine, and thus, also on the foreign trade between Slovakia and the Ukraine, which has great potential for mutual development. (European Commission, 2016)

These conditions have an influence on increasing the standard of living through the improvement of products, production processes, increased controls, more effective use of resources and creation of duty-free access to the EU market; however, there are also perceived negative aspects of the implementation of the DCFTA influencing the developments in the Ukraine and, thus, also the development of foreign trade between Slovakia and the Ukraine. (Smith, NR., 2016) One of the negative sides of the DCFTA is conforming the legislative environment to international standards. Based on these adjustments, it is necessary to carry out administrative changes in the Ukraine, which will be focused on active job market policy; this will arise after increasing competition once the labour market opens. (MFA, 2016)

## 2.2 Intra-industry trade between Slovakia and the Ukraine

Intra-industry trade (IIT) examines and characterises business sector trade characteristics. On this basis, a number of countries are implementing a large part of their international trade within the same industry. The term intra-industry trade is expressed based on the Grubel-Lloyd index (GL), which is calculated as follows:

$$GL_k^{ij} = 1 - \frac{|X_k^{ij} - M_k^{ij}|}{X_k^{ij} + M_k^{ij}} \quad (1)$$

Where:

- $X_k^{ij}$  – export of commodities k to country i and to country j
- $M_k^{ij}$  – import of commodities k of country j to country i
- $<0;1>$  - interval of the results
- $GL = 0$  – the country is a net importer or exporter, i.e. intra-industry trade is not present,
- $GL = 1$  – intra-industry trade exists between countries. (Soo, K.T, 2016)

According to the IIT index, the level of ITT between Slovakia and the Ukraine can be determined. Through the use of relevant resources such as UNCTAD and the Ministry of Foreign Affairs and the nomenclature of the SITC commodity structure classification, the intensity of intra-industry trade is calculated. A detailed overview of intra-industry trade obtained through the IIT index between Slovakia and the Ukraine for 2013 and 2014 is shown in Table 2.

Table 2 Intra-industry trade between Slovakia and the Ukraine, according to SITC Nomenclature in 2013 - 2014

SITC Classification	GL	GL 2014
SITC 0 – Foods	0.293	0.763
SITC 1 – Beverages and tobacco	0.941	0.288
SITC 2 – Raw materials	0.209	0.211
SITC 3 – Mineral fuels	0.031	0.080
SITC 4 – Oils and fats	0.000	0.000
SITC 5 – Chemicals	0.434	0.393
SITC 6 – Market products	0.873	0.985
SITC 7 – Machinery and transport equipment	0.446	0.867
SITC 8 – Industrial products	0.778	0.970
SITC 9 – Other (commodity transactions not classified) SITC)	0.299	0.226

Source: The author worked on the basis of statistical data: UNCTADSTAD, 2015

The highest values of intra-industry trade between Slovakia and the Ukraine in the years 2013-2014 were achieved in grades 6-8: market products – industrial products, since both countries have exhibited significant reciprocal trade in these goods. They were followed by SITC 7 – machinery and transport equipment, whose index, compared with 2013, increased by almost twice as much (94%). Another significant increase in the IIT index by almost 2.6 times was observed in class 1 – foods. The phenomenon can be explained by the help of the Ukrainian economy since May 2014: nearly 80 percent of the duties paid by Ukrainian exporters of agricultural products were cancelled. As of 2014, Slovakia has a minimal foreign trade turnover with the Ukraine since the DCFTA limits the Ukraine's exports and imports within individual product classes. Intra-industry trade of class 2 – raw materials and 3 – mineral fuels, as well as other commodity groups in SITC 9, was low because, compared to the great exports of these commodity groups from the Ukraine, Slovakia's exports are the opposite, i.e. negligible in the case from Slovakia to the Ukraine. Due to a low IIT index, class 5 – chemicals also showed low intra-industry trade. It was quite the contrary in the case of goods: more goods were exported from Slovakia to the Ukraine than imported. For class 4 – oils and fats, the IIT index value equalled 0, which means that the Ukraine is a net exporter to Slovakia and according to the statistics given by Slovakia Republic, no goods in this class were exported.

### **3. Conclusion**

Ukrainian discussion of the Association Agreement with the EU is both positive and negative, concentrating on issues of Ukrainian foreign policy. Ukrainian companies are missing an open public debate on the Association Agreement. Public debate in the Ukraine on European integration addresses the issue of membership to the Union, while the Ukraine's integration with the European Union is considered as a pilot area to implement domestic reforms. In general, the issue of European integration and increased cooperation with the EU for the Ukrainian company is developing favourable momentum. The majority of Ukrainian citizens support the idea of deepening relations with the EU under the Association Agreement and DCFTA built before 2014. In the Ukraine, even after application of the DCFTA, the government – together with leading political parties – expressed a pro-European consensus.

Forecasts of experts on the DCFTA indicate that a number of sectors whose output would be increased under the influence of the DCFTA is almost the same as the number of sectors where production would be reduced. It is expected that the implementation of the DCFTA will have a positive impact on agriculture, fisheries, forestry, textile and leather industries and many service sectors and will have a less positive effect for the metallurgical industry, engineering, transport and the coal chemical industry, as a result of the redistribution of production factors in the economy.

In the area of energy cooperation between the Ukraine and Slovakia, there have been positive changes, especially in developing the use of renewable energy, improving energy efficiency, market conditions and the modernisation of the transit system of natural gas on the territory of the Ukraine in cooperation with Slovakia.

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# INNOVATIVE IMPERATIVES FOR COMPETITIVENESS OF NATIONAL TRANSPORT SYSTEMS IN CONDITIONS OF GLOBALIZATION

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**Abstract.** In modern conditions of globalization the problems of national economies competitiveness provision and, as a consequence, of countries' economic safety assurance, are very important and they require urgent elaboration of appropriate decisions by scientific and business community. This is particularly important for the development of transport systems, which play an important role in the livelihood of the population through the provision of spatial relations: interregional, interstate, between the production and consumers and other. The development of information society has necessitated the acceleration of all processes, including reducing the delivery time. In this regard, an important condition for ensuring the competitiveness of the national transport system in the world market of transportation and logistics services is the scientific and technological transport development and activation of innovation activities of transportation and logistics companies in accordance with the main vector of its development – to improve the time of delivery. The authors propose to use the instrument of strategic controlling for the purposes of assessing the national transport system competitiveness. The article presents the key-point indicators for estimation of transport systems innovativeness. Using the proposed evaluation system will allow to perform benchmarking of national transport systems and to improve them to the level of advanced countries in order to harmonize the global transport system. The contribution of the Emperor Alexander I St.Petersburg State Transport University to the transport system development, both national and global, has been presented. For example, research and technical solutions in the field of transport based on magnetogravitational technology, development of high-speed rail lines have being conducted at the University.

**Keywords:** competitiveness, delivery time, globalization, high-speed transport economics, innovation

**JEL Classification:** O310

## 1. Introduction

Globalization is the most important factor of business development for any industry, including the market of transport services. Started late last century, it was caused by such reasons as the availability of cheap labour with high labour productivity, the location of sources



of raw materials with the establishment of industries near them, as well as the emergence of new markets. Globalization is characterized by increased competition, the accelerating pace of growth of foreign direct investment, increase in the volume of intra-firm trade and the establishment of global multinational companies. Transport plays an important role in the globalization of economic systems. The Russian economy and its Railways are actively involved in this process, as evidenced by numerous inter-state agreements and programs. The use of the railway in Russia for commercial gain determines many projects and programs, among them are the International transport corridors (ITC). The development of ITC is one of the factors, challenging the Eurasian integration, the perspectives of which not only open a wide range of opportunities to improve the global transport corridors, but also imposes qualitatively new demands on the transport strategy of the Russian Federation. Russia is one of the most important elements in the creation of the ITC system which is stimulating the rise of not only Russian, but also world economy and is an important prerequisite for attracting domestic and foreign investment. The development of ITC, passing through the territory of Russia, will allow to enter the Eurasian integration to a new level that will ensure growth and efficiency of foreign trade transportation of goods. This will also allow to engage developing countries on the Russian transportation of goods in transit, to improve the efficiency of passenger transport, will contribute to the growth of cargo transportation in domestic traffic, and the active integration into the ITC system will create additional opportunities for the development of the global transportation system and further improvement of its production, information and technological infrastructure. The development of any of these infrastructures involves the modernization and introduction of innovations to achieve competitive advantages.

## 2. Competitiveness in the transport market

### 2.1 Competitiveness of the national transport system

Competitiveness in the transport market is a complex of such consumer, qualitative and cost characteristics of these services which provide an advantage over the competitors' offers of similar services in the market in a certain period of time. The high competitiveness of transport services on the market is a necessary condition for successful implementation in a given volume of offered services (Kazanskaya, 2015). To achieve this, a priority is to intensify innovation activities, taking into account not only the specifics of the industry, but also the available resources of the Railways. Taking into account the technical and technological backwardness of the transport system of the Russian Federation, the priority task in this direction becomes the competent innovation policy, involving the modernization and technical re-equipment of the industry (table 1).

*Table 1: The main characteristics of long-term scenarios of the economic development of Russia*

Conservative scenario	Innovative scenario	Forced scenario
Overcoming bottlenecks in the development of the transport infrastructure after 2020	Large-scale modernization of the transport system to 2025-2030. Construction of high-speed highways.	Large-scale modernization of the transport system by 2025. Construction of high-speed highways.

*Source: Forecast of long-term socio-economic development of the Russian Federation for the period till 2030*

One of the trends in this area is the acceleration of all processes, including the reduction of delivery time. In this regard, activation of innovative activity of transport and logistics companies for ensuring their competitiveness must consider the main vector of development –

the improvement of the delivery time. Taking into account the technical and economic characteristics of competition in rail transport the optimization of the speed parameters of the delivery of goods to customers and passengers to the destination is a reserve of increase interspecific competitiveness of rail transport in the global transport services market.

The target (forced) scenario has been developed on the basis of the innovative scenario, it is characterized by accelerated growth rates (for the maximum use of all growth factors), increased rate of accumulation of private businesses, the creation of large-scale non-oil export sector and substantial foreign capital inflow. This scenario envisages an increase in traffic flows in the economy, maximize economic growth, higher levels of population mobility and transport-logistics services at a significantly higher, than in the conservative scenario, increasing the efficiency.

## 2.2 Key performance indicators for the development of the Russian transport system

The innovative scenario of the long-term socio-economic development of the Russian Federation provides for full satisfaction of demand for freight transport, dynamic growth of passenger traffic due to active development of high-speed, local transportation, with the support of the government. The certain key performance indicators (KPIs) have been planned to review the conservative and innovative scenarios of the industry development (table 2).

*Table 2: Key performance indicators for the long-term development of the Russian transport system*

Key performance indicators (KPIs)	the target value of KPI by 2030	
	Innovative scenario	Conservative scenario
Cargo transportation, mln tons per year	19920.5	17148.2
Cargo turnover, billion tonnes-km per year	4267.3	3822.2
The average commercial speed distribution on rail transport, km/day	320	295
The average commercial speed of goods movement on motorways, km/day	1100	780
Commissioning of high-speed railway lines, km	4253	-
Commissioning of motorways of the first category, km	32246	15880
The creation of multimodal logistics centres in transport hubs	51	45
The length of sections of a transport network equipped with intelligent transport systems, km	12175	3093
The transport mobility of the population, passenger-km per 1 person per year	15561	13308
Passenger transportation, mln passengers per year	68367.5	59856.5
Passenger turnover, bln passenger-km per year	2209.7	1908.8

*Source: Transport strategy of the Russian Federation for the period till 2030*

The high-speed lines form the basis of the innovative development of the Russian transport system. Their creation will provide: increase the accessibility and mobility of the population on the basis of innovation; reducing energy consumption and harmful emissions; an additional impulse to development of Russian science and the most modern production; the creation of jobs focused on highly skilled labor; improving the overall effectiveness and global competitiveness of the transport system of the country. The development of high-speed rail (HSR) projects in the world is due to a significant increase of the accessibility of regions and high demand for this service. By the way, many scientists from different countries of the world have devoted their scientific works to research of agglomerations development effects due to the HSR creation (Booth et al., 2015; Buehler & Hamre, 2014; Chatman & Noland, 2011;

Djurhuus et al., 2015; Dröes & Rietveld, 2015; Gallotti & Barthelemy, 2014; Gregova & Dengova, 2014; Mattrisch & Weiss, 2008; Salonen et al., 2014; Savelsbergh & Woensel, 2016; Strano et al., 2015). The list of countries, assessing the benefit of passenger transport by high speed rail and socio-economic effects from the implementation of HSR projects, is expanding every year. On May, 2014 the length of HSR in the world was approx. 26 thousand kilometers, another 13 thousand are under construction. In the nearest future it is planned to construct 20,000 kilometres of HSR. As practice shows, the demand for modern transport services in Russia is high. So, passenger traffic on high-speed trains "Sapsan" surpasses the wildest predictions and expectations. Switching to HSR from other modes of transport, including the most aggressive competitor – the private car, is more than 50%.

HSR launch is an incentive for the development of large multimodal transport system components. The relationship of schedules of all modes of transport and integrated information system will greatly expand the route network. This will allow to greatly increase passenger traffic, to enhance comfort and accessibility of trips, to create the single tariff and budget systems, to ensure comfortable delivery of passengers to the airports, to expand the radius of a comfortable trip. Increased speed and improved quality of service will attract an additional segment of effective traffic flow by providing additional demand for all modes of transport.

It is necessary to note the contribution of the Emperor Alexander I St. Petersburg State Transport University to the transport system development, both national and global, has been presented. For example, research and technical solutions in the field of transport based on magnetogravitational technology, development of high-speed rail lines have been conducted at the University. The University is a technological platform of JSC "Russian Railways". The scientific school "The intelligent transport and logistics systems economics", master's program "High-speed transport economics" are being developed on its basis (Egorov, 2014; Lyakina, 2014; Palkina, 2015, A; Palkina, 2015, B; Satcuk, 2014; Volkova, 2013; Zhuravleva, 2014). Thanks to the active development of these areas, scientists, graduates, students of the University take an active part in the development of scientific and technical solutions in the field of transport based on magnetic levitation, high-speed links.

### 2.3 Directions of state regulation of innovation activities

While implementing the innovative activities the following instruments of state regulation should be considered (table 3).

*Table 3: Directions of state regulation of innovation activities*

Normative-legal	Organizational	Economic	Financial
1. The creation of the legislative conditions for increased innovation. 2. The establishment of the legal basis of relations of its subjects. 3. The guarantee protection of their rights and interests, particularly, protection of rights to objects of intellectual property.	1. Promotion of the innovation infrastructure development. 2. The assistance of the personnel support of innovative activity. 3. Promotion of the training, retraining and enhancement of qualifications of personnel engaged in innovation activities. 4. Information support.	1. Promotion of business activity. 2. Suppression of unfair competition. 3. Conducting the tax and pricing policy to the supply growth in the innovation market. 4. Creation of the favourable tax conditions for conducting innovation activities of all actors. 5. Development of high-tech products leasing.	1. The conduct of fiscal policy, providing funding for innovative activities. 2. The allocation of direct state investments for implementation of innovative programs and projects that are important to social development, but not attractive for private investors. 3. The provision of grants, concessional

	5. Facilitating integration processes in the innovative sphere. 6. Promoting international cooperation in this field. 7. Protection of the Russian participants interests in the field of the innovation activities in international organizations.	6. Support of domestic innovative products in the international market.	loans, guarantees to investors taking part in innovation.
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## 2.4 Indicators for strategic controlling the transport innovative development at the micro level

Innovative landscape of the Russian transportation system is largely determined by such important factors as the level of innovative activity underlying link of the branch – transport organizations (mainly large and medium). For example, in railway transport policy in the field of innovative technologies is mainly determined by JSC "RZD". A peculiarity of the innovation activities of transport and logistics companies is the predominance of technological innovation related to the implementation of new or significantly improved method of delivery of goods / passengers. These include significant changes in the technology of the transportation process, vehicles, transport infrastructure, the software. The degree of innovativeness of a new product / technology (intensity of innovation) in transport can be assessed from the standpoint of impact on the speed of transportation: innovations in transport, which provide the speed of the displacement over 400 km/h are considered to be innovative, otherwise – improving changes. Strategic controlling is an effective tool for achieving the strategic objectives of innovation activities of transport and logistics companies, among which we mention: improving the effectiveness, efficiency, quality, innovation management, providing the technological leadership necessary for sustainable funding of innovative activities. The basic element of strategic controlling is a system of innovative activity indicators that is designed to formalize the strategic objectives in this area and assess the extent and effectiveness of their achievements, identification of causes of deviations of actual results from target values of indicators and form the basis for the development of measures to improve innovation processes in the organization, increase the productivity and efficiency of its innovation activities (Palkina, 2015, C). However, the methodology of innovative activity indicators system formation for transport and logistics companies, which are actual scientific and practical task, is currently not adequately addressed in the scientific literature. The proposed key performance indicators for performance of the strategic controlling functions are shown in the table 4.

Table 4: KPI for strategic controlling in the transport and logistics company

Goal	Projection objective
1. Improving the effectiveness of innovation management	<ul style="list-style-type: none"> <li>- the number of patents and other intangible assets put on the balance sheet on the results of the conducted research,</li> <li>- the number of introduced new technologies according to the R&amp;D results,</li> <li>- the share of vehicles of "a new generation" in the procurement,</li> <li>- the percentage of sales of new products in total sales,</li> <li>- reduction of time of delivery of goods / passengers as a result of implementation of innovations in organizations,</li> <li>- the average speed of delivery of goods / passengers,</li> </ul>

	<ul style="list-style-type: none"> <li>- the volume of emissions of harmful substances into the atmosphere,</li> <li>- the number of accidents to number of flights</li> </ul>
2. Improving the efficiency of innovation management	<ul style="list-style-type: none"> <li>- profitability of sales of transport services provided with the use of R&amp;D results,</li> <li>- return on innovation capital invested,</li> <li>- energy efficiency,</li> <li>- labour productivity,</li> <li>- unit cargo- passengers capacity</li> </ul>
3. Improving the quality of innovation management	<ul style="list-style-type: none"> <li>- the number of innovative proposals and projects received from employees of the company and expected the potential payback;</li> <li>- the number of projects transitioning from one stage of the development process and launch into the innovative products and services market to the next;</li> <li>- the cycle time of the innovation process or its individual stages</li> </ul>
4. Increasing technological leadership	<ul style="list-style-type: none"> <li>- the number of patents obtained,</li> <li>- the number of patented transport products and services,</li> <li>- innovative quality of the portfolio</li> <li>- balance between breakthrough and improving projects</li> </ul>
5. Provision of the necessary sustainable funding.	<ul style="list-style-type: none"> <li>- R&amp;D funding at the expense of own funds,</li> <li>- the weighted average cost of capital invested in innovation projects,</li> <li>- the net present value of innovative projects,</li> <li>- the payback period of investments in innovation projects</li> </ul>

The definition of target values of the presented parameters should be set based on the results of an independent technology audit. It is expedient to be guided by best international practice, similar indicators of the leading world competitors according to the results of the benchmarking with the establishment of the transition period for achieving them with the aim of increasing, ensuring an adequate level of competitiveness of the transport and logistics companies and the national transport system as a whole. The system of indicators of innovative activity of transport and logistics organizations designed to ensure the effective and efficient achievement of its strategic objectives and provides the methodological basis for monitoring of innovation activity of national transport companies .

### 3. Conclusion

Globalization is the most important factor of business development for any industry, including the market of transport services. Globalization is characterized by increased competition, the accelerating pace of growth of foreign direct investment, increase in the volume of intra-firm trade and the establishment of global multinational companies. Transport plays an important role in the globalization of economic systems. Competitiveness in the transport market is a complex of such consumer, qualitative and cost characteristics of these services which provide an advantage over the competitors' offers of similar services in the market in a certain period of time. Russia is one of the most important elements in the creation of the ITC system which is stimulating the rise of not only Russian, but also world economy and is an important prerequisite for attracting domestic and foreign investment.

Activization of innovative activity of transport and logistics companies for ensuring their competitiveness must consider the main vector of development – the improvement of the delivery time. The high-speed lines form the basis of the innovative development of the international transport system, including Russian. Taking into account the technical and economic characteristics of competition in rail transport the optimization of the speed parameters of the delivery of goods to customers and passengers to the destination is a reserve

of increase interspecific competitiveness of rail transport in the global transport services market. While implementating the innovative activities the proposed instruments of state regulation (normative-legal, organizational, economic, financial) should be consirded.

Innovative landscape of the international transportation system can be determined with the range of important indicators, which allow to evaluate improving the effectiveness, efficiency, quality of innovation management, increasing technological leadership, provision of the necessary sustainable funding. In the whole, strategic controlling is an effective tool for achieving the strategic objectives of innovation activities of transport and logistics companies. The proposed key performance indicators system for performance of the strategic controlling in the transport and logistics companies include the certain parameters in accordance with the main goals of the strategic development. Using this evaluation system will allow to perform benchmarking of national transport systems and to improve them to the level of advanced countries in order to harmonize the global transport system.

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## ORGANIZATIONAL CULTURE AND KNOWLEDGE MANAGEMENT WITHIN RUSSIAN MANUFACTURING COMPANIES ENTERING GLOBAL MARKETS

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**Abstract.** Since Russian manufacturing companies began integration into global markets, information technologies used to address the needs of global supply chains became more complicated. However, not so many companies have taken the role of human resources development and knowledge management (KM) approach into consideration. It is obvious that effective information technology management required for substantial improvement of productivity is impossible without integration of KM principles into the organizational culture. This paper aims to examine the impact of organizational culture development on the enhancement of KM performance in Russian manufacturing companies which take advantage of global market integration. Recent literature emphasizes that there is a strong positive relation between organizational culture on the one hand, and knowledge generation, distribution and application on the other within manufacturing companies. We focused on analyzing data from companies' annual reports and from 140 completed copies of a questionnaire that was specially designed to test the aforementioned hypothesis. The results show that organizational culture development is a significant challenge that must be tackled over several directions: successful implementation of KM approach assumes reduction of control-oriented culture domination, along with monitoring over personnel attitudes and change of value perspectives. From the practical point of view this paper suggests a support for KM initiatives in manufacturing companies and sheds some light on the nature of KM development barriers related to organizational culture.

**Keywords:** knowledge management, organizational culture, manufacturing, Russia

**JEL Classification:** D20, M14, D83

### 1 Introduction

Globalization has reinforced competition in the industrial markets and caused new challenges as well as opportunities for manufacturing enterprises across the world. In recent years international companies have been adapting new management concepts and instruments to enhance performance and, mainly, to effectively utilize totally different strategic recourses



such as information, knowledge and intellectual capital. This is reflected in recent increase in number of approaches to actualizing human capital, organizational learning and knowledge management (KM). Knowledge-based perspective of a firm became an important theoretical underpinning to provide a sustainable competitive advantage for every company that operates globally. Precisely for this reason analyzing internal and external factors affecting KM processes, is crucial for identifying a strategic view of organization from a knowledge-intense economy perspective.

Over more than two decades ago Russian companies were first permitted to enter the global markets, and that brought much pressure on the management systems of initially stable, risk-averse national enterprises. Oil-gas and metallurgy industries historically were the cornerstones Russian national economy, for many years they functioned as closed systems with a dominant internal focus on exploiting natural resources and extensive development of manufacturing technologies. However, companies operating on the global markets should act as open systems that obtain valuable information, transform it into knowledge, and provide an adequate responses to the challenges of competitive markets. Therefore focus of management efforts has shifted from technical-oriented perspective to business cooperation with global partners, effective intercultural knowledge transfer, development of human capital and information technologies (Bengoa et al., 2009).

The concept of knowledge management has gained international acceptance as a theoretical framework and a set of practical instruments to explain “the complex process of how knowledge is created and utilized organizationally through interaction with the environment” (Nonaka et al., 2008, p. 2), identify and analyze available and required knowledge (Gunasekaran & Ngai, 2007). Internal environment of knowledge management provides a basis for local knowledge-related business processes such as creation and acquirement, storage, dissemination, sharing and application. This particular environment or common context includes human resource management strategy, information technology management approaches, and organizational culture. Recent KM empirical and theoretical research put much emphasis on the assumptions that various types of organizational cultures play an important role in knowledge creation and sharing intentions of employees (Alavi et al., 2006; Chang & Lin, 2015; Rai, 2011; Zheng et al., 2010). Since concept of “organizational culture” entered academic literature across the world, it gained a status similar to strategy, structure, and control (Hofstede et al., 1990). Therefore organizations need to encourage and nurture cultures positively affecting knowledge sharing behaviors and human relations, promoting knowledge transfer.

It is important to take into consideration the national peculiarities of management environment as KM is largely influenced by social and economic context in which it emerges (Alavi et al., 2006). Since previous studies confirm the lack of KM research within the Russian companies (Klafke et al., 2016), axiological foundations of knowledge creation and sharing behaviors are blurred. The purpose of this paper is to extend previous research by investigation of relationships of knowledge creation, storage, dissemination and application processes and organizational culture within industrial enterprises in Russia. In this study we surveyed 7 companies representing chemical, metallurgical and engineering industries of Russia in the global markets, and proposed a structural equation model to investigate relations of organizational culture and KM processes.

## **2 Relationship of knowledge management and organizational culture: literature review**

### **2.1 The meaning of organizational culture for effective KM**

The relations of KM practices and organizational culture are widely discussed among management practitioners and academics. It is generally accepted that the negligence towards organizational culture issues along with lack of appropriate reward and technical support seems to be a crucial barrier for the improvement of KM performance and effectiveness (Ranjbarfard et al., 2014). From the practical point of view, applicable knowledge which could be considered as a strategic asset is closely related to the internal environment, therefore knowledge creation and application requires commonly shared context (Rai, 2011). There is no consensus in recent academic literature about definition of organizational culture; in this paper we adhere to a holistic representation of this concept. Culture is a complex combination of shared values, meanings, symbols (Bryson, 2008; Al Saifi, 2015) and collective mental models (Rai, 2011). It depends principally on employees' attitudes and their willingness to achieve organizational goals. The core of culture is formed by values and unconscious feelings (Hofstede et al., 1990). Organizational culture is closely related to human capital accumulation and development, internal psychological climate; therefore it constitutes the social nature of KM processes and moves its focus towards employees.

The substantial issues of organizational culture identification and quantitative measurement occur due to great cultural diversity and complexity emerging as a consequence of inter-firm differences in shared values and human resource management approaches across companies. It is doubtful that an organization can be precisely classified as a single type of culture; all of the types are generally represented and balanced in every case. According to Hofstede et al. (1990) organizational culture differences can be defined by means of six-dimensional model: process/results, employee/job oriented, parochial/professional, open/closed systems, loosely/tightly controlled, normative/pragmatic organizational cultures. Scholars proposed a model for measuring organization cultures based on extensive research of differences among cultures represented in international companies. Chang and Lin (2015) noted that result-oriented cultures have a positive impact on knowledge storage intention while tightly controlled have an inverse effect. Management therefore was advised to foster job-oriented cultures and create a democratic climate to reduce effects of tightly controlled cultures (Chang & Lin, 2015). Cameron and Quinn (2006) proposed a model based on four competitive (or opposite) assumptions that highlight dominant shared values, success factors, types of organizational leadership, strategic emphasis, and approach to human resource management. Authors analyzed two opposite dimensions of organizational culture: emphasis on flexibility or stability and internal or external focus on differentiation, competition, and rivalry (Cameron & Quinn, 2006; Rai, 2011). Competing values framework implies four ideal types of organizational cultures: clan, adhocracy, market, and hierarchy. In order to identify indicators of organizational effectiveness Rai (2011) proposed an integrative framework for organizational culture and KM based on modified competing values framework and Nonaka's et al. (2008) knowledge and conversion model. The author includes ethical and trusting dimension into organizational culture framework and emphasizes the relevance of internal climate to KM processes. Ethical dimension is characterized by mutual trust, compassion and concern for others; it facilitates efficiency of KM in organization (Rai, 2011).

In this research we used the competing values framework because it consists of four opposite constructs which can help to obtain more differentiation of constructs in factor analysis and consequently more consistency in results. We proposed several theoretical assumptions based on recent research for each type of aforementioned cultures embedded in competing values framework and developed four hypotheses. Research hypotheses are formalized in Table 1.

*Table 1: Types of organizational culture and their influence on KM: hypotheses development*

Type of organizational culture and its key characteristics	Implications for KM and local KM processes: creation, storage, sharing and application
<i>Clan</i> . Highlights internal focus on collaboration, teamwork and interpersonal relations. Clan culture is typical of family-type companies with long history and stable membership.	Minimal management levels and planning, domination of informality. <b>H1</b> : Clan culture is positively related to sharing (dissemination) and application of knowledge in companies entering global markets.
<i>Adhocracy</i> . Organizational focus on innovations and creativity, readiness for change and strategic transformation. Culture emphasizes external, organic focus and flexibility.	Facilitates communication and experimentation, encourages knowledge creation and sharing along with application. <b>H2</b> : Adhocracy culture is positively related to creation and sharing (dissemination) of knowledge in companies entering global markets.
<i>Market</i> . Externally focused and result-oriented culture, accentuating competitiveness and productivity. This type of culture is “driven by customer focus” and pays much attention to measurement of effectiveness.	Market culture supports communication and knowledge combination, and obtaining of external information. <b>H3</b> : Market culture is positively related to creation and application of knowledge in companies entering global markets.
<i>Hierarchy</i> . Stable, and predictable, mechanistic approach to management and measurement of effectiveness. This type of culture is close to tightly controlled (Hofstede et al., 1990)	Emphasis on routine, regulations and efficiency improvement in KM. <b>H4</b> : Hierarchy culture is positively related to storage of knowledge and its application in companies entering global markets.

*Source: organizational culture framework is based on (Cameron & Quinn, 2006), KM implications are adapted from (Rai, 2011)*

## 2.2 KM issues and approaches in Russian industrial companies in context of globalization

Although managers of a typical Russian company oriented to the internal market are generally acquainted with the idea of KM, in practice it is perceived as just an elegant foreign concept associated with additional costs and vague perspectives. On the contrary, companies entering global markets are always act as “grateful successors” of international management traditions and approaches. In the surveyed industrial companies managers did not provide any negative feedback concerning misunderstanding of KM term and its interpretation. It should be considered, however, that the western perspective on business culture and management approaches has transformed under the conditions of Russian national economy. Bengoa et al. (2009) conclude that mutually shared knowledge of business partners can be inapplicable in Russian social and political conditions; it can provide a serious obstacle to intercultural knowledge transfer and learning. Klafke et al. (2016) conclude that there is a considerable literature gap in KM practices in Russia. Authors imply that main KM practices in Russian companies are rather conservative: organizational learning, best practices and training outside.

## 3 Data and methodology

The empirical basis of this study is a survey which was conducted in 2016. Total sample consisted of 140 completed questionnaires gained from 7 companies; 33,3 % and 15,9 % of respondents were managers and top managers correspondingly, 34,9 % were specialists and engineers; the rest 15,9 % of questionnaires were completed by workers and associate officers.

Global market inclusion is considered as an important background for each company in the sample, we used companies' annual reports to evaluate their international activity. All the surveyed companies entered global markets within the 15 last years; they were operating in the markets of Europe, BRIC and CIS countries at the time of the study. The survey methodologies used in this research were obtained from previously published studies. On the first stage we used the 24 items from questionnaire originally developed by Cameron and Quinn (2006) (pp. 26-28), which were adapted and translated into Russian, to determine the prevailing type of organizational culture. The Likert-type 7-point scale (1 – strongly disagree, 7 – strongly agree) was used in this questionnaire instead of dividing 100-points among alternatives, i.e. items of the construct. Though Likert-type scale generally provides less differentiation, it assumes that each respond is independent. The second stage implied measurement of KM processes: creation and acquisition, storage, dissemination and sharing, and application of knowledge. For the second stage we took items from the questionnaire by Bock et al. (2005) to measure fragmented performance of KM processes (Bock et al., 2005). Generally we modified 3 items to measure each of 4 KM constructs (12 items), thus the core part of the questionnaire consisted of 36 items. Completed questionnaires were obtained using web application; according to recent research this method does not show statistically different results compared to other data collection methods (Zheng et al., 2010). Factor analysis revealed four factors in the first part of questionnaire concerning organizational culture; all the factors together explain 62 % of total variance. We applied structural equation modelling (SEM) using SPSS AMOS for the statistical analysis of interrelations.

## 4 Results

On the first step Cronbach's alpha demonstrated an acceptable level of internal consistency of all constructs except market culture (Table 2). Cultural diversity and complexity was the first problem that lowered factor loadings across the constructs, therefore items with loadings less than 0,6 were excluded from further research. It seems that market culture is inherent to every surveyed company as they foster result-oriented approach; hence we used only two items which, according to factor loadings, were tightly connected with this construct. We used only two items to measure the majority of KM constructs.

Table 2: Cronbach's alpha, items, factor loadings, mean (M) and standard deviation (SD) values for each construct

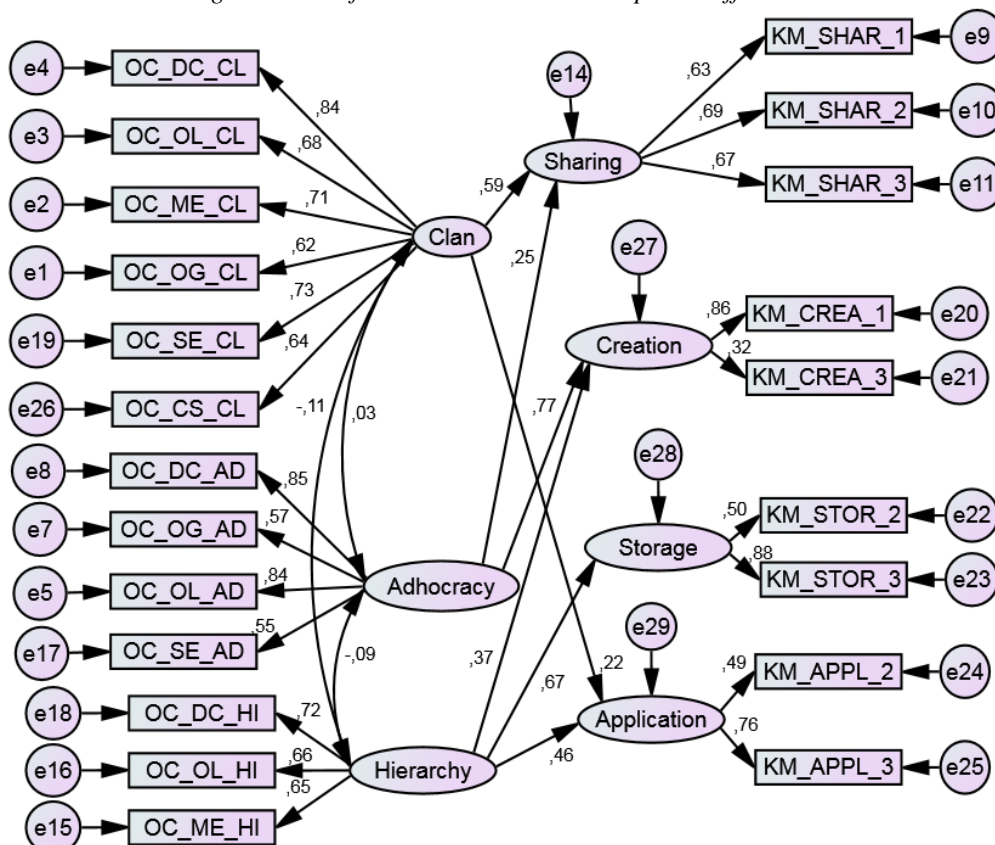
Constructs	Cronbach's $\alpha$	Names of items*	Factor loadings	M	SD
Clan	0,854	OC_DC_CL	0,827	4,391	1,648
		OC_OL_CL	0,699	4,957	1,418
		OC_ME_CL	0,748	5,129	1,356
		OC_OG_CL	0,726	4,914	1,289
		OC_SE_CL	0,769	4,786	1,251
		OC_CS_CL	0,672	4,843	1,416
Adhocracy	0,850	OC_DC_AD	0,854	4,343	1,674
		OC_OL_AD	0,823	4,436	1,499
		OC_ME_AD	0,839	4,221	1,582
		OC_OG_AD	0,676	5,000	1,424
		OC_SE_AD	0,673	4,521	1,426
Market	0,707	OC_SE_MA	0,755	4,464	1,391
		OC_CS_MA	0,678	4,264	1,740
Hierarchy	0,822	OC_DC_HI	0,737	4,986	1,507
		OC_OL_HI	0,727	4,779	1,241

		OC_ME_HI	0,771	4,814	1,491
Creation and acquisition	0,740	KM_CREA_1	0,619	4,757	1,683
		KM_CREA_3	0,806	4,929	1,382
Storage	0,830	KM_STOR_2	0,661	4,500	1,437
		KM_STOR_3	0,840	5,041	1,448
Dissemination and sharing	0,794	KM_SHAR_1	0,779	5,579	1,264
		KM_SHAR_2	0,775	5,193	1,351
		KM_SHAR_3	0,769	4,900	1,542
Application	0,806	KM_APPL_2	0,810	5,814	0,971
		KM_APPL_3	0,715	5,643	1,163

\*Note: OC – organizational culture, KM – knowledge management, DC – dominant characteristics, OL – organization leadership, ME – management of employees, OG – organization glue, SE – strategic emphasis, CS – criteria of success, CL – clan, AD – adhocracy, MA – market, HI – hierarchy. Source: (Cameron & Quinn, 2006) and authors' measures based on the conducted survey

The hypothesized model that included all theoretical constructs was compared to several alternative models, and finally the model with the best fit was accepted. For the model depicted below (Figure 1):  $\chi^2=378,4$ ;  $df=199$ ;  $\chi^2/df=1,902$  (less than 5),  $p<0,01$ ; goodness of fit index (GFI)=0,811 (more than 0,9 is perfect fit); adjusted goodness of fit index (AGFI)=0,760; root mean square residual (RMR)=0,230 (acceptable); root mean square of approximation (RMSEA)=0,081 (acceptable). According to SEM estimations *H1 was supported*: clan culture facilitates knowledge sharing ( $t=4,423$ ) and application. *H2 was also supported*: adhocracy culture positively impacts knowledge sharing and strongly affects creation process ( $t=8,540$ ). *H3 was rejected* due to low level of fit of the hypothesized model where market culture construct was included. *H4 was supported*: hierarchy culture is positively related to knowledge storage ( $t=3,310$ ) and application.

Figure 1: Modified structural model with path coefficients



Source: authors' estimations

## 5 Conclusion

Successful KM program includes focus on organizational culture improvement. The study findings showed that culture provides a sustainable social platform for knowledge creation, storage, and application in Russian companies entering global markets. Organizations characterized by adhocracy culture are viewed to be more flexible, innovative and creative while hierarchical tightly-controlled organizations seem to have problems with knowledge creation. Clan organizations tend to succeed in knowledge sharing and application. According to our findings, market culture is closely connected with all other types of organizational culture as it focuses on the performance and market competition, so in our study it is unlikely to be used as independent construct. It is obvious that the research has several limitations concerning methodology. Firstly, we used a rather simplistic approach to define the type of organizational culture and measure KM processes. In further research additional items are to be developed to characterize used constructs. Secondly, hypotheses should include exogenous variables reflecting companies' background and fields of market activity. Thirdly, a larger sample is required to enhance the reliability of constructs. Practical managerial implications are as follows: for companies operating on the global markets organizational culture is an important precursor of effectiveness. Managers should develop KM practices taking into consideration cultural issues and apply new approaches to provide a competitive advantage.

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## STRUCTURAL SHIFT IN A CITY LABOR MARKET: GLOBALIZATION AND LOCAL EFFECTS

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**Abstract.** Researchers are getting more and more interested in labor market reactions of local territories to world crises. As a rule, such research is conducted using only data of local statistics on the basis of generalization and data analysis of a labor market. The assessment of the influence of national and regional policy, reorganizations of branch structure was possible only indirectly on the basis of value judgment. A research objective is to prove that by means of analysis of structural shifts it is possible to assess consequences of 2008 global crisis on city labor markets, to assess quantitatively the influence of four components: three levels of territorial country division and to allocate the influence of a branch environment in the conditions of globalization. Research tasks are: to prove the expediency of model application of structural shifts to achieve the goal; to adapt an analysis model of structural shifts to study the phenomena in a city labor market due to the introduction of a local factor; to collect statistical data on 28 large Russian cities during 2009-2014; to carry out calculations, to formulate conclusions and recommendations. According to statistical data, our research will enable to prove that large cities are the most sensitive to crisis influence in the conditions of globalization, they quickly react to policy changes; productivity of governmental measures depends on the effective work of local government; this research will encourage us to pay attention to that fact that current global recession is a turning point for local government.

**Keywords:** method of structural shifts, analysis, crisis consequences, region, labor market

**JEL classifications:** J21, R11, O180

### 1. Introduction

Globalization stimulates exchange processes between countries and cities: businessmen move a material and financial capital to get a big profit, the poor migrate to find a job and security, the rich travel as tourists more actively. Freedom of capital flow and people causes increase of negative consequences of economic instability. World financial and economic crisis of 2008 can be a striking example which consequences resulted in the countries with an open economy, which are involved in globalization process. The decrease of GNP, aggregate demand, debt increase, negative impact on the employment were observed in the countries with developed and developing economy including Russia.



These materials continue the research of influence of local conditions, activity of local authorities on structural shifts of employment in the cities. The difference from the materials which are earlier presented to the press is deeper analysis of structural shifts in the cities developing under the influence of globalization processes. Research goal is to show that by means of modified analysis of structural shifts it is possible to estimate consequences of world crisis of 2008 on labor markets of the cities, it is possible to estimate the influence of four components quantitatively: three levels of territorial division of the country (the country, the region, municipality) and to allocate the influence of a branch environment in the conditions of globalization.

The justification of application of shift share analysis is in the following:

At first, for a long-term period of use in various models, this method proved itself as essential for studying a contribution of local, branch, regional factors (Creamer, 1940; Dunn, 1960; Arcelus, 1984; Harris et al., 1994; Artige & Neuss, 2015).

Secondly, the introduction of a local factor into model will enable to solve a problem of allocation of a local effect in the change of a general structure of taken jobs.

To receive the assessment of a role of local government in labor market regulation, we will introduce one more element into a traditional three-factorial model – a local factor (LSi). Then the generalized four-factorial shift share analysis model will look like this:

$$\Delta l_I = l_{i,t} - l_{i,t-1} = NS_i + IM_i + RS_i + LS_i \quad (1)$$

where

- $\Delta l_I$  – absolute indicator change at the local level;
- $l_{i,t}$  – indicator value at the level of local territory (for example, the city) the village) in a specific industry in the last studied year;
- $l_{i,t-1}$  – indicator value at the level of local territory in a specific industry in the first studied year;
- $NS_i$  – national factor (at the country level);
- $IM_i$  – sectoral factor;
- $RS_i$  – regional factor (region).
- $LS_i$  – local factor (local territory).

National factor (at the country level):

$$NS_i = l_{i,t-1} \times \frac{E_t - E_{t-1}}{E_{t-1}}, \quad (2)$$

where

- $l_{i,t-1}$  – indicator value at the level of municipality in a specific industry in the first studied year;
- $E_t$  – indicator value over the country in the last studied year;
- $E_{t-1}$  – indicator value over the country within the first studied year.

Sectoral factor:

$$IM_i = l_{i,t-1} \times \left( \frac{E_{i,t} - E_{i,t-1}}{E_{i,t-1}} - \frac{E_t - E_{t-1}}{E_{t-1}} \right), \quad (3)$$

where

- $E_{i,t}$  – indicator value at the country level in a specific industry in the last studied year;
- $E_{i,t-1}$  – indicator value at the country level in a specific industry in the first studied year.

Regional factor:

$$RS_i = l_{i,t-1} \times \left( \frac{e_{i,t} - e_{i,t-1}}{e_{i,t-1}} - \frac{E_{i,t} - E_{i,t-1}}{E_{i,t-1}} \right), \quad (4)$$

where

- $e_{i,t}$  – indicator value at the regional level in a specific industry in the last studied year;
- $e_{i,t-1}$  – indicator value at the regional level in a specific industry in the first studied year.

Local factor:

$$LS_i = l_{i,t-1} \times \left( \frac{l_{i,t} - l_{i,t-1}}{l_{i,t-1}} - \frac{e_{i,t} - e_{i,t-1}}{e_{i,t-1}} \right) \quad (5)$$

where  $l_{i,t}$ ,  $l_{i,t-1}$  – a number of the employed in the local territory in a specific industry in the running and basic periods.

Then the general change of the employed in the city can be explained by the influence of four effects:

$$\sum \Delta l = \sum NS + \sum IM + \sum RS + \sum LS \quad (7)$$

The national effect ( $\sum NS$ ) is a result of dynamics of general employment in the country. The positive effect in the cities is, as a rule, observed under the influence of positive national dynamics. Branch effect, or the effect of a national branch environment ( $\sum IM$ ), is a result of changes in economic structure.

The more the structure of local economy corresponds to market conditions, the bigger effect can be observed. The effect of regional proportions ( $\sum RS$ ) develops under the influence of regional economic structure and shows how regional labor market conforms to national proportions. The local factor ( $\sum LS$ ), or the effect of territorial competitiveness shows as far as the city uses its competitive advantages. Analyzing the size and an orientation of a local factor in a section of activities, it is possible to estimate opportunities for urban economy development.

The offered model supplements already available analysis shift share variations: four-factorial model Esteban-Marquillas, J.M. (1972), expanded model (Arcelus, 1988) dynamic model (Barff R., 1988; Wilson at all., 2005).

## 2. The analysis of structural shifts of employment in the large cities of Russia

It is considered that in the conditions of globalization in developing countries with centralized economy the main role in employment regulation in labor market belongs to governmental policy (Oduro-Ofori, 2011). The role of local authorities in the regulation of labor market of local territories are less studied.

The modern paradigm of economic development is that a major factor of economic growth is human capital (Romer, 1990) (Becker, 2007, 2012). Therefore the issues of formation and adaptation of labor markets under the requirements of knowledge economy attract keen interest of scientists and politicians. In particular, there was studied the relation between self-employment and creation of business and innovations in city and rural labor markets (Faggio & Silva, 2014), stability of employment structure in megalopolises (Redfearn, 2009), city employment cycles (Owyang et al., 2013; Wall, 2013).

As a rule, when dynamics and structure of the employment market in labor market are studied, researchers use the analysis of traditional statistics (an unemployment level, an employment level (Klimko, 2015), budget data (Travers, 2012), interview results, polls, documents analysis are used more rarely (Oduro-Ofori, 2011). These methods do not allow comparing a contribution of national and regional governments, a market conjuncture and activity of local government to the general result of dynamics and structural shifts in labor market in the conditions of globalization.

Using public data on 28 large cities of the Volga Northwest, Ural federal districts, and also Moscow from 2008 till 2014 we received the results of structural shifts in labor market of the large cities of Russia, which are various in a geographical location, population, economic structure. The belonging to various types allowed carrying out the comparative analysis of structural shifts and drawing important conclusions for politics.

We specify that the number of employees of the institutions of Moscow and Leningrad regions includes indicators of Moscow and St. Petersburg. These cities-regions are actual administrative centers for the Moscow and Leningrad regions. The main results on 28 Russian cities are presented in Table 1.

*Table 1: Structural shifts in the cities, 2009-2014, thousands persons*

Cities	2009	2014	NS	IS	RS	LS	ΔL
Pskov	75,14	59,92	0,44	-0,69	-0,42	-14,56	-15,22
Petrozavodsk	78,82	73,89	0,46	-0,77	-7,72	3,11	-4,93
Veliky Novgorod	79,68	74,12	0,47	-0,78	-1,59	-3,66	-5,56
Ioshkar-Ola	76,43	75,23	0,45	-1,27	-1,03	0,66	-1,20
Syktvykar	89,06	84,90	0,52	-1,28	-5,75	2,35	-4,16
Vologda	106,21	95,10	0,62	-1,38	-3,66	-6,70	-11,11
Kurgan	115,28	95,56	0,68	-2,37	-7,05	-10,98	-19,72
Arkhangelsk	123,00	97,76	0,72	-1,07	-3,36	-21,54	-25,25
Murmansk	108,90	98,16	0,64	0,37	-9,92	-1,82	-10,73
Saransk	108,27	105,38	-2,49	1,16	-4,51	2,95	-2,90
Kaliningrad	138,11	130,83	0,81	-0,25	-3,38	-4,44	-7,27
Cheboksary	150,49	138,07	0,88	-2,79	-3,72	-6,79	-12,42
Kirov	157,04	143,29	0,92	-2,04	-6,16	-6,47	-13,75
Penza	157,00	145,69	0,92	-2,38	-8,41	-1,45	-11,31

Ulyanovsk	187,52	177,52	1,10	-4,28	0,26	-8,05	-9,99
Orenburg	260,69	190,48	1,53	-2,90	-0,16	-68,67	-70,21
Izhevsk	219,50	196,20	1,29	-3,42	-1,89	-19,27	-23,30
Tyumen	183,90	201,24	1,08	1,01	3,56	11,69	17,34
Saratov	260,05	247,26	1,52	-2,81	-3,78	-7,72	-12,79
Perm	311,04	298,65	1,82	-3,91	-12,50	2,19	-12,39
Ufa	336,81	323,51	1,97	-1,85	-4,86	-8,56	-13,30
Samara	399,60	341,14	2,34	-0,26	-9,43	-51,11	-58,46
Chelyabinsk	352,47	347,14	2,07	-6,49	1,69	-2,60	-5,34
Kazan	342,50	352,51	2,01	-2,95	1,01	9,94	10,01
Nizhny Novgorod	454,45	442,43	2,66	-0,53	-14,01	-0,14	-12,02
Yekaterinburg	438,98	447,82	2,57	0,49	-3,68	9,47	8,85
Saint-Petersburg	2450,30	2589,80	14,36	47,10	61,17	16,88	139,50
Moscow	6368,10	6778,40	37,31	224,35	239,99	-91,35	410,30
Total	14129,29	14351,99	79,66	228,00	190,71	-276,65	222,69

Source: It is calculated by authors according to the Federal State Statistics Service of the Russian Federation

The surveyed cities significantly differ by size, a geographical location, structure of municipal economy. They are united by the status of administrative center of the Russian Federation entity as in Russia the federal system is adopted. This status means that there are bodies of regional authorities, best higher educational institutions, medical and cultural institutions in the region.

Meanwhile, as calculations show, not in all considered cities the urbanization develops. In many of them population decreases, despite positive influence of a national factor. The general increase in number of employees of the enterprises is observed in the cities: Tyumen (17,34 thousand people), Kazan (10,01 thousand people), Yekaterinburg (8,85 thousand rubles), St. Petersburg (139,50 thousand people), Moscow (410,30 thousand people).

These are large Russian cities with the population more than one million (with the exception of Tyumen). The group of the cities is presented in Table 2 on the basis of the number of employees in the institution.

Table 2: A contribution of a local factor on groups of the cities

Groups on the number of employees of institutions	Total number of the population, thousand people. for January 1, 2014*	Cities	A contribution of a local factor (LS), %**
1 group (not over 100 thous people)	206,7	Pskov	-24,30
	272,1	Petrozavodsk	4,20
	220,0	Veliky Novgorod	-4,94
	260,4	Ioshkar-Ola	0,87
	242,0	Syktyvkar	2,77
	308,2	Vologda	-7,04
	325,7	Kurgan	-11,49

	350,4	Arkhangelsk	-22,04
	299,1	Murmansk	-1,86
2 group (from 100 till 200 thous. people)	299,2	Saransk	2,80
	448,5	Kaliningrad	-3,40
	468,7	Cheboksary	-4,92
	487,1	Kirov	-4,51
	521,3	Penza	-0,99
	560,0	Orenburg	-36,05
	616,7	Ulyanovsk	-4,53
	637,3	Izhevsk	-9,82
3 group (from 300 till 500 thous. people)	679,9	Tyumen	5,81
	840,8	Saratov	-3,12
	1026,5	Perm	0,73
	1096,7	Ufa	-2,64
	1169,2	Samara	-14,98
	1169,4	Chelyabinsk	-0,75
	1190,0	Kazan	2,82
	1263,9	Nizhny Novgorod	-0,03
	1412,3	Yekaterinburg	2,12
4 group (over 500 thous. people)	5132,0	Saint-Petersburg	0,65
	12108,3	Moscow	-1,35

Source: \* Official data of the Federal State Statistics Service of the Russian Federation.

\*\* It is calculated by authors according to the Federal State Statistics Service of the Russian Federation.

From Table 2 it is possible to see that the most unsuccessful is the first group, in which in three cities there are high values of a negative contribution of a local factor (more than 10%). Multidirectional, but measurable influence of a local factor is observed in the 4th group which is made by cities-regions.

Such situation supports the point of view that globalization stimulates an urbanization, formations of large agglomerations with the centers in the cities-regions (McCann, P. & Acs, Z., 2011). However it is impossible to disprove the circumstance that in the conditions of globalization the deterioration in social and economic results is especially sharply demonstrated in large cities, causing migration and effect of Shrinking Cities (Martinez-Fernandez, 2012). Research results show that the effect of Shrinking Cities is characteristic of the cities with the population not over million people. In the conditions of globalization cities-regions become more and more attractive, increasing their competitive advantages. Million-strong cities have superiority over towns, but not always can't compete for human capital with cities-regions.

### 3. Conclusion

In the conditions of globalization large cities are a kind of engine of economic growth (Scott, 2010). As a rule, the most active and professional part of the population of the region lives in such cities. Residents of administrative centers are more mobile in making decisions to move due to job search, than rural inhabitants as they have an opportunity to get quality education in

the cities and gain income from their professional activity, but not from work in personal subsidiary farming.

This research disproves the opinion that in the countries with highly centralized authority, the government can't stimulate efficiency growth of local authorities (Beer & Clower, 2013).

Large cities will inevitably be in an epicenter of economic crises, especially in the conditions of globalization. However, some cities use crisis as an opportunity for future development, others weaken. The local government in this case has a major role. Calculations showed that municipalities are the most sensitive to crisis influence, to the measures taken by the government. The able-bodied population prefers to go to large cities like Moscow, St. Petersburg with higher level of living and developed infrastructure. Such tendency is characteristic of globalized economy as developed transport and communication technologies, an opportunity to use information resources on a global scale mean that countries depend on cities-regions more and more (McCann, P. & Acs, Z., 2011).

Globalization inevitably influences city economic structure, labor markets. At the same time the cities with a smaller number of population appear to get into difficult conditions when the most highly educated and able-bodied population moves to cities-regions, strengthening their potential and weakening economy of their city.

This research creates a basis for deeper studying a role of local government, results assessment of practical measures realization to create favorable conditions for business. The offered method can be used to compare a contribution of local authorities to create favorable working conditions in different branches. A lot of things depend on city authorities and in close interaction with regional government effective programs, plans for territories development, best candidates shortlisting were developed and realized.

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## TRENDS IN FACILITY MANAGEMENT IN THE GLOBALIZATION PROCESS

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**Abstract.** If globalization presents really a new and not reversible process that creates a more homogenous world, strategies of enterprises should appropriate to this phenomenon, too. European legislation has significantly contributed to the creation of the mutual market and increasing freedom of movement of services within the European Union. Its basic principle can be applied to harmonize the basic requirements for services and the subsequent normalization - the creation of common European standards. This also applies to the area of facility management, which is considered one of the most important services a significant contribution to the performance of companies in the European market. Facility management market in Europe can only guess, but the total volume of several billion euros clearly shows that this area is necessary to define and characterize in detail. Optimization application of facility management services is associated with extensive and clear understanding of interdependence processes of the organization and processes of facility management. This article evaluates principles, goals and purpose of use of facility management in society. In the theoretical part it define basic concepts of facility management, describes history and contemporaneousness of facility management and a trends of facility management in the globalization process.

**Keywords:** strategy, facility management, globaliziation process

**JEL Classification:** M151

### 1. Introduction

Definition of facility management in various professional publications worldwide occur broad definition of facility management but which are substantially similar. Up to the synergies offered by definition we get a better idea of this field. An example might be the definition of the British Association BIFM1 - Facility management is the integration of multidisciplinary activities in the built environment and management of their effect on humans and the workplace (Vyskočil, 2011).

By contrast, in Germany, facility management according to the Association GEFMA3 defined as follows - Analysis of the optimization of all cost-relevant processes related to building another building or business performance, which does not belong to the core business activities. (Tokarčíková, 2004).

In Slovakia, the facility management seen as a relatively young field, even though it was already 33 years ago in the US. This field was born out thanks to the propagation computers. Paradoxically, it was not due to their high computing performance, but simply because they existed in greater numbers. Their arrival had meant the installation of power and data

connections, as well as procurement additional office furniture. At that time not yet connections or tables, as those who had the computer still did not communicate with others. Then it became known that it would be good if there were departments in these types of activities provide. And so born the facility management. From the USA the facility management gradually spread around the world.

The most well known and largest organization of professionals interlinking of facility management is IFMA, which originated in the US and has members around the globe. Current associates and supports more than 23,000 members in 85 countries. Into their structures also include a Czech National Association. Partly a competitor but also a partner organization is EUROFI, which was founded in 1993 and brings together the major European operators. It is also a member of the Slovak Association of Facility Management (SAFM). Signification of facility management is confirmed by certification of sustainability (Cotts, 2010).

For the purposes of cross-border cooperation, but also between companies which require services and facility management companies that provide these services on the domestic market, was the need for clear definitions in this field. On the initiative of the Dutch normalizačného Institute in 2003 established a technical committee CEN / TC 348 Facility management, whose aim was to develop a European standard for facility management. The Commission has worked with national standardization institutions, which were also its members. The process of creating standards lasted three years. The standard was approved in September 2006. Slovak Institute technical standardization admitted the meaning of the Convention new standard status of a national standard, either by publication of an identical text translation under the title STN EN 15221 Facility Management.

Facility management is the management of support activities in the field of property management and maintenance, which gradually penetrates the consciousness of experts and specialists in the technical, economic as well as legal field. Facility management is in our country increasingly applied. Currently, the facility management developed in all European countries. In general, all public and private organizations in support of its primary activities using facility management services. Facility Management Company's ability to act proactively and meet all requirements by means of coordination of property and services using management skills and treatment of many changes in the environment (Thornton, K, 2015).

## **2. The essence of the Facility Management**

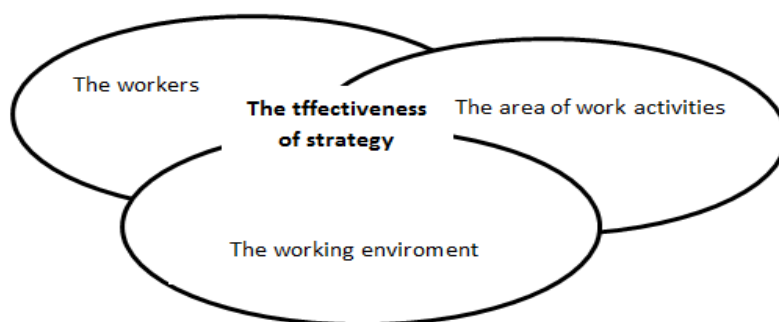
The nature of the facility management can be defined as follows:

"It is a method to align organizations working environment, workers and labor activity that incorporates the principles of business administration, architecture, humanities and technical sciences." (Vyskočil, 2011)

According to this definition it is facility management characterized by connecting the three areas, namely (Lepkova, 2015):

- the workers, Human Resources and sociological aspects,
- area of work activities, ie. the performance and funding.
- the working environment, ie. architecture and engineering.

Figure 1: "3P" of Facility management



Source: own processing

Figure 1 illustrates the "3P" in their interaction. Penetrating mentioned factors is the overall strategy of the company, which is affected but also a huge amount of external factors (Thornton, 2015).

It follows that the aim of facility management, as a discipline which optimizes all the processes in the company, it is effective to support the basic production process. It is therefore necessary to strengthen all the processes by which workers at their workplaces to perform best, and ultimately make a positive contribution to economic growth and overall success of the company. Very important is Process operation Workers Spaces process, Monitoring and analysis needs of workers, Know-how activities and their links, Monitoring and analysis needs space, the abilities of workers in the process of facility management, Optimal facility layout and links management know-how of their optimum support Technical support (Child, 2009).

### 3. The importance of facility management in practice

Facility management is in any business usually support activities. The exceptions are companies whose business is the provision of facility management services. The main aim of facility management in any business is to be optimal for the company in terms of costs, legislation, energy and thus create favorable conditions for the conduct of core activities. Based on a survey of the management of three production plants in Slovakia it can be concluded that the optimization of cost management through FM brings particular:

- Saving operating costs.
- Reduce space requirements,
- Strategic review,
- Accurate accounting and inventory systems,
- Splitting the rent and depreciation,
- Cost optimization,
- Optimizing expenditure.

In the case of the main subject of business is the management and maintenance of real estate, facility management itself, therefore, the company manages five basic areas in which implements (Vyskočil, 2011):

- Technical report,
- Property records,

- Central services,
- Administrative services,
- other services.

Technical administration manages the activities related to property and equipment, which are installed in the building. The aim of this report is to provide trouble-free operation of equipment and technology. This is for example. of gas, water, drainage, lighting, lifts, stacks, security and communication systems, fire safety etc. An important part of this area is energy management.

Property records list the property situation of a particular company. It keeps track of all movable and immovable property. Registration of the company's assets is a complex process that requires the report is completed and records its regular inspection according to the actual situation. Regular monitoring and analysis of the property is within the remit of the Facility Manager.

The subject of security is the central services complex activities that ensure the smooth running of the business activities of property. This includes for example: protection, reception, switchboard, cleaning, health and safety personnel, information technology and services, office services etc.

Administrative services are provided by all activities related to the administration. Includes managing the property as a whole, accounting, personnel management and contract management.

Part of its work as bill payments by tenants of the actual operating costs of real estate, billing and processing to accounting, record keeping customer-supplier invoices related to property management and maintenance, as well as drawing up the estimate of taxes and mandatory contributions. In the classic activities of administrative services it includes the monitoring of contracts with tenants, insurance policies, contracts to supply companies, including their designs. This activity currently includes the report in particular, monitor the composition of tenants, initiating rents and pursuit of those tenancies, records of individual spaces and of course archiving relevant documentation.

To other services may include the financing of equipment and facilities, equipment selection and external services, construction, reconstruction, removal, camping organizational rules and procedures, measurement and management of environmental quality, engineering etc.

The aim of facility management is to create maximum efficiency in the management of all activities of the company. It is therefore necessary to optimize their cost items. Management of these activities can be ensured in practice either internal format, then it is directed by own staff or through external. In this case we are talking about outsourcing. An enterprise may, in practice, choose a combination of these two methods, when we speak of partial facility management.

## 4. Conclusion

The security system company activities by facility management is in SR increasingly applied. Currently in our country there are various companies, which is one of the main activities or main activities being the property management and maintenance. These services may be provided through outsourcing to other companies or to manage the property they own themselves. Currently in Slovakia there is a lot of businesses that specialize in ensuring

comprehensive economic, operational and technical building management, maintenance, consulting and advisory services in the field of system management services for both residential homes and commercial buildings for nature.

Facility Manager represents what is its essence, what plays in society and the importance of what its partial or strategic goals. All these activities in favor of the company, which is engaged in providing comprehensive services to property management and maintenance is dependent on the quality of facility managers. Facility manager is regarded worldwide as a manager, who must combine in his own person a specialist with a wide array of knowledge. His skills and knowledge must extend to areas of technical, procedural, economic or ecological, and must also have an overview in the fields of human, psychological or even ethical. These must know enough to be a good partner for our clients. An important role is also played the manager sufficient experience and practice which provides him with a wealth of practical experience, since they need a day to show good judgment and estimation when solving often very complex linkages.

Based on structured interviews with management of two large enterprises in the SR it can be said that the biggest problem of outsourcing facility management see the underestimation of the time required for preparation of quality project in an underestimation of the cost of the completed project and subsequently in other projects linked to the organization. Prepare the documents for selection procedure and conclusion of the contract requires signified effort staff of organization of the customer.

Outsourcing, which provides a single provider is a strategic decision. Future service provider of facility management is gradually becoming one of the departments of its clients - the services of the Customer. Will work with confidential trade information organization. Its stability is essential for long-term success of the project.

It is now a question of using outsourcing as a facility management high on the agenda. The decision-making process requires a systemic approach, because only this way can ensure the smooth run operation of outsourcing in managing of buildings objects and achieve the goals primary demands of the organization.

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## THE NEWEST ECONOMIC POLICY, GOVERNMENT REGULATION OF THE ECONOMY AND ECONOMIC SECURITY

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**Abstract.** In the process of the formation of mass production and the creation of a modern market economy, industrial policy has played a leading role. Attempt to deny this fact at the state level during the process of economic policy construction is one of the reasons for the global economic crisis 2008-2010 years. Therefore, today the time to release the industrial policy from the shadows has come, which led to the concept of a new industrial policy. Today the economy has entered its post-industrial development phase when the services sector, insensible assets, etc. play an enormous role. All these result in a certain terminological confusion. Thus, some authors say that the industrial policy is outdated and discredited within the classical meaning. However, this point of view seems to be a bit incorrect. The fact is that in modern conditions the principles of plant placement changed, the geographic dispersion of plants increased and that resulted in an illusion that the industry made a small contribution to the economic well-being. Notwithstanding a huge role of insensible assets in the global economy industry keeps playing a leading role in the implementation of the economic policy of states.

**Keywords:** cultural brand of the city, globalization, the cultural value of the city brand, analytic hierarchy process, brand positioning

**JEL Classification:** E61, F62, L52

### 1. Introduction

Today, in the era of globalization and increasing competition, when the rules of the market are changing (Tokárová, 2015), in the developed countries raised the question of the revival of industrial policy once again. New challenges faced by developed countries: structural problems (a Neumann, 2015), the debt crisis (Ruščáková, 2015) wrong political decisions and incurred due to these adverse selection on markets (Dengov & Gregova, 2015), the need for subsidies to enterprises ( Matušová, 2015) challenges the effectiveness of the functioning of markets themselves (Valášková & Kramárová, 2015) requires a fundamentally new approach to industrial policy.

It is believed that the future - for an active industrial policy and active measures of the state regulation of the industry. This view is becoming more popular in academic circles (Chang, 2006), and among practitioners (Gregova & Dengov, 2015). The well-known economist Dani

Rodrik argues that in spite of the Washington Consensus, in fact, "put an end" to the state regulation of the industry, the most successful countries showing strong economic growth, actively used state regulation tools. (Rodrik, 2010)

State regulation of industry on the basis of a new industrial policy "actually can be defined as policies to support competitiveness" - as opposed to the state regulation of the industry on the basis of traditional industrial policy that was "focused primarily on the implementation of public projects and support the market position (and hence revenue) company-specific "priority" sectors". (Afontsev, 2010) It should be noted, however, that often the competitiveness is not supported by qualitative breakthrough, but rather because of "beggar neighbor policies". (Aikhoff, 2011) This exacerbates regional problems (Sochuláková, 2015) and leads to unfavorable results. This is especially clearly seen in the example of EU countries, especially those who are very active state regulation of the industry does not hold.

## **2. Industrial policy and its tools at the threshold of XXI century**

The concept of industrial policy were formed at a time when the industry in each country uniquely determined by its competitive edge in world markets. Currently, the economy entered a phase of postindustrial development, when a huge role has the nonmaterial, intangible assets, etc. All this implies a certain terminological confusion. Thus, a number of authors suggest that industrial policy is not relevant now and in the classic sense discredited. Thus, it is argued that industrial policy is very controversial, suffers from information problems and, ultimately, leads to a distortion of competition, restrict trade, and loss of wealth. Another author suggests that government intervention in the market mechanism can not be effective in principle. However, this point of view seems to be not entirely correct. The fact, that in the process of mass production and the creation of a modern market economy, industrial policy has played a leading role. In some ways it can be argued that the industry has formed a modern economy, and now it just has a significant impact on the global economy: an attempt to denial of this fact led to the global economic crisis in 2008- 2010 years. The fact is that under modern conditions the principles of the location of production have changed, increased geographic dispersion of the companies that created the illusion of a low contribution of industry to the economic well-being. There are demonstrative examples of the two EU countries: Greece and Slovakia.

The fact is that in modern conditions the principles of plant placement changed, the geographic dispersion of plants increased and that resulted in an illusion that the industry made a small contribution to the economic well-being.

Examples of two EU countries – Greece and Slovakia – are illustrative. Greece had its own industry, its own shipbuilding cluster, metallurgical industry and manufactured agricultural equipment and machines before it joined the European Union. When Greece joined the EU it refused its production area and switched to the area of services, first of all tourist services. For the most part the EU grants took the industry share in the GDP of Greece and that led to deplorable consequences for the economy and great demotivating effect for the population. The situation in Slovakia is different. In contrast to Greece Slovakia is an industrial country. The most developed sectors are as follows: metallurgical industry, power industry, machine building and petrochemical industry. But joining the EU led to the emergence of transnational companies on the Slovakian market. These companies are highly competitive in relation to Slovakian enterprises. The level of the innovative activity of Slovakian enterprises is low: it is higher in the EU countries than in Slovakia twice or thrice. That's why non-residents in Slovakia receive



income from the developed industry and the living in Slovakia (2009-2012) was significantly lower than in Greece.

The high value of industrial policy supported by the fact that the most stable position in the European Union took two groups of countries: first are those with a high share of industrial output in GDP (e.g. Germany, France, Norway), and secondly it is a micro countries (e.g. Monaco and Liechtenstein), mostly prosperous by attracting foreign capital and the implementation of various kinds of financial transactions, including those not quite legitimate.

So, what is industrial policy? There are several interpretations of the industrial policy. These interpretations are quite different. The two things that unite them - are that industrial policy is part of economic policy, and the fact that the object of industrial policy is industry.

The fact is that in modern conditions the principles of plant placement changed, the geographic dispersion of plants increased and that resulted in an illusion that the industry made a small contribution to the economic well-being.

Expansion and support of industrial productions is necessary as countries with a high share of high-tech industrial products of high-degree processing in GDP hold a stable position in the EU.

In whole one can make a conclusion that notwithstanding a huge role of insensible assets in the global economy industry keeps playing a leading role in the implementation of the economic policy of states and thereby the conclusion about the great role of the industrial policy in XXI century to which we came earlier can be confirmed.

Consequently, in order to minimize the above-mentioned negative characteristics and regulations and there is a need to rethink not only the place and role of state regulation of the industry in the economy, but also the very essence and nature of the regulation, which requires a radically new industrial policy.

### **3. The criteria for an effective industrial policy**

Currently, the economic conditions and the behavior of economic agents are changing at an alarming rate. Therefore, it is necessary to formulate the criteria to be met by an effective industrial policy:

- Industrial policy should be based on key factors of success of the country, forming its competitiveness. As Vladimir Kondratyev says "industrial policy the more successful, the more matches with the national competitive advantage." (Kondratyev, 2014) is indicative in this sense, the example of Finland, which after the collapse of the Soviet Union failed in large part to refocus its economy on global markets, and to become a leader in such industries as telecommunications, microelectronics and tourism.
- Industrial policy should be carried out, especially in those areas where the greatest extent of the State concerned. In the absence of clear public interest active industrial policy in this area is extremely difficult to carry out because of the existing government priorities and funding as a residual. As an example, various programs which were sent in the 1990s - 2000s in the development of the Far East. The program accepts, but little or no real effect is not given. (Rybakov, 2013)
- Industrial policies should aim not only to finance as the creation of the investment climate and support for fundamental projects (including through public-private partnerships). For example, much of the US space program is implemented through

public-private partnership that is much more effective and much cheaper than the allocation of funds to support the purely public projects. Moreover, such a policy can actively compete to develop and implement a greater number of promising areas.

- Industrial policy should not be based only on the perpetual incentive ("stick and the carrot policy"). Practice shows that the use of incentives only, and are not limited in time, leads to a rise in prices, the loss of competitiveness and the emergence of a huge number of inefficient projects.

But what is characterized by "newest" proactive industrial policy and state regulation of the industry based on it? Let's try to identify the main differences from its new industrial policy pursued in recent years. Proactive government regulation of industry (and economic policy built on this basis) is not the exclusive prerogative of Russia, and with certain reservations being introduced alongside industrialized countries (US, UK, some European Union countries, etc.). This industrial policy takes into account a variety of financial risks (Dengov & Melnikova, 2012, Dengov & Tulyakova, 2015) and is aimed at the use of modern financial models (Misankova and all., 2014). Note that the processes taking place in the economy are not typical for the state regulation in the framework of both traditional new industrial policies. Here are the basic differences between the "latest" pro-active industrial policies.

- Expansion of the industrial policy of the subjects under certain of its decentralization.
- One of the focuses of industrial policy is to create new jobs subject to sufficiently rigid migration policies and substantial changes in education policies. As notes L.S. Blyakhman, "The leading criterion for evaluating industrial policy along with a return on investment out of profits becomes a social result - the creation of new jobs, increased wages, the external effect (national health, education and culture), and improvement of the business climate." (Blyakhman, 2013)
- A number of industrialized countries have begun to "return" of the plants from Southeast Asia. Typically, competitiveness is achieved either through the use of new technologies, including in the field of quality control or through the development of outsourcing (e.g. in Germany is actively transferred to the countries of Southeast Asia costly engineering processes), or through innovation in work organization ("prison economy" in the US (Katasonov, 2012)).
- Focus on improving the global competitiveness of the national business through the active support of the state. For example, the Chinese government pays for advertising breakthrough of Chinese goods abroad, and the government is sponsoring a number of EU countries the supply of agricultural products outside the EU. Therefore, before the introduction of Russian sanctions interesting phenomenon was observed when the Finnish Valio butter in Russia cost is cheaper than in Finland.
- The latest industrial policy focused on the creation of new basic "rules of the game", and, in contrast to the traditional or new, intelligently combining direct and indirect effects.
- Transfer of industrial policy focus to "creative industries" for infrastructure projects and high-tech industries. Unfortunately, the concept of the "creative economy" by Richard Florida (Florida, 2003), as it turns out, is not entirely applicable to the present time.
- Integration with economic security. In the latest economic policy plays an important role integration policy and economic security: the formation of industrial policy and economic security strategy should go together. What is economic security in terms of economic policy? Academician L.I. Abalkin defines economic security as "state of the economic system, which allows it to develop rapidly, efficiently, and solve social

problems and in which the state has the ability to develop and implement an independent economic policy." (Abalkin, 1994)

#### 4. Conclusion

Over the past 30 years the approaches to the state regulation of the industry and its place have undergone significant changes in the implementation of economic policy. New global problems cannot solve the old ways. To do this, we must adopt a proactive government regulation of the industry (based on pro-active industrial policy), based on the synthesis of close government regulation of economic security concept that will allow us to respond to various global challenges.

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## GLOBAL AND LOCAL BRANDS CUSTOMER VALUE PERCEPTION AT RUSSIAN BEER MARKET

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**Abstract.** We investigated differences in consumer perception of the value of trade offer branded and non-branded goods on the example of beer. In the case of testing the branded shopping offers consumers see the packaging of the goods and knew the name of his brand (brand). When "blind" method of estimating the number of tasters consumer audience did not see the product packaging. For this reason, they did not see the visual attributes of the brand and did not know his name. On the basis of the research conclusion about the strength of the influence of the visual attributes of the brand in the assessment of its customer value. This force has both positive and negative effects on consumer evaluation. Another conclusion of the study was the appropriateness of accounting argument forces the visual attributes of the brand in the assessment of its customer value. This conclusion is important for practical categorization of trade deals in the consumer market and further price differentiation. Structural categorization of selling proposition is illustrated on the example of the Russian consumer market of beer. The authors conducted a structuring trade beer suggestions based on the principle of its authenticity. The whole set of beer brands in this case categorized into: authentic (beer produced in regions of the world) and not authentic (Russia).

**Keywords:** beer market, flavor characteristics, authenticity, categorization

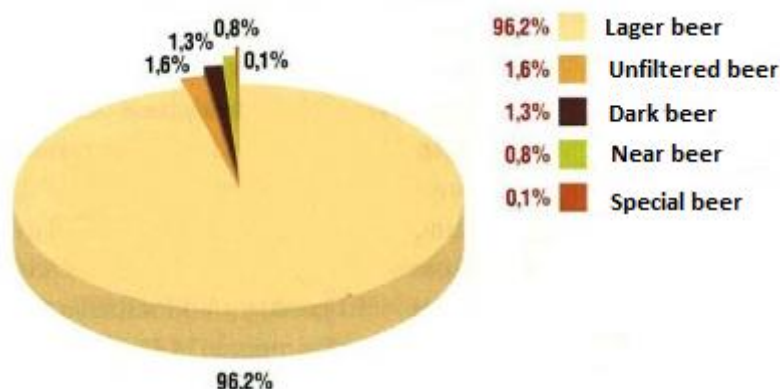
**JEL Classification:** L66, L81, M31, E14, E17, L15

### 1. Introduction

Beer is one of the most popular alcohol beverage not only in Russia but also all over the world. In recent years, even in small Russian towns were open beer bars, as a symbol of a new drinking culture and entertainment. Producers of beer also began to offers many varieties and types of beer for every taste and budget.

Russia enters to the top thirty countries in the world for beer consumption per capita. According to international comparisons in 2014 the first place won the Czech Republic, Germany and Austria, where the average per capita consumption amounted respectively for 131, 107 and 106 liters per person.

In 2014, the share of light filtered beer accounted for 96.2% of the total production (Figure 1). Shares of other beers accounted for less than 5%.

*Figure 1: Structure of the production of beer, %from total*

Domestic players dominate the Russian beer market, with domestic lager alone accounting for 33% of total beer sales by volume in 2010. Baltika PK OAO, one of the largest consumer goods production companies in Russia and Eastern Europe, was the 2010 leader in Russian beer sales. Baltika PK OAO joined the International Carlsberg group in April 2008, owns 89% of the company's shares, and operates ten facilities in Russian cities. Brewing companies are responding to the requirements of a changing market, looking to capitalize on the significant growth potential in the premium beer segment. Heineken entered a new segment of light beer, while Baltika has launched Eve, a beer targeted at female consumers, as well as a new draught variety. (Agarwal & Rao, 1996).

The main risk is that the beer industry in Russia is oligopolistic. The consolidation process on the Russian beer market has already finished. 85% of all beer market is divided by 5 largest companies. The rest 15% are occupied by regional breweries and small producers. Five-firm concentration ratio is about 85% which is considered to be high (the number falls into interval from 80% to 100%).

- Baltika – 39.1%
- InBev – 17.7%
- Heineken – 12.1%
- Efes Breweries International – 9.7%
- SabMiller – 7%

Nevertheless experts in beer market predict the only potential for new market entries is to be firstly in regions, not European part of country. For example, the beer market of Siberia is poorly developed and not saturated yet, unlike the central region market. Therefore the transnational companies are planning expansion to Siberian region.

In this research the author performs a consumer study of organoleptic characteristics using blind and open-tastings and physicochemical analysis of samples in order to differentiate the national beer market. Based on the results of consumer's survey two main categories were established: beer, produced in Russia (regardless of distribution size and licensing control), and beer, produced in authentic regions (traditional for particular brands places of origin). Another conclusion was the statement that blind tastings' results perform no opportunities for pricing differentiation at beer market so marketers need to produce added brand value (positioning, customizations, etc) in order to attract consumers.

The most popular brands of beer among young consumers are Holsten, Heineken, Miller and Tuborg with ethyl alcohol content from 4.6 to 6.0%. Over 50% of respondents prefer to buy

rather weak beers. Female audience mostly prefer beer with reduced alcohol content, while male consumers prefer beer with a high alcohol. 62% of respondents rather choose domestic producers. The most popular package for beer for the majority of respondents (66%) remains the standard 0.5-liter bottle.

As the criteria to be considered during beer purchase the price was more important characteristic for the elderly than for the young. On the basis of researches it is clear that more than half of residents over 18 years old are consumers of beer. About a third of the respondents drink beer no more than 1 to 2 times a month, another third - from time to time, which is about once every 1-2 weeks, the last consumers are a part of beer regular customers. The last kind of consumers produces maximal profit for beer sellers. This category is the main target audience of domestic beer products. (Chen & Samroengraja, 2000, Mohd et al., 2007, Pappu et al. 2005, Porral et al., 2013).

Analyzing previous surveys concerning beer consumers' descriptors we can noticed that the most important criteria for beer selection is its trademark (the answer of 40% of respondents), the next is the price of beer (36%) and its strength (16% of respondents). It should be noted that these selection criteria are equally important for both women and men. (Heymann, 1999, Huang et al., 2015, Keller, 1993).

However, such a criterion as price turned out to be more important for the representatives of maturity consumers rather than youth. Speaking about price differentiation we can mention that in Russia there is 4 main pricing groups: below 30 rubles per bottle (less than 0.5 USD, domestic low-cost producers), 30-50 rubles per bottle (about 1 USD, national and foreign beer produced in Russia), 50-100 rubles per bottle (1-2 USD, foreign beer from Western Europe) and more than 100 rubles per bottle (more than 2 USD, premium foreign original beer). Based on surveys we can see that 60% of customers in Russia prefer to buy beer in pricing range between 30 and 50 rubles per 0.5 liter. Beer in the price range up to 30 rubles is selected only by 4% of the respondents.

Summarizing it can be mentioned that beer market in Russia in general is extremely heterogeneous but still has a great potential. It can be caused by the low level of beer consumption in Russia in comparison with the world and European countries. The main consumers of beer are young people (under 35) who prefer low-alcohol drinks. According to various socio-demographic groups researches lager consumption is about 2-3 times more than dark beer consumption. The vast majority of customers pay attention to the brand of beer during beer selection. Only 23% of respondents buy high-alcohol level beers. Moreover 38% of respondents are guided by foreign manufacturers, but most of the respondents, namely 62%, prefer to buy beer produced domestically. More than half of respondents buy beer at the price from 30 to 50 rubles for a bottle. The findings of both cross-cultural research and controlled experiments indicate that the effects of alcohol on behaviour are primarily determined by social and cultural factors, rather than the chemical actions of ethanol. (Kiselev et al., 2014, Kiselev et al., 2014, Kiselev et al., 2016).

## **2. Beer consumers' demand descriptors analysis**

Analyzing the customers' behavior in terms of beer market the authors use two-dimension approach: blind-review of national and import beer and physicochemical analysis of beer. Study of organoleptic characteristics of national and foreign beer was based on taste, aroma and hop bitterness. These indicators have the most volatility (20% for hop bitterness, 17% for taste

and 15% for aroma) for the 30 beer samples presented in 4 categories: foreign produced import beer, national produced licensed import beer, national and regional beer (see Appendix 1).

For low level differentiation explanations study of the parameters characterized flavour beer samples which have a significant influence on the formation of these parameters (polyphenols, protein, including its three fractions A, B and C) were performed. For this purpose, beer samples of similar trademarks were subjected to comparative analysis for further exploration of differentiation level. Speaking about beer consumers' demand descriptors we can mention such strong stimulus as price, brand, taste and alcohol content.

Speaking about marketing descriptors (as price and brand) we can noticed that today a product chain has about 500 beer trade items in average and this fact can be the reason for fast-moving consumers goods (FMCG) and beer product authenticity lost. In general modern consumer can't remember more than 5-10 brand names in each product line so it can decrease the opportunity of new market entrances for new producers and goods. (Myers, 2003, Simon & Sullivan, 1993, Spagnoletti et al. 2013, Washburn & Plank, 2008, Yoo & Donthu, 2001, Zinkhan & Pereira, 1994).

The consequences of such losses can be expressed by buyer's failure from consumption of specific trademarks because of poorly differentiated by flavor characteristics and nutritional value, which ultimately leads to consumer indifference and lack of interest in the purchase of goods higher than the average level of prices.

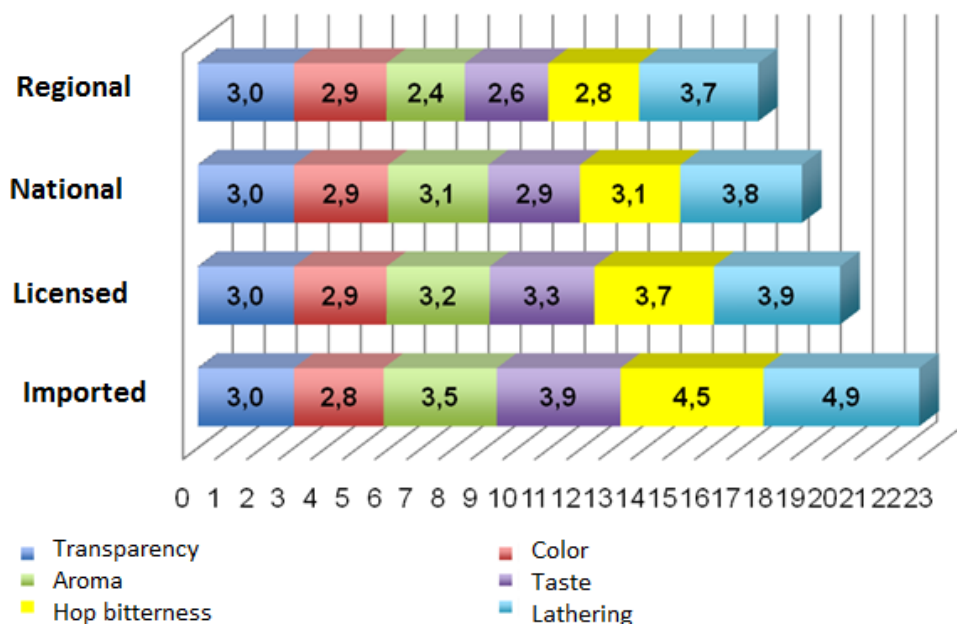
The way out from this problematic situation can be systematization of trade offer of homogeneous commodity groups by organoleptic categorizing of its articles. In order to systematize the commercial offer of beer in this study we investigated parameters as flavor characteristics and chemical parameters of samples produced by Russian and foreign breweries. During trade platform for study search the scope of distribution (local, regional, national, global, imported) were considered. 11 samples were subjected to analysis of beer (commodity products) in total (see Appendix 1).

The main methods of analysis of this study have been accepted as methods of sensory analysis ("blind" tastings and outdoor) for the traditional 25-point scale; physical and chemical analysis by conventional methods.

During open tasting participants from consumer panel had the necessary to identify the brand and the manufacturer of the sample of beer information, while during "blind method" this information was not available for them. Figure 3 shows a comparison chart of the total sensory evaluation of analyzed beer samples, classified in four categories according to the extent of the distribution obtained by "blind" tasting. As can be seen from the chart patterns of imported beer have an advantage over similar trademarks (+ 11%), produced under license on the Russian breweries, licensing trademarks - exceed the national (+ 5%), the national has the better results than regional (+ 6%).

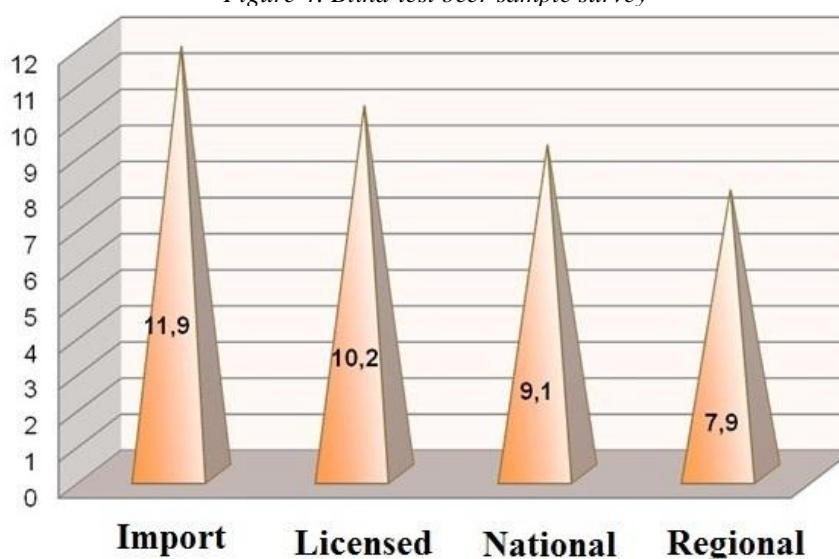


Figure 3: Total group sensory organoleptic evaluation



However, it should be noted that these advantages are an integral reflection of differences in the analyzed samples indicators: transparency, color, aroma, fullness and purity of taste, hop bitterness and foam. A comparison of each of these sensory indicators evaluation shows that volatility of some samples (its distinguishing feature) is minimal transparency 0%; color - 1.9%. In this connection it has a practical interest to achieve the objective of this study in comparison only on the organoleptic characteristics of those who have significant deviations in volatility terms: hop bitterness is 20%; the fullness and purity of taste - 17%; flavor - 15%. These three indicators characterizing flavor differences of the analyzed samples are shown in the diagram in Figure 4.

Figure 4: Blind-test beer sample survey



The tools of this diagram the differences between the categories analyzed samples of beer are as follows: imports exceed trademarks licensed by 14.3% (against 11% in the total sensory evaluation instruments); licensing, in turn, are superior national 10.8% (vs. 5%); national,

regional superior of 13.2% (vs. 6%). As can be seen, the comparison of the analyzed samples in terms of flavor characteristics provides a contrasting picture of differentiation.

For the purpose of categorizing trade offers beer by identifying the differences between trademarks Articles belonging to different consumers on essential parameters, which can be taken into account in the price of their differentiation in the retail sales, it is advisable to determine the values volatility analyzed parameters within each of the categories of differentiable.

The analysis showed that the "blind" tasting volatility indicators as the total sensory evaluation and assessment of flavor options, high and makes up for the imported beer  $21,1 \div 24,0$  points; for a license -  $19,1 \div 21,0$  points; for national -  $17,5 \div 20,2$  points; for regional -  $16,2 \div 18,8$  points. With such a high level volatility main indicator that provides the basis for the price differentiation in the retail trade, categorization, which is fair in terms of customers, it is not possible, because the borders are not allocated contrasting categories.

Based on the study it can be concluded that the impartial ("blind" tasting) analysis of the basic parameters of evaluating consumer beer price differentiation is not possible. To find this kind of opportunities in the study carried out a similar assessment as samples by an open tasting, in which consumers have the ability to identify patterns by brand, producers and others.

### 3. Conclusion

Comparative blind-test performed at Central Russian region shows that customers evaluate import beer higher than national and even licensed domestic produced beer. Among these samples assessments distributed in such proportions: Velkopopovicky Kozel (37%), Heineken (30%), Stella Artois (12%). As for the results of chemical analysis we can see that foreign beer has less concentration of polyphenols than domestic produced. For example for Heineken brand the value of this indicator in a sample of licensed produced beer by 69% higher than for the imported beer. Similar observation was made for a Stella Artois trademark (69%). Another word we can state that Russian produced beer is worse than imported beer even using licensed technologies of beer production. In general, pilot study found a negative correlation between the analyzed indicators and the amount of points for the characteristic flavor of beer ( $r = -0,53$ ).

Another important chemical indicator tested in current exploration is concentration of protein fractions. Speaking about general indicator we can see the same results (56% for Velkopopovicky Kozel, 39% for Heineken and 8% for Stella Artois).

In the second part of the experiment the same measurements were made for the four samples of beer under the Zhigulevskoye brand. This tests show that Russian domestic and regional beer brands have the same high concentration of polyphenols and proteins as Russian produced foreign beer. This observation is the basis to affirm the hypothesis about the low quality of the original malt and unmalted high proportion of raw materials, which is the source of a high content of these fractions in samples of beer with underestimation of flavor options.

Based on studies of similar parameters analyzed samples of beer within a brand image can make the general conclusion that the beer produced by foreign enterprises is compared to the same beer, produced by the Russian enterprise licenses, significant advantages are not lost, even with a significant increase the length of the supply chain in the transportation of bottled beer over long distances. These benefits are generated through use in the manufacture of beer of authentic raw materials and processing methods, which resulted in the formation of flavor

compounds that meet consumers' expectations. It is these parameters flavors create the possibility and feasibility of price differentiation between imported and licensed beer.

For licensed beer brands, these requirements are not strictly required that translates real flavor characteristics of such drinks in the category of high uncertainty.

On the basis of all stages of the research we consider it appropriate categorization trade offer beer on the Russian consumer market into two distinct categories: beer produced in Russia (regardless of the size distribution and license monitoring) and produced in authentic (traditional for a particular brand image of origin) regions.

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## DEVELOPMENT OF CORPORATE STANDARDS PLANNING IN CONDITIONS OF GLOBALIZATION

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**Abstract.** The process of globalization as evidenced by increasing volumes and rates of capital movement, growth of the dynamic of the market transactions, and the possibility of the production and sale of goods in various regional markets, complicates the procedure of corporate planning. An increase in the effectiveness of the planning process can be achieved through the adoption of corporate planning standards, which would be used as a reference guide that describes the management processes, instruments and methods used to manage the organization with the goal of achieving a successful result. In the world practice of management there are known examples of management systems' standards; for instance, ISO-9000, which is used for systems of quality control, and ISO-14000, which regulates requirements for the ecological management. The analogous and all-encompassing standards for the systems of corporate planning do not exist. The current International standards of business planning and the International planning standards of production processes MRP/ERP do not provide streamlined solutions to multi-faceted problems, although they do provide an acceptably high degree of effectiveness within the scopes of set problems. Admittedly, it is worth to consider drawing up standards that, on the one hand, provide the most meaningful recommendations for the development of an appropriate management system, and on the other hand, give freedom to each particular organization to develop its own adapted planning systems.

**Keywords:** planning, corporate planning standards

**JEL Classification:** O21

### 1. Introduction

Globalization and increasing international competition leads to the lack of domestic market for domestic firms, thereby intensifying the process of internationalization of the economy (Castaño et al., 2016). Entry of companies into the international market makes it necessary not only to develop an appropriate project, but also requires the company to take into consideration new factors, when making management decisions in operating activities. This leads to the fact that the operating environment becomes more complex and almost loses the ability to control the companies only on the basis of intuitive or based on experience management solutions. Full coverage of all influencing factors can be carried out using techniques and planning tools.

Considering the fact that planning is a procedure that is quite difficult to perform, and it is due to both objective and subjective factors, many enterprises significantly simplify the

procedures or make a lot of mistakes. To increase the level and quality of the planning the establishment of some universal rules, for example, such as the standards planning should be considered.

## **2. The use of planning standards for management problems solution in conditions of globalization**

The processes of globalization in the second decade of the XXI century reached unexpectedly large proportions, in varying degrees, encompassing almost all the developed countries of the world. This makes the researchers face the tasks associated with the search and development of modern views on the economy and methods of management of organizations corresponding to it. (Temiz et al., 2016; Qiu & Zhou, 2013; Efrat & Shoham, 2012; Dmitrijeva & Batraga, 2012). Globalization creates conditions under which national economies of the countries become interdependent, at the same time external factors become more large-scale and exert more considerable impact on economy of firms. Besides, globalization leads to an imbalance between opportunities of market regulation and its necessary level.

Current – almost initial – stage of the development of globalization makes effective management very difficult to the companies in situations when departments are located in different countries and are oriented to management, planning, production, etc. from the standpoint of their own experience and national peculiarities and mentality that considerably complicates all management processes. Companies are forced to make substantial efforts to form a unified approach to business, which leads to additional costs. In addition, there may be certain difficulties in case of separate directions of business sale to other companies which also have own view of implementation of managerial functions and processes.

Large companies, taking into consideration the scale of their activities, are forced to carry out planning, including strategic planning, or being limited only to tactical. In addition, each company develops its own corporate standard of planning, relying on industry characteristics, organization structure, its' own experience, peculiarities of the staff, etc. However, this can lead to a loss of flexibility and adaptability in case of a situation change, including the processes of globalization. It should be noted that the quality of plan development varies significantly: some companies develop complete plans, others take their planning to the formal procedures and are often limited by a sales plan (Fletcher & Harris, 2002). Observations show that the organizations of a small and medium format practically don't involve planning in management process. It is caused by such factors as:

- burdensome costs on collection and analysis of information. Sufficient amount of information can be collected, but the limiting factor is transaction costs, part of which are the costs of market analysis and information search, consultants payment, etc.
- complexity of development of intra-corporate standards of planning. Development of standards and a planning system in the organizations requires considerable finance and intellectual costs which can turn out beyond companies with the small budget strength;
- belittling of a role of planning, desire to work intuitively, without knowledge of types and types of planning. It is caused by lack of due knowledge of planning bases and misunderstanding of the fact that implementation of optimum amount planning, significantly allows to save resources of the company.

Both small and large companies, while planning implementation face implementation of the planning face international and national socio-economic instability that makes it difficult to

compile reasonable forecasts of industries and markets development and, consequently, leads to the impossibility of realistic plan development. At the same time already developed plans on early stages of their implementation begin to be exposed to substantial changes and by the end of the plan period, the actual results differ materially from the plans. This leads to the failure of companies to conduct planning, the cost of which is no longer justified.

In case of organization activity research (Russian Federation) the mistakes, most characteristic of a present situation, made by a management during planning activities were revealed. The following types of errors were identified: planning with incorrect aim statement, planning on the basis of incomplete data, non-system planning, planning without taking into account previous experience, planning without considering resource availability, planning without motivation, planning with sub-optimal itemization, planning without effective control, planning templates (Popov et al., 2016).

Specialist in planning, while evaluating relevant information, can sufficiently clear, without further investigation determine, violation of which principles of planning or incorrect use of which methods led to the emergence of these errors. The question naturally arises of whether there are enough relevant elements of the planning of science in management more thoroughly learned and used to prevent the occurrence of such errors?

All this raises a question that there must be some standards for the implementation of planning, which, on the one hand, would facilitate the search for answers to such questions as "Whether all is done?" and "Whether all is done correct from the point of view of planning technology?". On the other hand, they would have established some reasonable framework for the implementation of planned activities, allowing them not to perform unnecessary amount of work when planning.

A good example of such standards are International standards used in the creation of quality management systems ISO-9000, where managers are given information about the principles of quality management and recommendations for establishing appropriate management systems.

It should be clarified that proposed for development standards of planning should not have the status of binding in any situation. Their main aim should be the formation of the benchmarks to assess the correctness of organization and implementation of planned activities in enterprises of different size and profile.

It should be noted that nowadays there are several standards related to the planning activities of enterprises. They can be divided into two groups. One consists of standards of business planning (EBRD, KPMG, UNIDO and Tacis). These standards define the structure and content of business plan sections, which, however, is not always submitted by enterprises and organizations, and therefore does not fully solve improving efficiency of regular planning problems. Another group of standards (ERP, MRP) includes standards of implementation mainly of productive activity of the industrial enterprises and are realized mainly through the use of appropriate, individualized and usually expensive software. Thus, the use of standards in this group also does not cover all managerial aspects of planning (Mukwasi & Seymour, 2012).

Speaking about the structure of planning standards firstly we should indicate the need of the following relevant planning principles. Numerous principles are already used in planning, some of them were formulated more than hundred years ago by H. Fayol. The remaining principles were added during planning science development. However, on the basis of the study, mentioned above, as well as observing of various organization activities, it may be worthwhile to raise a question about necessity in new development principles.

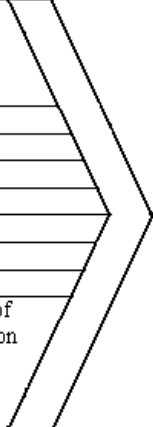
For example, they can talk about the advisability of considering the introduction of such planning principle, as principle of adequacy of information. This is a very important requirement to ensure the effective planning, both from the point of view of availability of sufficient information at the stage of development plans, and at the stage of their implementation, since any planning document is a source of information for the respective managers and must contain the optimum amount of information. Additionally pay attention to the fact that the conversation is not about maximum completeness of the information, but only about its quantity, sufficient for decision-making.

It is also possible to speak about expediency of introduction of orientation on benefits of buyers principle. It means not consumer characteristics of goods and services, what the marketing do and not quality characteristics of the goods, on what quality management are focused. We are talking about the economic benefits for customers, who are ensured by observance of terms of manufacture and delivery required, lot size and cost reduction of customers by reducing its costs.

The planning process model obviously shall become the central position of planning standards. ISO-9000 uses a PDCA cycle as this model. It is obvious that in reality the quality management process isn't as simple as these four stages and involves a more detailed partition at each stage. By analogy in the standards offered to development the integrated planning model can be also provided, one of possible options is given on figure 1.

Figure 1: Model planning process

<i>The result of the planning stage</i>	Information for decision-making	The strategic plans of units	The tactical plans of units	The operational plans of units	The user of the implementation of plans (schedules)	The figures obtained
<b>Functional plans</b>						
Marketing						
Production						
Innovative						
Organizational						
Risky						
Financial						
<b>The stages of the planning process</b>	The collection and analysis of data	The choice of strategy and development of strategic plans	Development of tactical plans	Development of operational plans	Implementation of plans	Monitoring of implementation of plans



This model does not demonstrate a fundamentally new approach to the implementation of the planning process or system plans of the organization. Its' main task in the present subject is indication of the main planning stages that have to be implemented to enable the corresponding effect. However, the performance of the planning process in this form has several advantages.

First, it is flexible enough that, while maintaining the overall shape of the planning process for any situation, there is a possibility to change the composition of existing units. For example, if it is necessary, the company may allocate part of the production plan components such as logistics modernization plan, hosting plan, production plan, quality plan, logistics etc. In order to any company could carry out such actions in the proposed standard possible components of each type and kind of plans should be clearly described. Selection from the corresponding list can be implemented by companies based on their current needs. Therefore, a standard should be developed so implementation of its elements had sufficient autonomy that will allow organizations of various shapes, sizes and industries to use this standard with a high degree of adaptation. The exception may be companies focused only on the implementation of projects.



Second, the arrangement of various plans within a single model allows more clearly to see the degree of correlation between the plans, confirming a sufficient degree of conformity between plans or identifying existing contradictions. So the company management can identify the discrepancy of tactical or operational sales plans and volume output.

The fields of representing matrix should reflect corresponding results of the planning stages. For example, at the stage of data collection and analysis, the corresponding field should correspond to information for decision making marketing, production, organizational, risk and financial plans. If we consider the example of a specific cell, in the field of strategic planning marketing strategy must be submitted which would ensure the choice of product and market segment, giving an advantage over competitors and leading to better economic outcomes in the implementation of the company's products.

Although the proposed standard will clearly identify the contents of each field of the matrix, of course, the immediate solution for each field will depend on the specifics of the company and its activities in a given market. Once again, paying attention to the fact that this model is not sufficiently rigid, and allows to change the composition of the planning stages and a set of functional plans as upward and downward.

Given the fact that the proposed for the development standard refers to the planning process, it is appropriate to raise the question of whether this procedure should be based on a process approach. It is known to experts in the field of management in the areas of management science as management, business processes, organization and standards for quality management system ISO-9000.

It is obvious that here we can talk about the availability of inputs at each planning stage: at the stage of data collection and analysis – this is, for example, information from the external and internal environment of the company; at the stage of plans implementation that will already be products or services produced by the company, etc. An exit for a stage of plans implementation control will be data on the basis of which intermediate and final results of activities will be estimated and decisions concerning adjustment of plans of the company for future planning periods will be made.

Accordingly, on the basis of the outputs of the previous stage will form inputs for subsequent phases will be formed. Providing quality outputs at each stage of planning, as it should be when using the process approach will determine the quality of the inputs necessary for the proper and efficient discharge of the following stages.

As control procedures will be methods of collection and analysis of information, implementation of planned activities, implementation of plans and procedures monitoring results and management decisions of managers responsible for each of the planning stages.

Various components act as infrastructure for implementation of planning process for each stage. So the stage of collection and data analysis requires availability in the company of decisions support system based on service of collection and information analysis, necessary for acceptance of management decisions. For stages of strategic, tactical and operational planning as required infrastructure are used services or certain managers performing the corresponding functions and who are responsible for plan development. For a stage of plans implementation it is mainly production and logistic infrastructure of the company. At a stage of plans control implementation by providing infrastructure will be different measuring and calculating tools by means of which the company will obtain the information required about results of the activities.

It can be considered that systematic approach is also relevant to the analyzed standards. Confirmation of this, first of all, is that in the companies not separate plans are developed, but interconnected system plans of various types and kinds. Also it is possible to speak about need of system approach from a line item of already existing principles of unity and complexity of planning. Last principle requires to take into account the availability of all systems existing in the company.

A very significant role in the implementation of organization plans is documentation of relevant quantitative and qualitative indicators of the planned activities. Not every leader who's responsibilities include the implementation of the planned activities sufficient to imagine the structure of planning documents of every type and kind. In this regard, the proposed development standards should contain the appropriate Advisory guidelines, based on which you can create activities tailored to organization-specific planning documents.

At the same time, mechanisms and requirements for regulation of relevant planning documents, which may prescribed management activities planning stage, the inputs and outputs of each stage, efforts to transform inputs into outputs, resources for the implementation phase of both can be offered.

Full work of planned system is impossible without existence of original data on the basis of which plans of the organization are formed and corrected in the course of performance. The corresponding system of information support which would provide collection of necessary information, as from the internal and external environment of the organization shall be developed for this purpose and put into operation.

As it has been mentioned above, it can be created on the principles of decision support system and include systems of data, models and system of interaction with the user. Such a system may contain information about results of activity over the past plan periods, and a set of tools for processing and analysis of information.

Collecting of external information can be achieved by conducting marketing research and strategic analysis that will reduce all types of costs in the operation of the subsystem. Collecting of internal information should be carried out through the implementation of control procedures. Naturally, the essence of control indicators is an innovation in the field of planning, but there should be a question about the approaches to select the most significant indicators subject to monitoring, and the development of procedures for the collection and processing of relevant information. The amount of collected within the organization information, as mentioned above, should be sufficient. But for each organization, the question arises about which parameters to include in the list of monitored to ensure adequacy and avoid redundancy, leading to increased costs of the procedure. This subject is most urgent taking into account periodically arising offers on review of the importance of separate indicators for effective management of business.

It is at least important also to determine with procedures of collection of information that implies the decision concerning the one who and at what stage shall collect this or that information and in what form it shall be presented to provide tasks of effective control and improvement of work as planning systems, to the organization in general.

To ensure the effective work of the organization it is necessary to provide guidelines for the evaluation of performance and most of the planned system. This can be a treatments in the form of audits (primarily domestic), and of different kind of rating that allows to assess the weak points of the system that require the most management attention. An important indicator of the

effective functioning of a planning stage should be at which stage it allowed the most errors leading to the development of inaccurate, inefficient, or infeasible plans.

### 3. Conclusion

Management problem resolution in conditions of globalization, connected with complication of companies environment functioning, substantially can be provided due to increase in level and quality of planning. Planning problems caused as by the lack of knowledge and skills, and also by the complexity of the process can be largely solved through the development of universal standards of planning, similar to, for example, the ISO series standards. Proposed standards should include new planning principles, universal model of planning process, requirements-based planning process and system approaches as well as regulation procedures for documenting and collecting necessary information. It is important to observe the principle of autonomy of standard elements to improve the adaptability of its use.

The main result of the development of such standards should be a unified approach to implementation of planning that will allow fully coordinate the planning processes of the departments by the companies and increase the efficiency of interaction between them.

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## SCIENTOMETRIC EVALUATION OF VISUAL SOLUTIONS FOR BRANDING

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**Abstract.** To evaluate the effectiveness of visual communication in branding Universities, as well as to build their competitive advantages should be used scientometric methods. These methods make an analytical assessment of the effectiveness of graphic visual communication solutions in the area of quantitative research and provide an opportunity for developers to objectively compare different options. Such methods may be useful in assessing the competitive advantages of brands, provided by various objects of visual communications. One of the methodological approaches that have practical applications, can be Trakking Eye. This method is based on the "trace data" consumer experience of respondents (trace analysis). By means of digital hardware is fixed and quantified trace of what and how much time watching the respondents. These results are subject to statistical evaluation. The conclusions drawn from this study are objective and act as arguments in the development of marketing solutions. According to the results of the study authors form a quantitative assessment of the following graphics show the respondents. The results of research on the effectiveness of graphic solutions new logo Plekhanov Russian University of Economics in comparison with well-known logos of competing Russian universities, training students in economics profession. The conclusions about the strengths and weaknesses of the new graphics solutions, outlined ways of using the new logo for the correct positioning of the University analyzed.

**Keywords:** performance measurement, visual communication, corporate branding, competitive advantages, trace analysis, eye tracking

**JEL Classification:** M37, M31

### 1. Introduction

Evaluation of graphical decisions efficiency is traditionally based on C.J. Werkman decision about 5 core elements of "effective brand building": color, font, scale of basic elements, advertising image and a brief slogan. Modern researchers measure the performance of graphics solutions for visual corporate branding communications by these metrics measure. But at the same time, each of the descriptors of brand effectiveness cannot be measured uniquely for solving optimization problems of visual solutions.

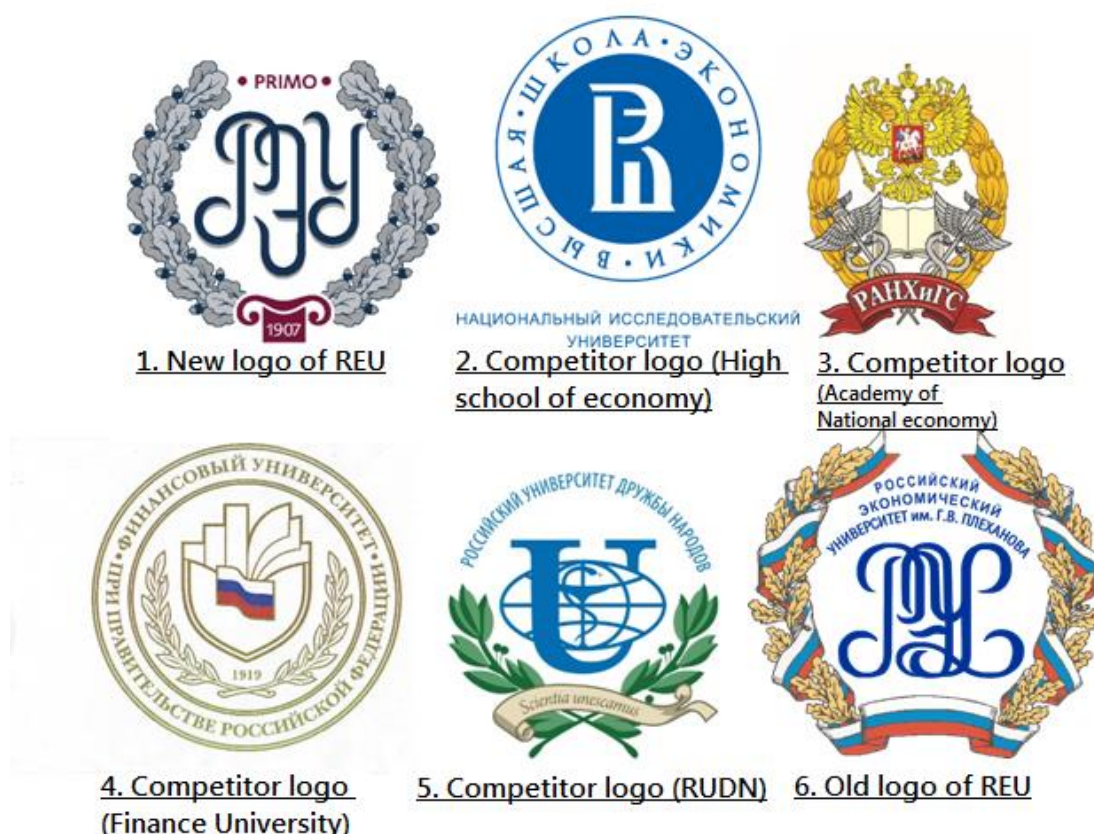
This raises the expediency of search of other ways to measure the effectiveness, among which are promising scientometric, including the measure "trace data" respondents (trace analysis). (Werkman, 1974, Malhotra, 2010). Trace information analysis can be performed as data collection on the basis of physical signs or evidence of past events. These signs or evidence, are left inadvertently respondents that protects researchers from intentional expression. Methods of measurement at the same time can be sufficiently formalized to achieve the required validity. For this research the authors use the method of is Eye Tracking analysis, providing objective data on where and how much respondents look. (Ruddell & Unrau, 2008). The main tool in this method of measurement is the device (eye tracker), which recognizes and records the coordinates of the pupil and eye movements. The device can be worn on the head or stationary, which is located in front of the monitor screen. In accordance with the regulations of J. Nielsen and TK Landauer (J. Nielsen, T.K. Landauer, 1993) for this kind of research is determined by the number of respondents from 5 to 15 people. (Thomson, 2016). In the described study, the value of this indicator was limited to the minimum number of 5 people.

Measurements in this study were subjected to the visual characteristics of the new logo of Russian Economic University named after Plekhanov (Figure 1) in comparison with the existing (Figure 6), as well as the logos of other universities - the nearest competitor (Figures 2 ÷ 5).

Hypothetically, it was assumed that the disadvantages of the logo (see Figure 6) are:

- Seal of the font solution;
- Presence of state symbol as 3-colors tape.

*Figure 1: List of analysed logotypes*



Both marked were lack eliminated at the new graphical logo. In addition, in accordance with the University brand platform the new logo used additional elements: capital Ionic columns, is the archetype of the long history of higher education and toiletries of University to the universal values and slogan “Primo”, symbolizing its primacy in the educational community as "the first economic", as reported previously. (Trigoni, 2016, Drori et al., 2016).

## 2. Eye-tracking analysis of visual elements of logo's

To solve the tasks of the research, respondents were asked to consider the logos in pairs to answer the question to them: "What a logo like the most and why?". Time to explore the respondents for each of the three logos presented the researchers did not limit. After inspecting a specific logo respondents changed their own logo image. Thus, each of the respondents had the opportunity to spend a viewing of logos as much time as necessary.

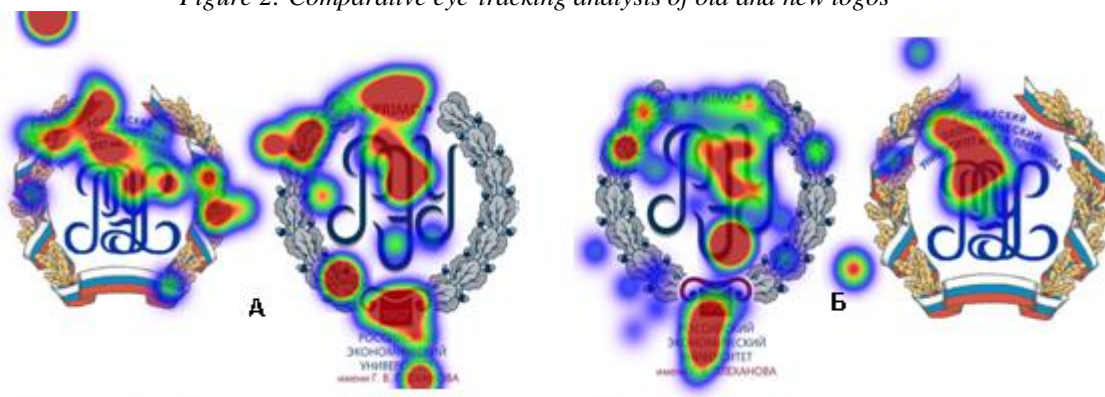
The direction of view and the time spent on the inspection of the individual image elements were hardware-metrically recorded by the software installed permanently in front of the monitors. This eye tracking device automatically records the parallel coordinates of the two pupils through calibration markers.

Following the hypothesis of Justa and Carpentier (Just, MA & Carpenter, PA, 1976-1980) about association of visual and mental systems, "there is no significant difference between, on what fixes his gaze people and the fact that he is trying to understand," believed in this study that recording visual fixation on the axes and the length of time, you can get measurable results showing the traces of the cognitive process. This process, in general, according to this theory, coincides in location and length of time allocated to the analyzed image elements impaired mental respondents with activity. (Albert & Whetten, 1985, Aula & Tienari, 2011).

To illustrate the results of the experiment oculogram reflected in Figures 7-10 are shown. This Figures reflects the resulting position on the monitor look respondents fixation points and the total time of the attention on the essential elements of individual logos while viewing each of the analyzed images.

To evaluate the effectiveness of graphics solutions used in the development of traditional and new REU logos, the materiality of the pairwise arrangement of images were taken into account. To eliminate the influence of this aspect on the result of the experiment, respondents were presented in pairs with versatile image location analyzed logo (current logo on the right (B) and the left (A) in the paired images).

Figure 2: Comparative eye-tracking analysis of old and new logos





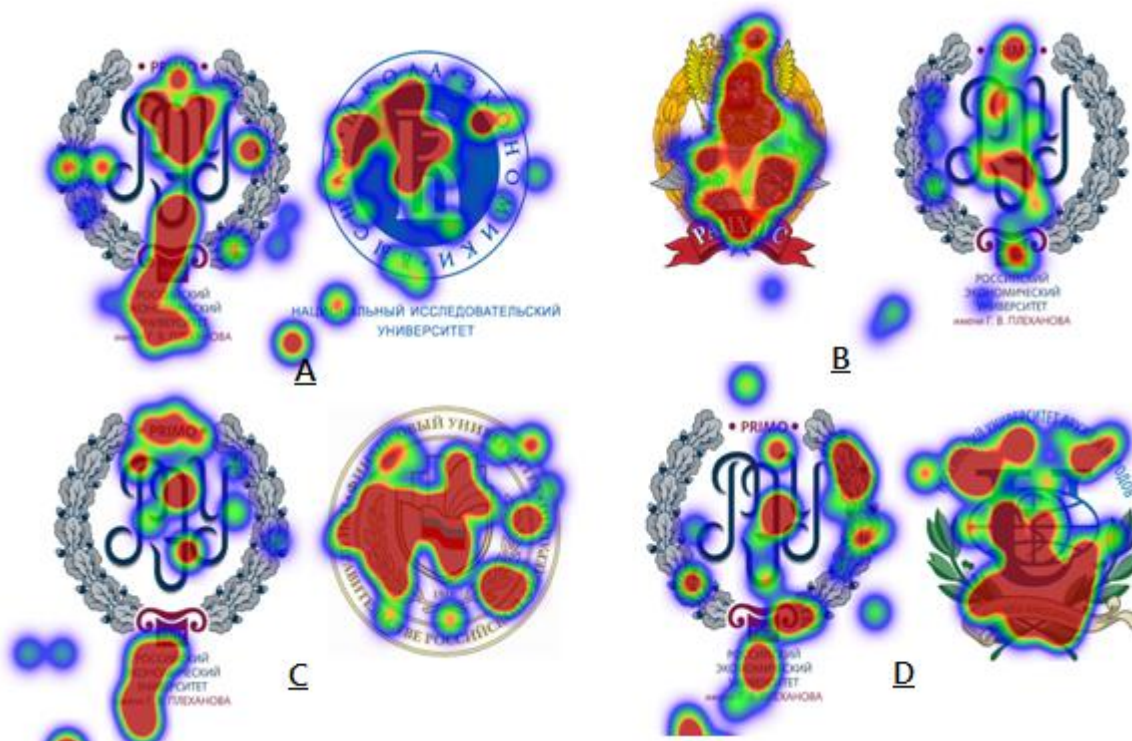
As seen from the image in Figure 2, irrespective of the location of the pair at their logo representation, a new logo favorably in terms of conventional length of time during which the respondents see it. Time attention to the image indicated on oculogram area and color fixation spots. The more performance variables spot area and wavelength, the more closely the respondents consider the elements of the image. Spots of bright red color (with a wavelength  $\lambda = 620 \div 780 \text{ nm}$  [9]) suggest more attention to the respondents view the image in comparison with spots purple color ( $\lambda = 380 \div 450 \text{ nm}$ ). (David, 2007, Czarniawska, 1997).

It should be noted that the study was conducted among respondents who are familiar with the traditional logo only superficially. In this context, they are identical in both logos degree of novelty. (Gioia et al., 2014, Gioia et al., 2013, Just, 1980).

The visual attraction (visual power of graphic solutions logo) certainly causes two graphic elements: the acronym "REU" and the slogan "PRIMO". These elements are characterized by a 100% attraction of attention of the respondents. In addition, considerable visual activity and possess other important elements of the new logo: 1907 - the year of foundation of the University, as well as oak leaves and acorns. (Just, 1976, Kiselev et al., 2008).

Comparative eye-tracking analysis of universities competitors logos are shown in Figure 3. This figure shows the oculogram for competing universities logos in pairs: A - with the HSE, B - with Academy of National Economy, C - with the Financial University, D - with RUDN. Competitive advantage of the new logo for the analyzed indicators RG visual attraction (forces) graphic logos solutions can be evaluated properly listed below.

Figure 3: Eye-tracking analysis of competitive Universities vs new logo



A. In relation to the logo of "Higher School of Economics" the visual indicator of logo strength for REU is higher than for a competitor. The competitive advantages at the same time have all seven of visual symbols of new logo. (Kiselev, 2008, Nielsen, 1993).



B. In relation to the logo of the Academy of National Economy considerable visual appeal of it, which is provided by the archetypal characters of the Russian Empire, the city of Moscow, as well as well-known mythology characters? These elements of graphic design give the effect of "gray" information noise, which detracts from the acronym, which is the identifying element of the graphical solution of the logo. Against this background, the new logo respondents RG provide a splendid opportunity to "rest" a look at 6 of 7 significant graphic elements. The exception is the element with the inscription: "The Russian Economic University".

C. In relation to the logo of the Financial University the respondents think the logo is fixed mainly on the Russian tricolor flag and to a lesser extent in the laurel branches. At the same time the main element of the corporate identity, reflecting the name of the institution, is ignored. Against this background, logo of REU wins, drawing glances from the 6th and 7th of significant visual symbols. It remains unnoticed only capital Ionic columns.

D. In relation to the logo of the RUDN is sustained competition on the visual power of the graphic logo with REU. At the same time, we note that most of the time examining this logo respondent researched look strange to them Latin saying «Scientia unescamus» (lat. Knowledge Unite).

### 3. Conclusion

Summarizing the results of this study, we can say with great confidence that the new logo of REU is expedient to recommend to the communication activities of the University's internal and external channels. Competitive advantages of the graphical solutions confirmed by the results of this study in comparison with the existing currently the University's logo, with the logos of the analyzed universities competing. It's essential visual elements attract the active attention of the young respondents in a competitive environment.

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## MEASUREMENT OF LABOR PRODUCTIVITY IN ECONOMIC SYSTEMS IN THE CONTEXT OF GLOBAL CHALLENGES

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**Abstract.** The article analyses some methods of measuring and assessment of labor productivity in the economic systems and the results of practical application in the implementation of labor productivity development programs. Selection of time indicators for variable volumes of production and factor costs determines the level and dynamics of the displayed productivity. Many countries try to create the optimal database for qualitative analysis of the dynamics of labor productivity. The system of measurement and assessment of labor productivity should be applicable for comparison of this indicator in different countries and for decision-making to provide the economic growth and prosperity of the country in the context of global challenges. In comparison with the developed countries, in Russia the level of labor productivity is unacceptably low. Russia – with a large number of working hours a year – has rather poor performance indexes in terms of hourly wages. We consider the example of the program of development of labor productivity in the Republic of Tatarstan. Databases which accumulate the necessary information for the analysis of labor productivity were created in the process of this work. Comprehensive study of mechanical engineering and petrochemical sectors in the republic revealed the main obstacles for the productivity development – management and organization of production processes, personnel, equipment and assets.

**Keywords:** labor productivity, labor costs, productivity database, aggregate productivity

**JEL Classification:** J24, O47

### 1. Introduction

In the economic system the labor productivity is considered as a significant factor of competitiveness of the economy and as the basis for the economic growth and the welfare of the country. In the context of global challenges increase of labor productivity becomes the key to the growth of the companies' revenue, it allows them to remain profitable, to strengthen their competitive position in the market.

Calculation of labor productivity is used in the management process of the country, as well as the company. In the last three decades the concept of labor productivity has been reconsidered but still there are problems of methodology and practice of its measurement. International and national organizations, as well as labor productivity centers set up in many

countries use different methods of measurement of this parameter. Presence of a sufficiently large number of methods of productivity measurement leads to the fact that every method gives its own result. Formed databases of labor productivity show the different dynamics of labor productivity growth which require further comparison and determination of correlation between them.

The works of many outstanding scientists are devoted to fundamental aspects of the performance and productivity, but it is necessary to give prominence to the works of P. Drucker, T. Peters, J. Kendrick, J. Hicks (Drucker, 1974; Bourlès & Cette, 2007; Kendrick, 1997). The method that allows to create the systems of performance measurement and that meets the specific character of the activities of the organization and the objectives of the analysis was offered in the studies of D.S. Sink (Sink, 1985). W. Nordhaus analyzes various approaches to labor productivity measurements that differ from the standard measures and determines the reasons of differences in productivity growth rates (Nordhaus, 2002).

In Russia the minor labor productivity rates are not calculated at the macro level. Rosstat publishes the chain productivity growth rates for several years. Non-governmental organizations conduct the research studies of the dynamics of different types of productivity, but the size of the database indexes are insignificant.

In this article we try to synthesize the existing approaches to the measurement of labor productivity, focusing the attention on the level of the country and industry. Our aim is to understand the sources of differences in the results of various studies in order to choose measuring instruments in the development of the system of labor productivity measurement and assessment in different conditions and at different levels. We justify the complexity of the problem of performance in the macro-system and show the examples of practical application of the measuring system of labor productivity in different spheres and activity types. The experience of the Republic of Tatarstan in the implementation of the program of development of labor productivity will be useful to other regions in the development of similar programs.

## **2. Methodology**

In order to manage the labor productivity, it is necessary to be able to measure and evaluate it. Factor productivity is generally understood as the ratio of the total of output produced by some system (output) and the resources consumed in the production (input). Either the gross domestic product, or the added value is used as an indicator of the production volume. There is strong correlation between the records made by these indicators. As a rule, preference is given to the added value which is defined as the gross product value minus purchased goods and services. The advantage of use of the added value indicator is that it takes into account the differences in the degree of vertical integration of the industry in different countries, as well as the difference in quality of goods produced.

Resource spend is understood as all the production factors including labor, land and capital involved in the production process. The total number of worked man-hours, the number of employees or the Accrued Wages Fund are used to calculate the amount of labor. It is generally recognized that the total number of worked hours is more appropriate measure of labor than the number of employees. Changes in the average hours worked, differences of working hours in different countries, part-time working hours are hidden in the index of the number of the employed. Estimated figures based on data on employment in the industry and the number of hours worked by the average employee corrected for the number of employees involved in non-

core activities are used in case of the unavailability of the data on actual hours worked (Bloom & Reenen, 2007).

For many decades the international organization OECD works on the measuring of performance and develops various techniques of databases formation. For example, OECD publishes various databases of special labor productivity indexes that are the basis for compilation and analysis of data correlation. The differences in the indexes used (compilation of two databases) are shown in the table 1.

*Table 1: Differences: the OECD Productivity Database and the OECD System of Unit Labor Cost and Related Indicators*

	OECD Productivity Database	OECD System of Unit Labor Cost and Related Indicators
Labor input measure (1)	Total number of hours worked by those in employment, defined as average hours worked multiplied by the corresponding and consistent measure of employment for each particular country	Total employment in persons, where data for total number of hours worked by those in employment are not available in the SNA
Output measure (2)	Gross domestic product (expenditure-based), national currency, constant prices, OECD base year (currently 2000)	Gross value added excluding FISIM, national currency, constant prices, OECD base year (currently 2000)
Updating Policies	Once per year	Quarterly
Labor productivity measure (2) / (1)	Labor productivity per hour	Labor productivity per hour or labor productivity per person employed (if hoers data not available)

Comparative analysis of the system of performance indicators in the countries of Western Europe and the United States is carried out from the middle of the 20<sup>th</sup> century to the present day. The new detailed database “EUKLEMS Growth and Productivity Account” was put into operation from 1995. In 2008 a new system of performance indicators was brought into operation into scientific circulation at the level of industries for 25 (from the 27) EU countries, data sets on 72 types of activities were used. GDP per hour worked and capital services per hour worked or total factor (multifactor) productivity that reflects the correlation of output to costs of both labor and fixed capital, are primary indicators for comparison of the European and US levels of productivity. (Ark et al., 2008)

In the model KLEMS the output is measured by gross output, and inputs are divided into capital, energy, materials and service. Elimination of the effect of intermediate inputs from other industries on performance productivity and origination of more accurate data of productivity by sectors is an advantage. However, in the data structure the information that is necessary to assess the performance productivity should be not only from national income accounts so to take into account the effects of multi-sectoral use.

In Russia the Federal State Statistics Service Rosstat calculates the index of change of labor productivity in the economy as a whole by dividing the volume indices of GDP and the index of change of total labor costs in the equivalent of full employment. Until 2010 the total labor costs were calculated according to “clean types of activities, and from 2010 – by “economic” types of activities. Dynamics of the main economic indicators for the last 10 years is given in the table 2. Functional principles of formation of all indicators of the production account (output, intermediate consumption and added value) are not used in the methodology of Rosstat. Of course, more thorough work to collect data in order to assess the labor productivity and development of methods is required.

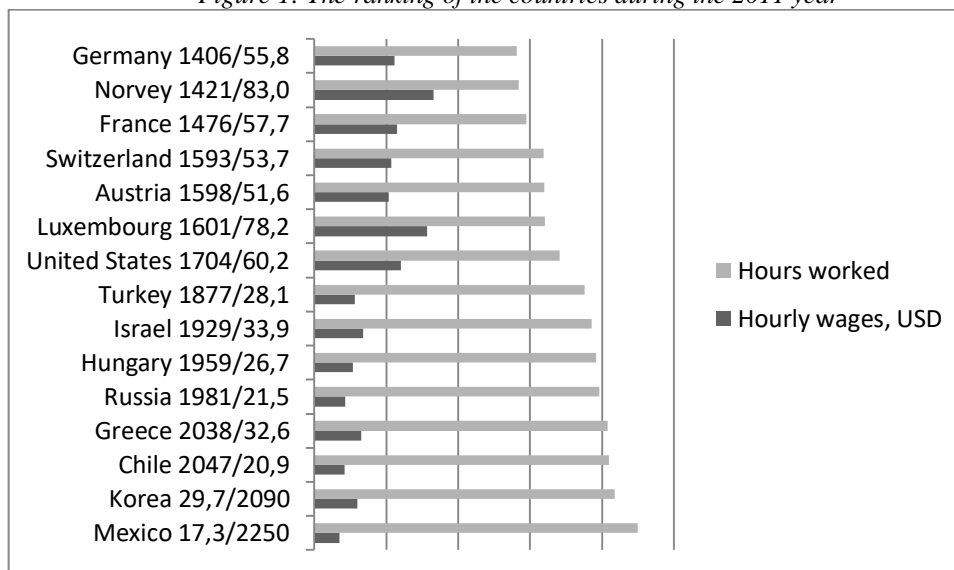
Table 2: Dynamics of economic indicators in the Russian Federation (in percentage terms to the previous year, except unemployment)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
GDP	107,2	106,4	108,2	105,2	92,2	104,0	104,5	104,3	103,4	101,3
Labour productivity	106,5	105,5	107,5	107,5	104,8	95,9	103,2	103,8	103,1	101,8
Unemployment level, %	8,1	7,4	7,0	5,9	7,1	8,7	7,6	6,7	5,7	5,7

Source: Rosstat

In comparison with the developed countries, in Russia the level of labor productivity is unacceptably low: in the early 2000s this index was only 82% of the global level. During the years of reforms the lag significantly increased (Olga et al., 2015). Thus, if in the early 1990s the gap between Russia and the United States in terms of labor productivity was 4-4,5 times, at the beginning of the new century – 5,5-6 times. In the 2000s the labor productivity in Russia increased – in average – by 6% a year and provided 2/3 of the GDP increase per capita. Russia lags far behind developed countries in terms of labor productivity, but the gap is slightly reduced. For example, in 2012 in the US the GDP index per employee in US dollars (in constant prices of 2005 by PPP) was 100500, in the EU – 68100 dollars. In Russia the average labor productivity was only 30700 dollars which is less than the US index in of 3,2 times, and the European index - by 2,2 times (OECD, Labour productivity levels in the total economy). The problem of comparison of labor productivity growth and wage growth is often studied in the research. According to the research conducted in the laboratory of the labor market research and the Centre of Labor Studies of the Higher School of Economics in Russia, unlike other countries, the growth of payments does not affect the effectiveness and the intensity of the employee's activity (Gimpelson et al., 2014). There is an inverse relationship: productivity growth by 1% leads to increase of wages by 0,59%. Unemployment has a major impact on the labor market: its rise by 1 % point leads to decrease of wages by 14-12%. Furthermore, analysis of the degree of use of labor force is based on the measurement of changes in the number of working hours. According to the OECD, the ranking of the countries formed on the basis of comparison of hourly wages and hours worked during the year, is shown in Fig.1.

Figure 1: The ranking of the countries during the 2011 year



Source: OECD, Productivity statistic

The data of the figure allow to characterize a particular country in terms of efficiency of work. As it is seen, Russia – with a large number of working hours a year – has rather poor performance indexes in terms of hourly wages. In other words, an employee works a lot but earns little, but a lot – does not mean effectively. Luxembourg where for a short period of work an employee gets wages several times more than in the other countries, particularly stands out in this list. In this regard, in the ranking our country is among the first by the number of hours worked in a year, but in terms of hourly wages – among the last.

### **3. Results of application of productivity multifactor indexes**

In the international practice, one-factor and multifactor indicators are used to assess performance productivity. One-factor indicators are characterized by easy use and calculation but they do not take into account the effect of other factors. In turn, multifactor models are much more complex for calculation, they depend on the chosen theoretical model but they take into account the contribution of a large number of factors. According to D. Sink, not the set of indicators is important – but the method that allows to create the performance measurement systems that conform to the specific character of the organization and objectives of the analysis (Sink, 1985).

Multifactor methods involve the determination of a single index that aggregates in the numerator – in this or that way – all the most important types of production, and in the denominator – all the most important kinds of consumed resources. Multi-criteria methods use a single performance indicator which is calculated by aggregation of partial indicators using ranking or weighing (Wölfl & Hajkova, 2007). While multifactor productivity measures are useful for understanding factors affecting the traditional productivity movements, and many such measures have been developed, it is important to recognize that they do not have the same degree of precision that the labor productivity measures have (Bernard & Jones, 2001).

We consider the example of the program of development of labor productivity in the Republic of Tatarstan. Databases which accumulate the necessary information for the analysis of labor productivity were created in the process of this work.

The Republic of Tatarstan has great potential for the development of productivity of enterprises in different industries located in the region (Glebova & Khabibrahmanova, 2014; Elena et al., 2015). Manufacturing, in particular petrochemicals and mechanical engineering are the key sectors of the economy of the Republic of Tatarstan; they make significant contribution into the economic growth and welfare. In the GRP structure of RT the manufacturing occupies 17% (mechanical engineering - 7%, petrochemicals - 5%). Comprehensive study of mechanical engineering and petrochemical sectors in the republic revealed the main obstacles for the productivity development – management and organization of production processes, personnel, equipment and assets.

Comparative analysis which involved panel data of the Russian regions with similar raw materials base and production portfolio was carried out to assess the productivity level in the mechanical engineering industry. In addition, the data of the countries and companies that hold the leading positions by productivity was used. By the results of the study it was determined that the performance indexes of Tatarstan differ significantly. Productivity in the sector of mechanical engineering in Tatarstan exceeds the average Russian level by 84% in the segment of machinery and equipment and by 24% - in the segment of electrical equipment, electronics and optics. The companies of the region also take the leading positions by capital productivity

exceeding the average Russian level by 45% and 40% respectively in the previously mentioned segments. However, there situation is critical in the automobile manufacturing segment. The region lags behind the average Russian level by all productivity indexes. In the region the gap in indexes of labor productivity is 59%, of capital productivity - 65%. The study also showed how much Tatarstan gives up to international leaders in all segments of machinery engineering industry.

Tatarstan is characterized by relatively high development of clusters, the performance index of which exceeds the average level in Russia by 6% (Glebova & Kotenkova, 2014). The analysis revealed that 23% in advantages in terms of the performance index is achieved by optimal structure of the portfolio of clusters. However, the development factor has a negative effect (-16%), it neutralizes a part of the positive effect of the portfolio structure.

The research studies became the basis for the development of different scenarios for the development of labor productivity in the region until 2020.

#### **4. Conclusion**

The article described some techniques of measurement and assessment of labor productivity at the aggregate and sectoral levels. Labor productivity is an important indicator for the economic and statistical analysis of the country, so the optimal database is necessary to carry out the qualitative analysis. The significance of this indicator increases with the increase of impact of human capital.

Measuring of labor productivity is the selection of temporary indicators for variable volumes of production and costs. Selected indicators affect the level and dynamics of the performance productivity. The amount of collected information on production and costs is determined by the range of measurement system, the period of analysis. Labor productivity index per one hour worked or paid is considered to be the best indicator but it is difficult to calculate it. Specific labor productivity indexes give contradictory assessment of the productivity dynamics. For industries and companies the measuring of labor productivity is a assessment efficiency tool, it allows to predict the demand for investments, to determine the effect of increasing costs and technological innovation.

Russia has a great potential to increase labor productivity in all sectors of the economy. Development of programs of labor productivity development should be based on the optimally created system of measurement and assessment of this index. Poor organization of work on collecting and analyzing of data to measure labor productivity slows down the adoption of rational and timely decisions. Productivity measures of high quality can shed light on policy issues of great importance, including questions on the best means of increasing the efficiency of economic resources in the context of global challenges. Studies of productivity in the Republic of Tatarstan will be further developed, with the basis on new sources of information and methods of development of indicators.

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## CUSTOM MANUFACTURING OF FURNITURE IN CONTEXT OF GLOBALIZATION AND QUALITY MANAGEMENT

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**Abstract.** The article deals with the issue of process quality management in custom manufacturing of furniture in context of globalization. Globalization trends in design have caused a steady increase of competition in the market of furniture which is manifested by rising individualism of customers. The solution of this problem is a custom manufacturing in the furniture industry, because of the production of less quantity of product types in different variants according of customers' requirements. Custom manufacturing products are more expensive than products of mass production, because these are atypical products manufactured to meet specific requirements and customer wishes. Competitive company is one that can produce faster, cheaper with better quality. This intensified process of the world globalization is related in the large extend the enterprises of custom manufacturing, too. These companies cannot compete with large enterprises in the area of prices but their priority should be the quality for the acceptable price and creation of the relationships with customers which can be achieved by orientation on the effective quality management based on process approach. The aim of the presented paper was to propose a model for implementation of system of management quality in to the furniture companies which works on the principle of custom manufacturing. The model is based on the single customers' requirements and respects the partial utilization of elements of the mass production. The aspect of mass production in the model is based on the use of methods of measurement and evaluation of processes performance in management quality what is benefit for the custom company not only in the area of quality but in the whole efficiency. It is expected that implementation of the proposed model into practice will help to improve the competitiveness of custom manufacturing furniture companies.

**Keywords:** custom manufacturing, furniture, globalization, quality management, process

**JEL Classification:** M11, M20, M21, M29

### 1. Introduction

Vývoj spoločnosti aj v dôsledku globalizačných tendencií naberá na rýchlosti viac ako v uplynulom období (Úradníček, Zimková, 2009). Rovnakou mierou to platí pre technológie, inovácie, trendy a nároky zákazníkov. Problematika bývania, a s ním spojené zariaďovanie interiérov a exteriérov, sa týka každého z nás ako zákazníka. Na druhej strane sú nábytkárske firmy so svojou ponukou, ktorá je ovplyvňovaná mnohými globálnymi a regionálnymi kultúrnymi faktormi, snažiace sa získať a udržať si zákazníka (Barcic et al., 2016). Nábytkársky priemysel je oblasť s veľkým finančným obratom. Pre firmy je veľmi nákladné zavádzanie inovácií na trh, na

počiatku ktorého stojí od množstvo technických odborníkov až po sociológov. Tento proces končí vystavením príslušnej novinky na prestížnej nábytkovej výstave, s očakávaním pozitívnej odozvy od zákazníkov. Nábytkové výstavy medzinárodného charakteru určujú trendy a smery, ktorým sa bude daná oblasť uberať v blízkej budúcnosti. Trendy sa prejavujú najvýraznejšie na farbách, tvaroch a materiáloch. Globalizácia sa v súčasnosti prejavuje nielen v hospodárstve a s ním súvisiacim financovaním, v politike, v životnom prostredí, komunikácii (Vavrová, 2014; Bikár, Kmet'ko, 2015), ale výrazne aj v dizajne. Globalizačné trendy sa dostávajú do „obehu“ prostredníctvom medzinárodných výstav, ale aj informačnými a komunikačnými technológiami, ktoré umožňujú šírenie ich po celom svete. Ide o tzv. globalizačné megatrendy, ktoré v nábytkárskom priemysle vychádzajú predovšetkým z interiérových megatrendov, ktoré ovplyvňujú aj textilný, stavebný a iné druhy priemyslu. Tieto trendy sa na základe kultúrnej, technickej a ekonomickej úrovne implementujú v danom regióne. Ovpływujú nábytkárske podniky nielen v dizajne produktov, ponúkaných na trhu, ale aj v použitej technológii, v riadení a štruktúre podniku (De Azevedo, Nolasco, 2009).

Práve riadenie podniku a riadenie výroby musí byť nastavené tak, aby firma vyhovela zákazníkovi dizajnom svojho nábytku a bytových doplnkov, ale aj splnila jeho požiadavky, ktoré sa týkajú dodania, montáže a inštalovania výrobku (Sakkas, Malkewitz, Apostolou, 1999). Výrobné podniky, predovšetkým veľké a stredné, sa zameriavajú najmä na dodanie správneho sortimentu v stanovenom čase pre obchodné prevádzky (predajne nábytku). Ďalšie služby zabezpečuje predajňa nábytku. Veľké nábytkárske podniky majú výhody predovšetkým v ekonomickej výhodnosti a efektívnosti, a tým aj v nižších cenách pre zákazníka, avšak chýba im priama komunikácia so zákazníkom, pretože do logistického reťazca vstupuje sprostredkovateľ – veľkoobchod a/alebo maloobchod. Preto aj ich reakcie na požiadavky zákazníkov môžu byť v tomto smere oneskorené. Ďalšou ich nevýhodou je, že vyrábajú prevažne na sklad. Aj veľké a stredné podniky nábytkárskeho priemyslu, reagujú na túto situáciu a menia manažment a riadenia výroby a distribúcie, tak aby boli schopní reagovať rýchlejšie na požiadavky trhu, na základe svetových trendov alebo individuálnych požiadaviek zákazníkov. Menia svoj charakter výroby zo skladového, na výrobu zákazkovú. Aby proces dodania nábytku bol čo najrýchlejší a najvýhodnejší pre obe strany, podniky uplatňujú v riadení tzv. logistické Y (Tomek, Vavrová, 2007), podstatou ktorého je kombinácia štandardizácie a individuálnych požiadaviek zákazníka. Práve tento prístup v logistike podniku, ktorý má charakter zákazkovej výroby, s využitím merania a hodnotenia výkonnosti procesov, prinesie pre podnik zvýšenie jeho efektívnosti a pre zákazníka vyššiu spokojnosť, vo viacerých kritériách, čo sa odrazí na jeho lojalite a pozitívnych referenciách, čo prispeje k rastu hodnoty podniku na trhu. Z vyššie prezentovaných dôvodov bolo cieľom predloženého príspevku návrhnutie modelu pre zavedenie systému manažérstva kvality do nábytkárskych podnikov, ktoré pracujú na princípe zákazkovej výroby. Prínosom modelu je, že zahŕňa aspekty veľkosériovej výroby, ktorá na základe využívania metód merania a hodnotenia výkonnosti procesov prináša podniku výhody nielen z oblasti kvality, ale celkovej efektívnosti.

## 2. Materiál a metodika

Zákazková výroba v oblasti nábytku sa uplatňovať vo všetkých typoch výroby (Cassens, Bradtmueller, 1996). Môže ísť o výrobu kusovú, táto forma sa uplatňuje v menšej miere, jej výroba je veľmi náročná z viacerých hľadísk (zásobovacie, organizačné, finančné a iné). Vyžaduje si veľmi úzku spoluprácu so zákazníkom. Pri výrobkoch, v mnohých prípadoch môžeme hovoriť aj o umeleckých dielach, neslúžia bežnému užívateľovi – radovému zákazníkovi, ale skôr na dotvorenie náročnejších interiérov (Top, 2015). Ako uvádza Rosas (1996). Často ide o rôzne nábytkové solitéry, s veľkým podielom ručnej práce, s použitím drahších drevín a iných

doplňkových materiálov. Môže ísť samozrejme aj o zariadenie celého interiéru na zákazku v rámci kusovej výroby, s výrazne špecifickým charakterom.

Vzhľadom na to, že požiadavky zákazníkov sa vyvíjajú rýchlejším tempom aj pri zariaďovaní interiéru, je potrebné zo strany podnikov prichádzať na trh s nábytkom, ktorý zachytáva nové interiérové a dizajnérske prvky (Gonzalez-Garcia et al. 2014). Globalizácia vnáša do interiéru pestrosť. Vzhľadom k zvýšenej mobilite ľudí ako dôsledku globalizácie a urbanizácie, sa zvyšujú požiadavky, predovšetkým u mladšej generácii, na mobilitu a viacfunkčnosť nábytku. Ľudia menia svoje miesto pobytu a menia aj nábytok. Preto sa zvyšujú požiadavky na jeho funkčnosť a prijateľnosť ceny vo vzťahu ku kvalite. Zároveň sa zvyšujú individuálne požiadavky na nábytok, ovplyvnené tradíciami, vlastnou kultúrou, ale aj megatrendami a dostupnými informáciami. Aby výrobcovia mohli ponúknuť a splniť individuálne požiadavky zákazníkov, nielen v oblasti dizajnu, ale aj rozmerov, za primeranú cenu, ktorú je zákazník ochotný zaplatiť, ako vhodné riešenie pre podnik je štandardizácia výroby nábytku, ktorá prináša pre organizáciu a riadenie podniku množstvo výhod (Millward, 2004). Vo výrobe skrinkového a úložného nábytku sa uplatňuje stavebnicový systém konštrukcií, ktorý vyžaduje normalizáciu materiálovej a súčiastkovej základne, kde stupeň štandardizácie postupne klesá od jednotlivých dielov, podzostavy, zostavy k finálnym výrobkom. Kombináciou jednotlivých štandardizovaných častí možno vytvárať varianty podľa požiadaviek zákazníkov, s väčšou možnosťou kombinácie výrobných dávok (Martin, Meausoone, 1999). Z hľadiska marketingu tento spôsob prináša určitý stupeň predzhotovenia, čo predstavuje skrátenie času dodávky k zákazníkovi a zníženie nákladov na výrobu. Modularita umožňuje rýchle prispôsobenie sa novým požiadavkám a zmenám trendov na trhu ale aj tvorby súčasných interiérov, s možnosť aplikácie viacerých variantov. Vzťah štandardizácie a inovácie sú v protiklade. Štandardizácia postupuje podľa predpisov, noriem, predpísaných metód a technológií. Inovácie prinášajú voľnosť kreativity a inovatívnosti. Štandardizácia využíva metódy merania a hodnotenia procesov, jej cieľom je kvalita a efektívnosť. Ako uvádza Teplická (2012), štandardizácia prináša finančné úspory, zjednodušenie hmotných a informačných tokov, presnosť stanovenia požiadaviek.

Podľa Radharamanana, Godoya a Watanabea (1996), východiskom riešenia problému, ako vyhovieť individuálnym požiadavkám zákazníkov, je predovšetkým štandardizácia jednotlivých častí výrobkov, ktorá vedie k dokonalému uplatneniu stavebnicovosti výroby, ktorej výsledkom je potom možnosť ponuky malosériovo až zákazkovo vyrábaných finálnych výrobkov, založených na sériovo až hromadne vyrábaných častiach a dielcoch, ktoré si zákazník vyberá na základe svojich individuálnych potrieb pri zariaďovaní interiéru.

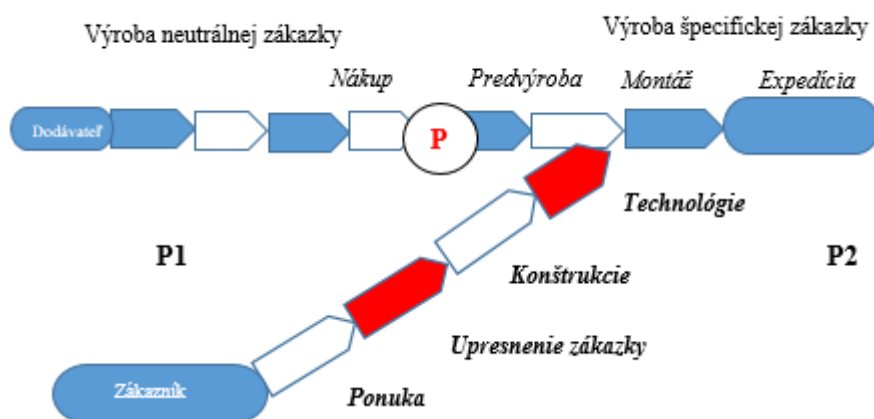
Aj dnešné nábytkárske výrobné podniky využívajú skutočnosť, že plnenie individuálnych požiadaviek zákazníkov je možné a môže viesť firmu k získaniu konkurenčnej výhody. Individualizácia nachádza svoj význam v hromadnej výrobe tak, že zvyšuje z hľadiska zákazníkov počet (Tomek, Vávrová, 2007):

- štandardných produktov so špecifickými variantami podľa zákazníkov,
- štandardných produktov so špecifickými variantami ponuky.

Cieľom riadenia výroby je potom rozdeliť výrobný hmotný tok na dve časti, a to výroba neutrálnej zákazky a výroba špecifickej zákazky podľa požiadaviek zákazníkov. Kompromisné riešenie je založené na pohybe bodu P, ktorý je bodom rozpojenia výrobného toku s ohľadom na hromadnú a individuálnu výrobu. Štandardizácia umožňuje jeho posun smerom k zákazníkovi. Ako uvádzajú Tomek a Vávrová (2007), príklad využitia bodu P, je pri tzv. logistické ypsilon, ktoré prezentuje obrázok 1. Výroba neutrálnej zákazky (diely, podzostavy, zostavy), tvorí základ stavebnice finálnych výrobkov a využíva všetky výhody modernej

výroby vo veľkých dávkach - na obrázku 1 ju predstavuje oblasť P1. Rieši sa optimálne umiestnenie bodu rozpojenia tohto reťazca, ktorá predstavuje časť vyrábanú bez ohľadu na konečného zákazníka a časť výroby na základe požiadaviek zákazníka. Ako uvádzajú Ulewicz, Jelonek, Mazur (2016), v priestore umiestnenia bodu rozpojenia na úsečke materiálového toku, sa napája úsečka informačného toku, ktorá predstavuje informácie, t.j. požiadavky zo strany zákazníka. Tieto vstupujú do výrobného procesu. Ide o jednanie so zákazníkom, kde sa na základe ponuky a vzájomnej komunikácie, špecifikujú požiadavky zákazníka. Nasleduje spracovanie ponuky, ďalej rozpracované do konštrukčného a technologického spracovania. Výrobu špecifickej časti predstavuje predovšetkým časť montáž, kde dochádza k tvorbe finálneho nábytku alebo nábytkovej zostavy (Vidal, 2011). Zákazník si volí na základe svojich požiadaviek, z ponuky firmy, predovšetkým materiál na výrobu nábytku, farebnú povrchovú úpravu v prípade skrinkového nábytku, kvalitu a farebnosť potáhového materiálu pri čalúnenom nábytku. Ako uvádzajú De Azevedoa Nolasco (2009), veľmi dôležitý je správny výber nábytku a zostáv na základe rozmerov zariadeného interiéru. Ďalej si zákazník môže zvoliť typ kovaní, aj v závislosti od cenových relácií, typ a farbu úchytiakov a niektoré ďalšie detaily úpravy a doplnkov, napr. typ a farbu hrnovej pásy, lišty a iné.

Figure 1: Logistické Y  
HMOTNÝ TOK



Výskum prebiehal v štyroch kľúčových etapách. V prvej fáze riešenia bolo potrebné na základe analýzy sekundárnych zdrojov realizovať literárnu rešerš domácich a zahraničných autorov s cieľom porovnať názory rôznych autorov na skúmanú problematiku a tiež vytvoriť si teoretický základ pre návrh modelu. V tejto fáze boli použité metódy vedeckej práce, ako sumarizácia, syntéza poznatkov a metóda analógie. V druhej fáze bola realizovaná analýza stavu riešenej problematiky v dvoch vybraných podnikoch zákazkovej výroby nábytku na Slovensku. V tretej etape bol na základe analýzy primárnych a sekundárnych zdrojov navrhnutý model pre zavedenie systému manažérstva kvality do nábytkárskych podnikov, ktoré pracujú na princípe zákazkovej výroby, ktorého podstatu tvorí metóda logistického ypsilonu. V záverečnej fáze boli metódou sumarizácie zhodnotené dosiahnuté výsledky a definované prínosy modelu pre vedu, teóriu, ale najmä pre prax nábytkárskych podnikov zákazkovej výroby.

### 3. Výsledky a diskusia

Model pre zavedenie systému manažérstva kvality do nábytkárskych podnikov, ktoré pracujú na princípe zákazkovej výroby, spája v sebe výhody veľkosériovej výroby, ktorá na

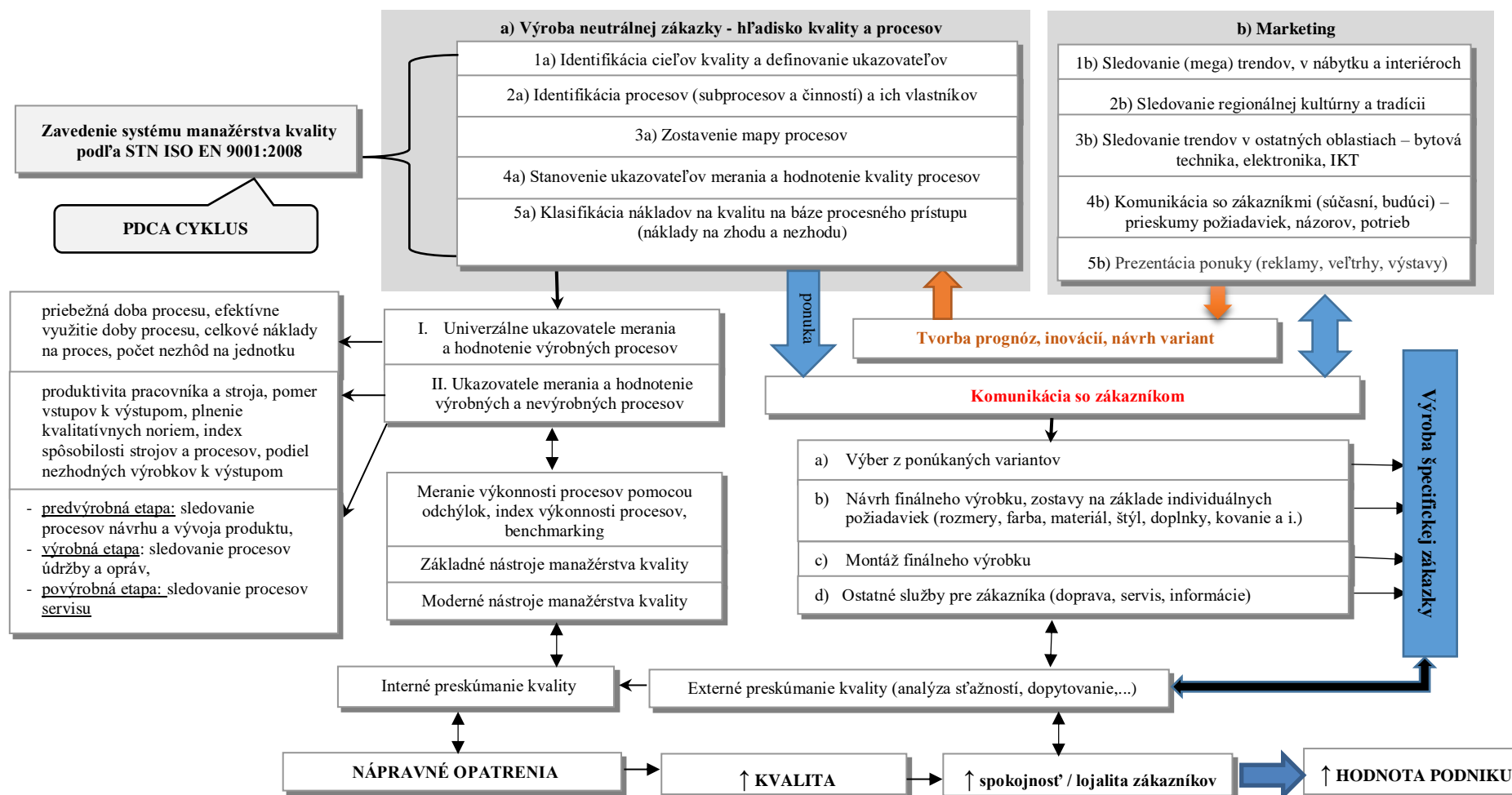
základe využívania metód merania a hodnotenia výkonnosti procesov (obrázok 2), prináša podniku výhody nielen z oblasti kvality, ale celkovej efektívnosti. Ako uvádzajú Hajdúchová et al. (2016), efektívnosť hospodárenia podniku sa môže pozitívne prejavovať na cenách výrobkov na trhu, čo je spolu s kvalitou, základným predpokladom lojality zákazníkov. Pri návrhu modelu sa vychádzalo z logistického ypsilonu, kde do procesu výroby vstupuje v bode P zákazník, so svojimi individuálnymi požiadavkami na nábytok. Tomuto predchádza marketingová činnosť podniku, ktorá prichádza na trh s ponukou, na základe ktorej si zákazník vyberie nábytok presne podľa svojich potrieb a predstáv o zariadení interiéru. V tejto časti je dôležitá komunikácia so zákazníkom, tu sa bude rozhodovať o budúcom finálnom nábytku alebo nábytkovej zostave pre zákazníka (rozmery a počet častí stavebnice, materiál, farba, kovanie, ostatné voliteľné doplnky. Zákazníkom sú poskytnuté konzultačné a poradenské služby pre návrh interiéru v programoch s 3D vizualizáciou, aby si zákazník vedel predstaviť celkový vzhľad interiéru s kombináciou zvolených dielcov, zostáv a doplnkov v interiéri. Význam komunikácie a kvality služieb pre zákazníka, je zobrazená v pravej časti modelu.

Poskytované služby pre zákazníka v procese prípravy finálneho produktu, počas distribúcie, v prípade požiadavky na jeho inštaláciu, a tiež služby po jeho odovzdaní zákazníkovi, sú súčasťou vnímania kvality firmy (podniku) zo strany zákazníka a jeho lojality (Top, 2015). Vo všetkých týchto procesoch je potrebné neustále komunikovať so zákazníkom, v prípade nepredvídanej zmeny (konštrukčnej, technologickej, materiálovej, logistickej a i), každú odsúhlasiť zákazníkovi.

V systéme zákazkovej výroby je veľmi dôležitá marketingová činnosť, a to pre zónu P1, ktoré vychádza z výskumných metód, zameraných na budúce a súčasné potreby zákazníkov, so zohľadnením trendov v oblasti nábytku a zariaďovania interiérov. Ide o výrobu neutrálnej zákazky, vyrábanej na základe prognóz. Novšie výrobné koncepcie sa zameriavajú na čo najhospodárnejšie vyváženie procesov podľa zákaziek vo vzťahu k procesom podľa prognóz.

Aby bola dosiahnutá výsledná spokojnosť na strane zákazníka a spokojnosť na strane firmy, je potrebné zaistiť kvalitu vo všetkých procesoch, na všetkých úrovniach (Radharamanan, Godoy, Watanabe, 1996). A tak bola v modeli prepojená kvalita hromadného výrobného procesu na základe princípu „pull systém“, cez kvalitnú komunikáciu so zákazníkom, pre splnenie jeho individuálnych požiadaviek na tvorbu jeho finálneho produktu („push systém“). Východiskom a cieľom je komunikáciou s trhom (marketingová činnosť), pre vytvorenie správnych prognóz vo výrobe nábytku, na základe megatrendov, v kombinácii s danou kultúrnou úrovňou trhových segmentov.

Figure 2: Implementácia systému manažérstva kvality pre nábytkárske podniky zákazkovej výroby



#### 4. Prínosy navrhovaného modelu

Prínosmi navrhovaného modelu sú:

- zavedenie systému manažmentu kvality a možnosť komplexného riadenia kvality,
- detailné poznanie procesov, subprocessov a činností vykonávaných v podniku,
- kvalita v kvantifikovateľnej podobe pomocou ukazovateľov merania a hodnotenia výkonnosti procesov,
- racionalizácia organizovania výroby, technickej, obchodnej a ekonomickej činnosti,
- zjednotenie informácií a zaistenie ich jednoznačnej vypovedacej schopnosti,
- zvyšovanie technickej úrovne výrobkov,
- efektívne využitie zdrojov všetkých procesov,
- rešpektovanie požiadaviek trhu a zákazníkov, komunikácia so zákazníkmi,
- skrátenie dodacích termínov,
- zvýšenie spokojnosti a lojality zákazníkov, efektívnejšia realizácia nápravných opatrení na základe využitia odporúčaných metód a nástrojov.

#### 5. Conclusion

Ako uvádzajú De Azevedo a Nolasco (200), Millward (2004) a Rosas (1996), využívanie zákazkového systému výroby, nielen v oblasti nábytku, sa v posledných rokoch uplatňuje stále častejšie. Prináša to výhody pre podnik, z hľadiska zvýšenia efektívnosti a pre zákazníka, výber finálnych produktov podľa jeho potrieb a želaní. Tento systém umožňuje v plnej miere využívať systém manažérstva kvality, stimulovať organizácie analyzovať požiadavky zákazníka, definovať procesy, ktoré prispievajú k vytvoreniu produktu prijateľného pre zákazníka a udržiavať tieto procesy pod kontrolou, pretože efektívne procesy patria medzi najcennejšie aktíva každej organizácie. Ich správne riadenie zabezpečí poskytovanie mimoriadnej hodnoty zákazníkovi, vytvára priestor na realizáciu zmeny a predstavuje základ pre budúci rast a inovácie. Dôležité postavenie má aj marketing, ktorý prostredníctvom sledovania trendov a prieskumov vytvára pre podnik prognózy pre zavádzanie inovácií. Podniky by mali pochopiť, že investovaním do zavedenia týchto metód a sledovaním procesov a ich neustálym zlepšovaním, zlepšujú kvalitu svojich ponúkaných výrobkov a služieb (Nenadál, 2008). To prináša spokojnosť zákazníkov, ktorí sú pre podnik hlavným predpokladom pre jeho hospodársky úspech a dlhodobý rast.

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## EUROPEAN INSOLVENCY LAW HARMONISATION IN TERMS OF GLOBAL CHALLENGES

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**Abstract.** World legal environment converges day by day. This situation is caused mainly by accelerating globalization which has significant impact on development of international commerce not only as whole but also in terms of supranational regions. The European Union is representative example of such a region. There are a lot of benefits of entering into foreign markets, almost in times of hyper competitiveness and global customer creation. But there is not only bright side of cross border commerce intensification. Many companies are sceptic when entry into foreign market is discussing. Main fears and practical problems are resulting from existing legal uncertainty and inconsistency of obligation and bankruptcy law. The first one is important when contracts are not fulfilled at appropriate level while the second one is vital from the company's point of view when the partner is bankrupt and there are still obligations to be fulfilled without optimistic prospective to be done so and with threat of so called forum shopping i.e. manipulation with territorial jurisdiction in order to obtain greater benefits and to weaken the procedural position and rights of the other party, which is the creditor in most cases. This is the reason for the acceleration of activities leading to harmonization of bankruptcy law in the context of the European Union. But which are the challenges of this legislative activity in terms of globalization? Will be member states willing to abandon their legal culture and accept single European Union bankruptcy law without taking into account existing national specifics and competences? These are the questions which we try to answer using analysis of convergences and divergences of national bankruptcy laws as a prospective base for single bankruptcy law creation.

**Keywords:** bankruptcy, bankruptcy law, insolvency, liquidation, restructuring

**JEL Classification:** K20, K22, K33

### 1. Introduction

Scientific literature pays increasing attention to the issue of relationship between the quality of insolvency law and the business environment. (Armour & Cumming, 2008, Routledge & Morrison, 2012, Jaba et al., 2014, Ruckova, 2014). Gutierrez et al (2012) empirically analysed the effect that the bankruptcy law has on firm's performance based on its financial situation. To do this, they considered the different types of efficiency and their influence on firm's value. The study was carried out for Germany, Spain, the United States, France and the United Kingdom.

The main results showed that under creditor-oriented systems, there is a decrease in the value of both financially distressed firms and those filing for bankruptcy.

But it is not only primary theoretically investigated penetration of the economic and legal attributes of national environments. (Smid, 2009). On the contrary, the European Union, aware of the existence of a positive correlation between these variables intensifies work on harmonizing rules for the solution of corporate insolvencies in a cross-border basis. The main reason is to maximize legal certainty of the addressees of law whose individual rights and obligations of such cross-border insolvency cases relate directly or indirectly. We mean especially the negative phenomenon of forum shopping, as also Szydlo (2010), Omar (2012) and Mucciarelli, (2014) emphasize.

According to Gerner-Beuerle and Schuster (2014), corporate mobility in Europe continues to be on the rise, both creating space for regulatory arbitrage by companies and influencing legislative decisions in corporate law and related fields. This has triggered debates in European company law that centre on questions of harmonisation, cross-jurisdictional convergence and the superiority of certain regulatory approaches and legal families. They used a large cross-country sample of EU Member States to classify legal strategies in corporate governance and assess claims of convergence and the superiority of legal families. According to obtained results, all legal families are, in principle, well equipped to react to new developments and draw on general or unwritten principles of law to fill regulatory gaps.

Georgescu et al. (2012) analysed the phenomenon of insolvency of companies from different European Union countries. The analysis performed has revealed, on the one hand, the countries that have suffered serious changes in the considered period and, on the other hand, the differences between European countries included in the study.

When considering harmonization of actual laws in scope of corporate insolvencies solutions in the context of the European Union, it is important to accept regional divergences in legislation. (Ragone and Benavides, 2015 Mucciarelli, 2016). This is the reason, why actual ideas about insolvency law harmonization are polarized. In contrast with the past, when the harmonization of law was denied not only by the professional community, but also by applicational practice (Dougan, 2000, van Gerven, 2004 Vogenauer & de la Feria, 2011), there was a significant ideological movement towards to the acceptance of such a harmonisation. Main ideological proponents of harmonization are Kastrinou (2012), Wessels (2015), Keay (2016), Eidenmüller and van Zwieten (2016). But these authors at the same time highlight the need of more consistent consideration of national specifics in the future relevant harmonised legislation.

Also according to de Weijs (2012), insolvency law has become a field of law for which harmonisation at a European level is considered both important and feasible. In deciding upon the content of such harmonised rules, there will need to be a common understanding about the goals of insolvency law and, therefore, a European debate on bankruptcy theory. Bankruptcy theory, and most notably the influential creditors' bargain theory, has long viewed insolvency law as a set of rules for overcoming common pool problems.

## **2. European insolvency law on the way to its harmonisation**

Currently, insolvency law is regulated primarily in the EU through Regulation 1346/2000 – recast as Regulation 2015/848 – and it is designed to facilitate cross-border insolvency proceedings and to ensure greater coordination of national insolvency proceedings. According

to European Commission Study (available on: <http://ec.europa.eu/>), there are these substantive sections selected for consideration in scope of further harmonisation of EU insolvency law: directors' liability and disqualification, institutional framework, ranking of claims and order of priorities, avoidance and adjustment actions, procedural issues relating to insolvency proceedings, EC Recommendation on a new approach to business failure and insolvency, second chance for individual entrepreneurs, consumer over-indebtedness. Last mentioned feature is despite of its importance for effective single market functioning, not relevant when discussing corporate insolvency. So, there will be no more paid an attention to the issue of consumer over-indebtedness in presented article.

## **2.1 Directors' liability and disqualification**

When a company is insolvent or in a state that effectively means that it is insolvent, the majority of EU members require the directors to take some form of action, and this generally involves filing for insolvency in the courts. The average period is 30 days. There is also a difficulty with defining insolvency, what is manifest in the fact that it is expressed in different terms in Member States. The majority of EU members oblige directors to file for insolvency proceedings within a certain time period following the advent of particular circumstances. In Member States where there is not a formal requirement to file for insolvency within a specific time, most have some form of provision or case law which dictates that while companies may continue to do business when they are near to, or actually, insolvent, directors must modify their actions so as to halt a company's slide into insolvent liquidation and in order to protect creditors. Generally in the EU, it will depend on what insolvency procedure is commenced in relation to a company as to whether the directors are no longer subject to any duties once that begins. Sanctions for breaches of duty are varied and range from orders made for monetary sums in civil courts to imprisonment in criminal proceedings.

## **2.2 Institutional framework**

Most countries do not have specialist insolvency or bankruptcy courts – the most that can be said is that cases are heard by commercial court judges with substantial experience of business law matters. The Insolvency Regulation implements a philosophy of Euro universalism. Main insolvency proceedings opened in one Member State where the debtor has its centre of main interests (COMI) are stated to have universal scope and aim at encompassing all the debtor's assets wherever they are situated throughout the EU. There is also the possibility of opening secondary insolvency proceedings in a State where the debtor has an establishment and these proceedings.

## **2.3 Ranking of claims and order of priorities**

Main insolvency proceedings have universal effects and apply to all assets of the debtor whereas the effect of secondary proceedings are limited to assets of the debtor within the territory of which State secondary proceedings are opened. In some countries secured creditors are paid first after the costs of the insolvency proceedings have been taken care off. Indeed, secured creditors can effectively opt out of the insolvency proceedings and realise their secured property separately. In other countries, employee claims are treated as priority claims and may get paid first even ahead of secured creditors.

## **2.4 Avoidance and adjustment actions**

Perhaps the most notable and unusual feature of avoidance rules is that they provide for the setting aside of transactions that were, at the time that they were made, generally valid and not vulnerable to challenge. The various Member States obviously have different approaches to a number of the kinds of transactions that are subject to possible avoidance. The States differ in the complexity of their avoidance regimes. Some have an elaborate regime, while others provide a somewhat less elaborate scheme.

## **2.5 Procedural issues related to insolvency proceedings**

There are various kinds of formal insolvency proceedings that exist. But they generally tend to be divided up into liquidation proceedings and restructuring proceedings. Before formal insolvency proceedings are opened the debtor company must usually be in some significant financial distress. For the most part the legislation of EU members require a company to be insolvent, but they have different ways of expressing it and also different ways of defining similar concepts related to insolvency. Many EU members also allow for the opening of insolvency proceedings when companies are unable to pay their debts based on either a cash flow test or a balance sheet test. There is some kind of advice given or available to creditors concerning the opening of proceedings in all Member States. It seems that there are three general approaches evident in EU members. First, the opening of proceedings is noted in a register and creditors are not advised individually or by any notices. Second, the opening has to be inserted in some official journal or local newspapers. Third, the court notifies creditors who are known at the time. All of the creditors of a debtor company are not able, especially where there are a large number of them, to be involved in the administration of the debtor's affairs. Hence, in the vast majority of jurisdictions a creditors' committee may be appointed and its general role is to safeguard the interests of creditors. The amount of input that committees have in the administration of the insolvency varies. Normally a simple majority suffices, but in some case a special majority, often 66.66% or 75%, is needed.

## **2.6 EC Recommendation on a new approach to business failure and insolvency**

The Recommendation encourages Member States to "put in place a framework that enables the efficient restructuring of viable enterprises in financial difficulty" and to provide for "minimum standards on preventive restructuring frameworks." The Recommendation also encourages Member States to put in place a framework to "give honest Entrepreneurs a second chance" and to provide for "minimum standards" on the "discharge of debts of bankrupt Entrepreneurs."

## **2.7 Second chance for individual entrepreneurs**

All Member States offer to the Entrepreneur either some sort of Bankruptcy, or Debt Settlement Procedure, or the availability of both, although these procedures may not include Discharge of debt. Where Debt Settlement Procedures are not available the Entrepreneur will normally still have access to Bankruptcy procedures available to corporate debtors.

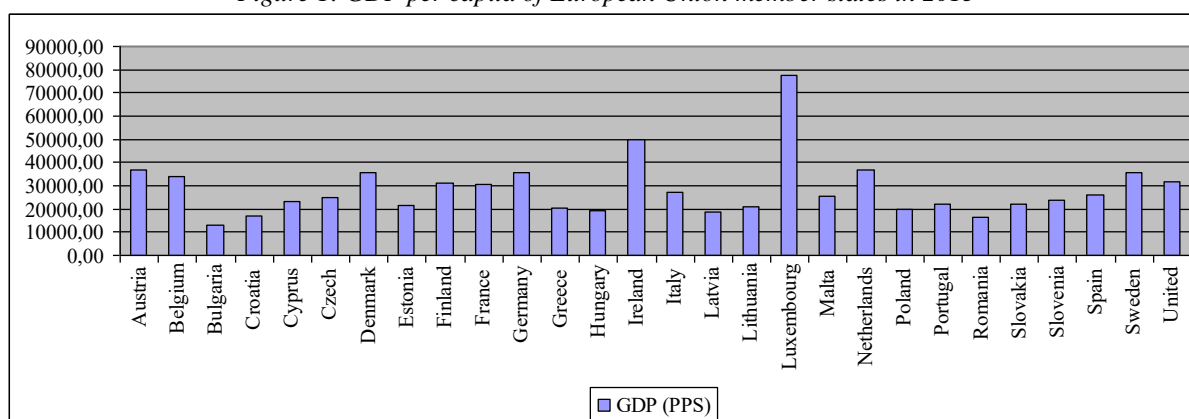
### 3. Insolvency law of EU member states - convergences and divergences among legal systems and their economic implications

The European Union is a specific supranational entity in which, despite the proclaimed common consolidated positions and policies of its Member States, it is evident striking national pressure to preserve own sovereignty of state power as much as it is possible. All mentioned above is understandable, not only with regard to the historical and political background of the Member States, but also due to the current market situation.

This fact is a significant factor affecting the harmonization efforts within a uniform harmonised insolvency law codification which should be capable to improve Europe's market environment and make commercial relationship between businesses from different Member States more dynamic. But effective harmonization is possible only after previous analysis of economic, market and regulatory attributes insolvency issues. Their representative framework indicators are: GDP per capita, the annual change in the number of insolvencies and the index of national insolvency law strength.

Figure 1 shows the evolution of the indicator GDP per capita in the EU Member States in 2015. Reached values indicate the variable quality of the national market environments.

Figure 1: GDP per capita of European Union member states in 2015



Source: own processing according to <http://ec.europa.eu/>

The average value of the indicator GDP per capita in the Member States of the European Union is 28,446 €. Above average values are achieved by Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembuorg, Netherlands, Sweden and United Kingdom.

Table 1 shows interannual comparison of the corporate insolvencies quantity and of the national insolvency law strength. Its explanatory power lies in the verification of national environments diversities whose consideration is necessary in the process of effective insolvency law harmonization.

Based on obtained data, it can be detected preferential insolvency laws, which should form the basis for harmonization of corporate insolvencies legal solutions in the context of the European Union. These should be laws of the countries which analyzed indicators values are above average in all assessed areas, i.e. increase in the number of bankruptcies less than -2.78% and the index of insolvency law strength more than 11,60.

Table 1: Convergences and divergences between quantity and quality of insolvency cases in EU member states

Member state	Corporate insolvencies			Strength of insolvency law (0-16)		
	2015	2014	2014/2015	2015	2014	2014/2015
Austria	5 422	5 600	-3,20	11,00	11,00	0,00
Belgium	9 762	10 736	-9,10	11,50	11,50	0,00
Bulgaria	1 083	1 031	5,00	13,00	13,00	0,00
Croatia	20 531	7 776	164,00	12,00	12,00	0,00
Cyprus				6,00	6,00	0,00
Czech Rep.	3 004	3 563	-15,70	13,50	13,50	0,00
Denmark	4 029	4 049	-0,50	12,00	12,00	0,00
Estonia	376	428	-12,10	14,00	14,00	0,00
Finland	2 574	2 954	-12,90	14,50	14,50	0,00
France	61 379	60 853	0,90	11,00	11,00	0,00
Germany	23 180	24 030	-3,50	15,00	15,00	0,00
Greece	189	330	-42,70	12,00	12,00	0,00
Hungary	47 131	60 506	-22,20	9,00	9,00	0,00
Ireland	1 049	1 164	-9,90	10,00	10,00	0,00
Italy	16 015	16 101	-0,50	13,50	13,50	0,00
Latvia	878	964	-8,90	12,00	12,00	0,00
Lithuania	2 012	1 594	26,20	8,00	8,00	0,00
Luxembourg	873	845	3,30	7,00	7,00	0,00
Malta				7,50	7,50	0,00
Netherlands	5 271	6 645	-20,70	11,50	11,50	0,00
Poland	844	864	-2,30	12,50	12,50	0,00
Portugal	7 288	6 773	7,60	14,50	14,50	0,00
Romania	10 269	20 696	-50,40	13,50	13,50	0,00
Slovakia	715	831	-14,00	13,00	13,00	0,00
Slovenia	1 154	1 302	-11,40	11,50	11,50	0,00
Spain	4 916	6 564	-25,10	12,00	12,00	0,00
Sweden	6 432	7 158	-10,10	12,00	12,00	0,00
UK	15 952	17 660	-9,70	11,00	11,00	0,00

Source: own processing according to <http://www.creditreform.cz/> and <http://www.doingbusiness.org/>

## 4. Conclusion

Finland, Germany and Sweden were detected as countries with highest penetration of rated indicators in all assessed areas. Therefore, their insolvency laws would be considered as crucial in the process of creating a single harmonized insolvency law in the EU. Only then it will be possible to achieve effectively objectives of single market sustainable development.

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## THE REALIZATION OF INTANGIBLE PROPERTY AT THE INDIVIDUAL'S LEVEL

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**Abstract.** The article is devoted to the essential distinction between human potential, human capital and fictitious human capital. The fictitious capital is the capital which unlike real does not represent material and material or cultural wealth, and unlike loan there is no monetary capital. The feature of human capital associated with profit generation, formed the basis for determining the fictitious human capital. The features of investment in human capital are defined such as return from investments to the human capital, wear and tear of human capital, the nature of investments into the person, investments effectiveness, and the process of investing. There are some levels of human capital formation, for example, physiological, intellectual and spiritual. Besides differentiation of the categories "capital" and "potential" it is expedient to consider the property rights which can arise on intangible objects at the certain individual. The average return of receiving the higher economic education is calculated. The article describes the features of tangible and intangible alienation of human capital at the different levels. Processes of alienation at the level of the individual also have specific character; conditionally we can allocate two groups of alienation: tangible alienation and intangible alienation. We considered objects of property and the rights which the individual has and can dispose.

**Keywords:** intangible property, human capital, fictitious human capital, tangible alienation, intangible alienation

**JEL Classification:** O15, I2, O3

### 1. Introduction

There are some subjects of property, such as the separate individuals, businesses, and government and society as a whole. Nature of the right, intangible objects concerning which there are relations of property change depending on level on which them to consider. The intangible property at the human's level can be considered from the standpoint of classical political economy and from a position of institutional economics. We examine the human capital as an object of property, which is the most capacious category. However, in relation to the individual we can consider three categories: human capital, human potential and fictitious capital. We suppose it is necessary to decide initially on categories the capital and potential. In conventional understanding, the potential is the ability of a person to a particular activity. In our opinion, the potential suggests the possibility of individual, the possession of necessary

physical, intellectual and other resources for transformation of these properties and resources to the human capital. The existence of the potential does not lead to receiving profit by the individual yet. We consider that potential distinguishes from the capital still that factor that for obtaining potential the individual doesn't spend additional intellectual, human and material resources. For example, genetic ability to run is the human potential of the individual whereas the ability to run acquired as a result of long trainings already is the human capital. The famous scientist, the Nobel laureate D. Heckman proved that the earlier to start investing in the individual, first of all, money, the return will be higher subsequently. (Heckman, 1994).

## **2. Characteristics of the human capital**

### **2.1 Literature review and hypotheses**

We distinguish the following features of human capital investment:

- Return from investments to the human capital depends with age of the carrier (to consider an aging measure), and also with carrier life term;
- Wear and tear of human capital is determined by carrier obsolescence degree, as a result of knowledge obsolescence, and by loss of skills and it is a risk of value change of received education;
- The nature of investments into the person may be caused by historical, national cultural features, and also education level of their parents. The probability of choosing a profession according to the family traditions it is not included;
- Investments effectiveness depends on the initial human potential of the individual;
- The process of investing is not subject-object, it is subject-subject character which demands efforts by individual (the knowledge acquisition is not one-way process, it requires activity from trained).

There is a probability of risk emergence of the following character – impossibility to the right degree to guarantee the expected result.

Thus, the capital answers two characteristics:

- To purchase it demands expenses from the individual of human, intellectual and material resources;
- Makes profit.

And, if the first characteristic is carried out, but thus there is no second, we can say that is the fictitious human capital.

The fictitious capital is the capital which unlike real does not represent material and material or cultural wealth, and unlike loan there is no monetary capital. The fictitious capital does not function directly in production. The fictitious capital is presented usually by the securities granting the right to their owners on obtaining the income in a type of percent, dividends. The name "fictitious" is caused by that such capital in itself does not create the income, the profit, and only promotes redistribution of the income. (Fakhrutdinova, 2015).

We will consider in more detail the fictitious human capital. So, J. Byichenko and T. Balandina state that financial costs, which generate the process of improving human potential, will eventually form the human capital. (Kamasheva et al., 2013). This thesis corresponds to our idea of characteristics of the human capital (demands investments). A. P. Kolyadin, as an

example of fictitious human capital, incomplete mastering competences of the course of receiving the higher education, the irrational structure of release of experts which is not meeting the requirements of labor market brings. (Hembruff, 2014). However, we think, that fictitiousness of the capital is shown mainly at inexpediency of investments into the human capital. A. P. Kolyadin connects the capital fictitiousness with one of its properties – impossibility of a full assessment prior to its use, it is so impossible to estimate quality of education, development of competences of the accepted worker before he starts the responsibilities. For a preliminary estimate of the similar capital diplomas about the higher education, certificates, participation in groups, and others are created.

We, in turn, believe that the fictitiousness of the human capital can be expressed not only in discrepancy of status manifestations and the real (located) capital, but also that the located human capital is not used by the individual and does not bring in it the income or provides its competitiveness. As an illustration of this manifestation of the fictitious capital it is possible to consider the doctor who works, for example, as the sales manager. In this case, the person possessed a certain potential for development of a profession of the doctor, carried out investment (i.e. he got medical education), however further couldn't take the income from the available capital, as does this human capital fictitious.

## **2.2 Levels of the property rights of the individual**

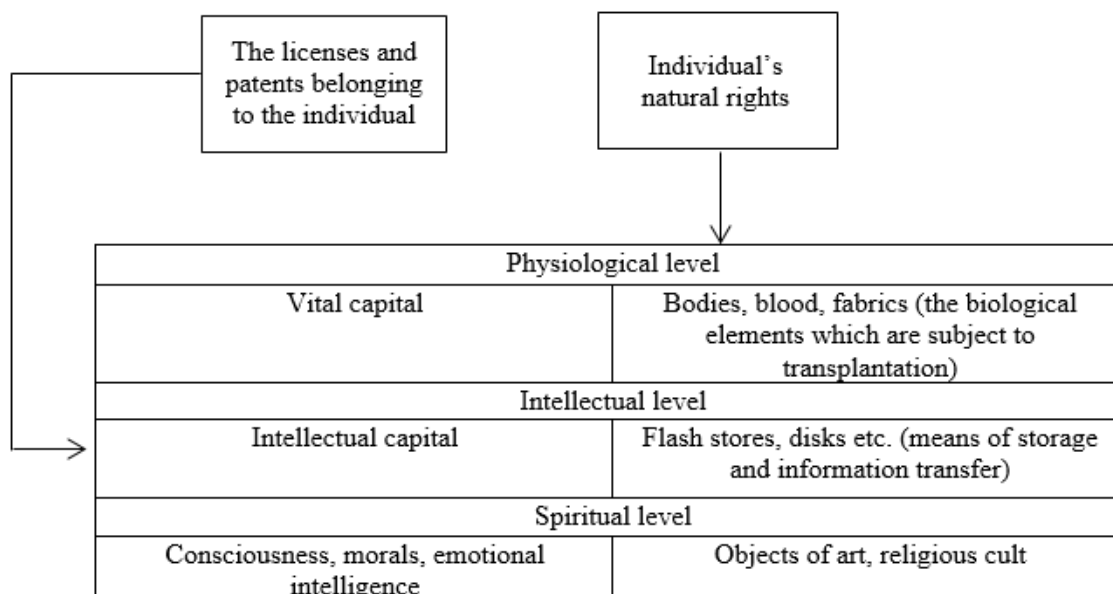
Besides differentiation of the categories "capital" and "potential" it is expedient to consider the property rights which can arise on intangible objects at the certain individual. From the legal point of view for the individual the natural rights are enshrined in the Constitution and various international conventions: the right for life, the right for freedom and security of person, the dignity of the personality, the right for a freedom of worship, freedom of worship and others (<http://www.constitution.ru/en/>). However, these rights belong to the individual, but cannot be commercialized and do not bring in the income in standard conditions (the democratic constitutional state) as are not a rare resource and they allocated all in equal volumes.

The aim of the article is consideration of intangible property rights inseparably linked with the individual. The individual can act as the subject of the property rights and has rights of possession for licenses, patents, etc. However, these rights are most isolated from directly individual and can be alienated. It is possible to distinguish physical abilities (the vital capital) from the objects of intangible property which are directly connected with the individual. Created on the basis of health and developed to opportunity to bring in the income.

For example, the loader earns due to the physical abilities, the athlete also earns at the expense of the vital capital, however, and for its acquisition it carried out more investments and developed certain abilities that allow it to count on the bigger income.

So, the average salary of the football player of a premier league of Russia makes 66 million rubles a year (<http://www.politforums.net/>), whereas an average salary of the loader – 312 thousand rubles a year as of the end of 2015 (<http://www.politforums.net/>). If to consider the individual from the point of view of his biological component, the person can possess a certain level of health – it can be considered as biological (human) potential. It is possible to allocate with the tangible biological objects which are subject to alienation bodies, blood, ova, etc. Thus, in relation to the individual it is possible to allocate some levels on which perhaps tangible and intangible alienation in favor of obtaining the income.

Figure 1: Levels of creation of the capital at the individual level and forms of its objectification



Source: Was created by author

### 2.3 Sample and data collection

The person has knowledge and abilities to generation of new ideas at the intellectual level. The individual realizes the intellectual potential, carries out investments into acquisition of new knowledge, and then the gained knowledge, by means of alienation on a workplace is commercialized. Investments into education are considered as the most profitable. "It is very profitable business – for 1 ruble of an investment 2 rubles of profit are got". (Kolesnikova et al., 2015, Leslie, 1988).

The average period of investment into education makes about 12-20 years, and in the health capital of people makes investments during all life.

To the expected return from investments into the human capital carry higher level of earnings, bigger satisfaction from the work, prospect in career development to the expected return, improvement of working conditions, etc. The relation to education as to a source of future income found reflection in results of the sociological surveys conducted in the mid-eighties in the countries with is market adjustable economy. Economic motives of education were called as respondents by 3.5 times more often than not economic: 83% of respondents sought to get an education to have the best work, 72% - to increase the abilities to earnings, 70% - to earn more money (<http://kpfu.ru/eng/>). Education cost in the Economy direction at the Kazan Federal University for 4 years of a bachelor degree made 576 thousand rubles for 2015-2016. Thus the average salary of the economist makes about 30 thousand rubles a month. (Safina et al., 2015). It is possible to calculate a payback period of the got education approximately.

The average interest rate for deposits of natural persons made about 10%. (Kolesnikova et al., 2014). We will carry out discounting annual and we will accept that the average annual salary of the economist will make 360 thousand rubles.

Table 1: Calculation of return on investment in education

Indicator, thousand rubles	0	1	2	3	4	5	6	7
Cash flow	-576	0	0	0	0	360	360	360
DDP (i = 10 %)	-576	0	0	0	0	224	203	185
The saved-up DDP	-576	-576	-576	-576	-576	-352	-149	+36

Source: Was created by author

The period of payback pays off as follows:

$$T_{pay} = N_{y.p}^0 + \frac{C_{uncom}}{DDP_{y.p}} \quad (1)$$

Where  $N_{y.p}^0$  – Number of the years preceding year of payback;

$C_{uncom}$  – Uncompensated cost for the beginning of year of payback;

$DDP_{y.p}$  – The discounted cash flow in a year of payback.

$$T = 6 + 149 / 185 = 6.8$$

Thus, the payback period of education is rather long. From the moment of primary investments and to full payback passes about 6,8 years, that is about 3 years after the termination of a bachelor degree. And, the university graduate cannot always find a job and receive an average salary by profession, as a rule at an initial stage it is lower than average value. The individual can take out certain patents and licenses for the knowledge that promotes their commercialization. These objects of intellectual property are already a little mediated from the individual. Alienation of intellectual property happens to the help of such material objects as books, flash stores, disks, and others. These material objects promote replication of intellectual product; various contradictions of alienation of intangible property are created.

Spiritual level is presented by norms of morals and moral, consciousness and outlook of the individual. Even existence of the spiritual beginning of the person admitted K. Marx's materialism. For K. Marx "... the essence of the person is made not by (with) its abstract physical nature, but its social quality". The structure of social life, in a general view, is presented by the relation of economic basis as unities of productive forces and relations of production and a superstructure (morals, the right, philosophy, religion and art). (Starn, 2015, Correa & Vinuales, 2016).

We consider that the creativity connected with creation of songs, pictures can't be considered fully intellectual activity as often it is carried out by the individual at the intuitive level and does not demand special knowledge. Thus, we consider that the individual creates objects of intangible property at 3 levels on which the rarity of this resource, alienability and commercialization, so and compensation of the individual depends: vital (loader, athlete), intellectual (accountant, scientist), spiritual (priest, artist). At these levels the individual can reach a certain level of professionalism therefore its demand and payment for it will differ within one level, and the loader and the world-class athlete alienate the physical skills, however the order of their salary will be various. The athlete carried out more investments into the vital capital thanks to what he seized rare abilities unlike the loader.

## 2.4 The features of tangible and intangible alienation of the rights

As we revealed earlier, the defining character as gives the chance of commercialization has the right of alienation. Processes of alienation at the level of the individual also have specific character; conditionally we can allocate two groups of alienation:

- Tangible alienation;
- Intangible alienation.

Material alienation by the individual at the physiological level can be connected with donorship. However, in the Russian Federation bodies and (or) tissues of the person can't be a subject of purchase and sale. Alienation of reproductive fabrics on a paid basis (ova, sperm, ovaries, small eggs or embryos), and also blood and its components which alienation can become a subject of purchase and sale, so the commercialized asset is possible. The cost of ova can vary from 35 to 50 thousand rubles. The surrogacy can also be considered as one of examples of alienation of the vital capital, because the woman, in fact, spends her health for incubation of a fruit. The cost of services in surrogacy makes more than 500 thousand rubles, compensation of monthly expenses. According to the Federal State Statistics Service, the Russian Association of the Reproduction of the Person, the Charity Foundation «Birth Formula» in 2012 the volume of substitute motherhood grew and made 336 people of/1 million inhabitants against 282 people of/1 million inhabitants in 2011. The given indicators testify that now, despite transition to information society where the share of an exchange of services and information increases the market of purchase and sale of the vital capital continues to increase the volumes, there are new opportunities of alienation caused by development of science and equipment. This tendency testifies that, passing to information society, the physiological level of alienation, does not lose the relevance, and is transformed; using new technologies, new forms of alienation of tangible and intangible property (transplantology, the sports industry, show business, etc.) are born.

At the same time alienation of the vital capital can happen not only by means of tangible alienation. Tangible alienation assumes full or partial transfer of material object of property. Intangible alienation is connected with replication of non-material object of property (information, scientific development, etc.).

Developing productive forces, the person more and more takes root into the natural biological processes regulating his body thus differently changing their course, for example, by means of various pharmaceutical preparations. Besides that, today the person learned to create the mechanical artificial limbs of extremities integrated into nervous system and, most likely, in the future he will be able fully to create to himself artificial organs and to regenerate fabrics. This example, in our opinion, illustrates communication of physiological and intellectual individual's level. We suppose, that carrying out a physical activity in favor of receiving a salary, in fact, we alienate the vital capital. Working physically, the individual is exposed to risk of receiving various diseases, injuries and so forth, there is something similar, as well as to depreciation of the equipment. According to official figures the number of victims in case of accidents on production in 2014 made 31.3 thousand persons. (Cohen, 2016). The intrinsic characteristic of a salary is based that it has to compensate intellectual and physical expenses of the individual.

Natural human rights are the right to have normal physiology (health) and psychology, the right for life and the right for natural death, the right to breed and have a family. At the same time debatable is a question, the ban of euthanasia is how lawful and whether deprives it the



individual of the right to death. Lack of a standard tax deduction on a tax on the income of natural persons and increase in a deduction on children in the hidden look represents a tax on childlessness that, in our opinion, is violation of natural human rights.

### 3. Conclusion

On each of the presented levels of the individual it is possible to consider the full owner of intangible property only if he can freely dispose of the rights at this level.

At the individual level there also can be objects of intangible property and the human capital which will be inalienable. So, for example, the third party cannot transfer the acquired right of the individual for driving. The individual can even alienate the ability to operate the car by training of the third party, but to transfer the right acquired from the state it won't be able. Part of abilities can also be inexpressible and inalienable, for example, the sports abilities connected with existence of special physical data. The individual can't transfer, as a rule, in total both physical data, and the fulfilled skills.

Debatable and rather difficult is a question of alienation at the spiritual level. In fact, distribution of religion, philosophical currents, and different types of art is a form of spiritual alienation. In the conditions of democratic society the state does not control different types of creativity and art which the individual can propagandize, however there is a list of the forbidden religious organizations, thus, it is possible to draw a conclusion that alienation at the spiritual level difficult gives in to control, is seldom commercialized.

Thus, we considered objects of property and the rights which the individual has and can dispose. Features of human potential, the human capital, and investment into the human capital are marked out. The defining feature of the human capital is the individual's investments in his acquisition. The characteristic of the human capital connected with formation of profit formed the basis of definition of the fictitious human capital. Various levels of possession of the human capital are considered: physiological, intellectual and spiritual. Distinctions of alienation of the tangible and intangible capital at these levels are defined.

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## SLOVAK RETAIL IN ERA OF GLOBALIZATION

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**Abstract.** Over several last years we have witnessed establishment of micro-companies that operate at the same time retail outlets and an online shop with the same range of products in our area. These will be the subjects of our research. In the paper we would like to have a closer look at the reasons that led owners to this decision and whether they were prepared to domestic and foreign competitions in the online environment, the benefits of operating a physical shop and an online shop at the same time, as well as marketing decisions on target markets, assortment, pricing, marketing communication and distribution. The objects of our interest are micro-companies operating in the region of Nitra, which despite its relatively favourable geographical position in the southwest of Slovakia has been struggling with low labour productivity and unemployment, which is reflected in the level of pays and the development of trade and services. As the owners of selected objects of research do not have professional education in the field of marketing, they make all their decisions either on the basis of the results of the observation of successful international retail chains or on the basis of their own consideration using the method „trial and error“, which leads to frequent errors. Theoretical outcomes on retailing, commercial operations, online shops and decisions of retailers will be supplemented by practical examples. Out of marketing decisions we will focus primarily on marketing communication in the global media, on social networks and at the points of purchase.

**Keywords:** micro-company, globalization, retail, online shop, marketing communication

**JEL Classification:** M31

### 1. Introduction

Our personal experiences with the selected objects of examination have led us to the elaboration of the chosen topic. There was already devoted enough attention to the issue of online trading applied to established businesses, often large multinational chains with a generous budget and sophisticated marketing. However, small and even micro-enterprises, which operate one physical store and one or two online stores in rented premises without excessive budgets have received little attention so far. We consider the selected topic necessary to present in the context of theoretical outcomes of retail trade executed in network of shops and outside of sales network.

### 2. Physical store vs. online store

From the perspective of place, where the processes of buying and selling take place, we distinguish retail trade performed in chain stores and retail trade performed out of sales network. The main forms of retail outlets outside the network are vending machines, direct sales, mail

order and e-commerce (Cimler et al., 2007). The object of our research is the online store. „*Electronic commerce is a place where Internet users can buy goods or services via their computer, tablet or mobile phone* “(Janouch, 2014). In connection with an online shop P. Kita uses the term virtual shop. According to him, virtual shop is „*a trading venue visualized by the website on which it is possible to on-line identify, choose, order and purchase search products*” (Kita, 2013). Its main idea is to move the offer of a physical shop on its website in order to make available goods and services to largest number of customers within the area of interest, or even beyond. Virtual shop is a part of e-store (Miklenčičová, 2015).

Zamazalová (Zamazalová, 2009) distinguishes three main categories of online stores: e-shop with physical stores, e-shop without physical stores and e-shop as a complement to the physical store. Unlike Zamazalová, P. Kita writes about strategies of the creation of a virtual store, as follows:

- Concentrate activities solely on a virtual store that is selling at a distance, while the virtual store must offer products that are not sold in physical stores.
- Focus on a physical store, while a virtual store acts as an information and promotional tool. This ensures that there is no competition between these two channels, i.e. one distribution channel is not developing at the expense of another, which could lead to dual costs.
- Combine the offer of the physical store with the possibility to order products via the Internet. Virtual store is becoming a complementary tool of the physical store. In this case the purchase through the virtual store eliminates the shortcomings of the physical stores, such as, for instance waiting in a line to pay, opening hours, and availability of shop assistants (Kita, 2013).

The strategy of product mix of the online shop depends on these decisions. A factor of successfulness is the broad and deep assortment. An online store may offer:

- An identical range as a physical shop, with which it will enlarge the coverage of the sales territory also outside the shopping area of the physical store.
- The same range as a physical shop, complemented by products that cannot be stored in a physical store for the lack of space.
- Complementary range, i.e. assortment of goods offered exclusively by online stores that a physical store does not offer.
- A completely different assortment (Kita, 2013).

The advantages of e-commerce include speed, time availability and the possibility of measurement and evaluation of almost every activity. The offer is at disposal right after posting almost continuously (7 days a week, 24 hours a day) and as the Internet is an interactive medium, it allows customers an immediate response, for example through an online chat. However, the advantages of e-commerce are more favourable for customers than for its operators. Hypercompetitive environments constantly push down the prices of the sold products, which forces operators to look for new ways how to inform, persuade and remind customers of their offer (Rybanský & Málíková, 2015).

### **3. Current situation in Slovakia**

Respected Slovak online retailers open increasingly more physical shops. They say that while having them they are more reliable for customers and customers can try the goods, pick

it up and also return it in them and this way they increase profits. They open physical shops in shopping malls, but also in busy streets. For example, an online clothing store Zoot has been building physical shops, the online bookshop Martinus is coming back to the physical stores and online shops Mall.sk and Alza.sk have manifested interest in their own physical shops in shopping malls (Folentová & Čimová, 2016). Moreover, at the end of 2015 the global e-shop Amazon (bookshop „Amazon Books“) opened its first physical store in Seattle. Reasons that lead online stores to build physical shops and dispensaries of goods are conservative shopping habits in purchasing by Slovaks. Despite the fact that Slovaks buy more and more in online stores, in fact they continue to favour the possibility of a personal pickup. For instance, only in supply points of goods of the online store Alza, two thirds of customers picked up their orders in 2014. Customers prefer personal collection mainly due to lower or even no price for delivery of goods, distrust of payments over the Internet, possibility of control over the collected goods, possibility to claim and return the goods rather easy, but also reduced waiting times for the goods.

From building physical shops there arise benefits not only for the customers, but also for the e-shop owners. While using the Internet, people usually buy thoughtfully, with an explicit aim of the purchase; in physical shops they behave much more impulsive. For example, while from an online bookshop a customer usually orders only one book, they usually take more from a physical shop. The customer likes to get advice from the staff and can be affected by the wide choice of the goods (Zaušková & Mendelová, 2015).

However, it is obvious that mainly small or medium-sized independent online shops cannot afford to open their own physical stores or supply points of goods. They satisfy customer need of personal collection of the goods by e.g. supply points of goods or storage boxes. Instead of delivery home or to the post office, couriers of online shops deliver goods from the e-shops directly to supply points (e.g. grocery, hairdresser, and gas station) (balikovapreprava.sk) or storage boxes (the so-called packet dispensers).

#### **4. Objects of research – current state**

The region of Nitra can be classified as industrial and agricultural, whereas in Slovakia it belongs to slightly lagging regions. The development pole of this region is formed by the city Nitra and towns Zlaté Moravce and Levice. Counties of the south-eastern part of the region are marked by a typical combination of agrarian rural area and a town with a small number of supporting industrial activities with low levels of diversification. The crisis of industrial plants in the cities in the process of ownership change and restructuring has led to a decline in key industrial activities. Some of the main industrial activities are revived, but they could not replace the scope of the original employment. In the region, the most developed industries are paper, chemical and machinery industries. Parts of the economically active population in the region commute to work to other regions or neighbouring countries. In 2015 the average monthly pay was 868 Euros in the region of Nitra (in the county of Topoľčany 843 Euros) and was the third lowest one after the regions of Prešov and Trnava. The highest nominal pays are in the sector of financial intermediation, distribution of electricity, gas and water and in the area of real estates (sario.sk).

The objects of our research are independent traders operating in parallel their own physical store and an e-shop: Baranik.sk, Top-auto.sk and Tortičkovo.com. Through the e-shop they offer the same range as in their physical shop, complemented by products which a physical

shop cannot store due to the lack of space. Common features of the examined objects are as follows:

- Family businesses with tradition. The owners continue in their previous occupations (Tortičkovo.sk, Creative-sk.sk - confectionery, Top-auto.sk – road transport) or began to develop personal interest activities (Baraník.sk – beekeeping).
- Relatively short operation in the given areas. All examined objects are active on the market for less than 10 years. During that time they managed to build two sales channels: a physical shop and an e-shop.
- Main office and physical shops in towns. Towns, from which these family firms serve the market, have less than 5 000 citizens. Only the owner of Tortičkovo.sk and Creative-sk.sk had left the village Bojná after approximately 6 months and rented premises in the county seat of Topoľčany. Neither from the above mentioned towns does not belong to significant economic and social centres of the Nitra region, however they are located on the main transportation routes and in admissible distance from several of the regional centres: Cabaj-Čápor (Nitra - Šaľa) and Lipovník (Topoľčany - Piešťany). This location allows rather easy supplying (regarding the routes of the delivery), using domestic and international courier services together with rather convenient access of the physical shops for the customers. Location of physical shops supposes that customers are motorized.
- All examined objects register customers not only from the location of the physical shop, but also from the natural catchment area, or from more distant areas. As far as the customers from more distant areas are concerned, these are often customers practicing the job of a commercial agent, courier, driver of the distribution (thus occupations in which physical shops are placed on their routes, or can slightly deviate from it) or customers, who plan their purchase as a stopover on a family trip. These customers usually plan their purchase in the physical shops, therefore, they order goods though an e-shop in advance with a note – to be picked up in the physical shop. Customers from the place where the shop is located or from natural catchment area buy purposefully in the mentioned shops – due to the need or lack of something or when commuting to or from work, when seeing a doctor, attending school and buying at a shopping centre and so on.
- Objects of our investigation offer in their virtual shops wider assortment than they have at disposal in their physical shops. The reason for this is often price sensitivity and different demand of customers, keeping up with the competitiveness in the online environment and supplying just-in-time.
- Owners do not have special education in the area of trade or marketing, or even specialization in marketing communication. As far as we know, they do not complement education in this area. All activities related to the market, including marketing communication with the target groups, are performed intuitively or through imitating of multinational retail chains. Facebook profiles and web sites are also processed in a self-helpful way.

#### **4.1 Baraník.sk**

The history of the company Baraník.sk started in 1992, when the owners started with beekeeping in a professional way. Long-time professional beekeeping, production of honey and wax led the owners to the design, production and sale of beekeeping equipment (e.g. honey dispensaries, hives, work and protective equipment, medicinal products, professional

literature). In 2007 in the village of Cabaj – Čápor they opened a shop with beekeeping supplies and in 2010 an e-shop with beekeeping supplies. The primary target group involves amateur and professional beekeepers; the secondary one includes manufacturers of candles from bee wax.

The village is located in close proximity to the regional and district city of Nitra (about 5 minutes by car), i.e. it does not constitute a catchment area, but it is located in close proximity to the centre of the catchment area. Customers are mostly motorized.

The owners communicate with their target groups mainly through websites and social network Facebook. The website is in Slovak language, but it also has a Czech and English versions, since they send the goods aboard as well (baranik.sk). Considering tolls of marketing communication, apart from personal sales and participation in exhibitions and fairs, they also work with support tools in the form of „product of the week“ and „discount“.

#### **4.2 Top-auto.sk**

The owner of the e-shop Top-auto.sk and Top-moto.sk and the physical shop Autosúčiastky (car components) Lipovník has operated on the Slovak market since early 1990tieth. He began to sell car equipment and car accessories (e.g. car batteries, wipers, tires, tools) in 2010 by opening the physical shop in the village of Lipovník. He started to build the e-shop with the same assortment, but under the brand Top-auto.sk in 2013. The website is in Slovak language, however, the goods are also sent to the Czech Republic.

The village of Lipovník lies on the traffic joint of the towns Topoľčany and Piešťany. Its location – relating the centres of the higher level, main traffic arteries and the technical infrastructure with the regional and national importance is relatively favourable (e.g. from the town Topoľčany journey by car takes 15 minutes, from the town Piešťany it takes 22 minutes) Nevertheless, it does not represent any catchment area.

The primary target group of the e-shop and the physical shop involve owners of vehicles (individuals and households); the secondary target group includes neighbouring small auto services, agricultural cooperatives, villages and other entrepreneurial subjects. The customers are mostly motorized. The owner communicates with his target groups personally in his physical shop, out also using his website. He does not use the potential of the social networks. He provides number of loyalty discounts to selected customers.

#### **4.3 Tortičkovo.com**

The online shop and the physical shop Tortičkovo.com and the e-shop Creative-sk.sk started their history in 2010. The owner went into business in the area of confectionery equipment under the impulse of his wife. First of all, they started to build the brand of the e-shop Tortičkovo.com covering a shop with confectionery equipment, ingredients and decorations (for example coating material, cutters, stands and trays, edible pictures).

After successes they had experienced with the e-shop, in 2014 they opened a physical shop in Topoľčany. Topoľčany is a natural industrial, trade, cultural and social centre of more counties: Topoľčany, Partizánske and Bánovce nad Bebravou. In 2014 they enlarged their business into the sphere of production and sale of silicone forms using the brand Creative-sk.sk with foodstuffs and soaps. They send orders from the e-shop also into the Czech Republic. However, the website is in Slovak language, it has no other language versions.

The primary target groups are amateur and professional confectioners; the secondary target group involves women who like baking and trying confectionery equipment and ingredients. The owner communicates with his target groups personally in the physical shop, out of the shop using the website, social network Facebook, by advertising in the free newspaper Kaufland Topoľčany and by presentation of the physical shop in the browser of companies called mojetopolčany.sk. Out of all examined subjects the owners use the potential of the social networks to a significantly larger extent. They make posts on a daily basis. As far as the content is concerned, they are focused on for example reminding the opening hours, informing on delivery of the goods, giving tips for decoration of cakes, etc.

#### **4.4 Assessment of communication in the global network of Internet**

Despite the fact that according to the last published data there are more than two million Slovaks registered on Facebook (Kusá et al., 2014), only the owner of the brand Tortičkovo.com uses the potential of this social network. Although he has been switching different formats of posts on the corporate profile, he has not got them arranged in an edition plan. He makes posts on a daily basis, as far as the content is concerned, they are focused on e.g. reminding the opening hours, informing on storing the goods delivered, giving tips on decoration of cakes and „sharing“ contests.

Top-auto.sk has a common profile for the physical shop and the e-shop. However, since its establishment in 2012 the owner has not made many posts. Their content consists of the offer of selected goods or recommendations for seasonal maintenance of the cars. There are no Likes or Comments to the posts. The owner does not even deal with the edition plan or format of his posts.

Baranik.sk set up its corporate profile recently, in May 2016. Within few months, the owner has made only few posts from the category hits for beekeepers and usage of selected products in practice. There are Likes and Shares to the posts.

A common feature of the corporate profiles of the investigated subjects is the fact that posts are made randomly, in Slovak language, without an edition plan, majority of them does not enhance fans to sharing or discussion.

Investigated subjects run their e-shops in the graphic patterns of the supplier. This limits their layout of the site, its colour combination, font and so on, which has an impact on navigation of customers on the websites of the e-shops. The owners also underestimate the power of images (pictures of the products are in low definition), the detailed description of sold products (there is missing information on e.g. proportions or material), but also grammar and stylistic mistakes.

### **5. Conclusion**

The subjects of our investigation were small family businesses with tradition (Čábyová et al., 2014), operating in given areas of business for a relatively short time, whose owners do not have special education in the field of trade or marketing. As we have already mentioned, all activities related to the market, including marketing communication with the target groups, are executed intuitively or through imitating multinational retail chains. However it is rather questionable, how long these e-shops can keep up the obtained market share, or even further expand. We recommend the owners to consider, in the limits of personal and financial



possibilities, further education, following specialized periodicals and trends in the trade or cooperation with experts. It is again uncertain if they were willing to allocate funds for experts, who would propose them more modern websites with a fast navigation, elaborate an edition plan for the Facebook profile, recommend running their own blogs or if the owners have even ambitions to improve anything on current state. Further development of the physical shop is not that questionable, as we believe that the point of purchase, assortment, personal communication, providing sufficient services and others have a more intensive impact on customer's decision-making and loyalty than an impersonal website.

### Acknowledgment

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## SECURITIZATION OF MORTGAGE ASSETS AS A TOOL OF THE DEVELOPMENT OF THE GLOBAL CAPITAL MARKETS

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**Abstract.** The problem of funding of lending operations via securitization mechanism becomes an effective model to attract financial resources in the banking sector of any country. This issue has particular importance for the Russian banking system in the conditions of the compression of external sources of funding that are available only for the largest banks with a high rating. A reliable tool for attracting long-term financing is the issuance of mortgage bonds, which allows banks to obtain stable return. The purpose of the study is to identify key market trends of securitization of mortgage assets as a tool of attraction of additional volume of funds by the banking system. The article deals with the method of historical and economic analysis and synthesis, institutional and evolutionary method, econometric modeling elements of financial analysis tools. It is proved that securitization is a process that causes an increase in the credit activity of banks with a moderate growth of money supply, defined the impact of changes in legislation determining activity on the market of securitized products, factors and conditions governing market infrastructure securitization of mortgage assets have been elicited; a comparative analysis of financial resource mobilization models in mortgage lending has been performed. Securitization market is developing unevenly in the global economy, which is caused by different levels of effectiveness of the institutional environment of securitization, particularly legal field. The competitive advantages of the securitization transaction for the banking sector is the release of capital, liquidity, asset growth and profitability of the mortgage lending. There are many models of securitization with their own set of advantages and disadvantages which may be compensated by the relevant actions on the part of the main regulators.

**Keywords:** long-term financing, the profitability of the banking book, mortgage credit lending, securitization infrastructure, liquidity of assets, securitization

**JEL Classification:** G15, G21, F65

### 1. Introduction

In connection with the processes of globalization of financial markets, bearing the objective nature, innovative securitization market instruments assets are becoming increasingly popular

(Haaranen & Nisar, 2011). The most famous basic financial products for securitization are traditionally mortgages. Securitization process promotes intensive development of mortgage lending market, increases the availability of housing for the population of any country in the world, attracting long-term funding into the banking system of the economy (Nadauld & Sherlund, 2013).

The process of securitization is a relatively new phenomenon in the banking practice. The slowdown in economic growth of the world economy makes it necessary to search for its fundamentally new sources, such as the securitization of particular importance (Bonaccorsi di Patti & Sette, 2016). However, there are many factors that hamper the development of the market of securitized assets. Excessive regulation of the financial segment leads to its compression, and the existing contradictions in the legislation of many countries create additional difficulties in the process of issuance of mortgage securities (Cerasi & Rochet, 2014). Inadequate of institutional environment of securitization, weak interest of the state to the development of the instrument, which could be a key source of funding housing, require more in-depth theoretical and practical study of the problem.

The aim of the research is the analysis and evaluation of the functioning of the market prospects of securitization assets as a tool for the development of global capital markets. To achieve this goal such tasks were placed: study of foreign experience use of securitized mortgage products; identifying the main problems inherent in this market segment and assessment of the prospects of development of securitization of mortgage assets in the Russian conditions and the global economy as a whole.

## **2. Results and references**

### **2.1 The history of the development and analysis of the world market of securitized mortgage products**

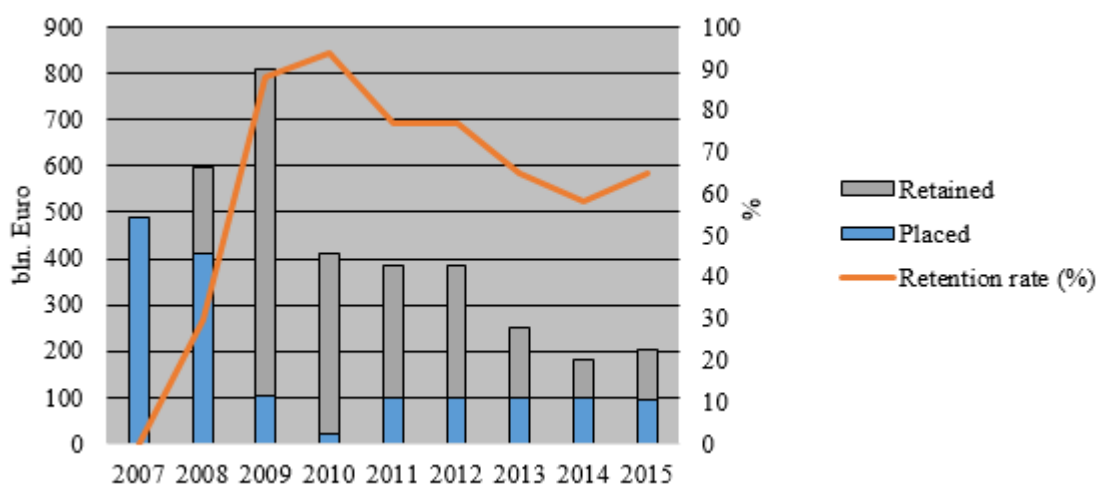
For the first time the securitized papers were talked about in the middle of the 19th century in the United States of America, it was the release of railway farm mortgage bonds. In the modern form of securitized mortgage-backed securities have been issued only in 1975, then, and there was a first mortgage agency GNMA (Chatterjee & Eyigungor, 2015). The flourishing of the securitized products market occurs at the beginning of the 21st century, when the securitization of mortgage assets as a process that swept the stock markets of almost all developed countries. The expansion of the tool due to the fact that it allows to be an objective factor of reviving markets under recession.

The process of securitization proceeds unevenly in different regions of the world, due to the differences in national legislation and the varying degrees of government regulation of the financial segment. For example, the market of securitized products began to develop rapidly in China, where in 2013-2014 years increased by 4 times, exceeding \$ 20 billion and becoming the largest securitization market in the Asian continent. Much of this growth is provided by the direct state support of the Central Bank of China. The development of this market segment, allowing the money supply without increasing funding by commercial banks, is a priority objective of the Government of China (Yu et al., 2015). True, in contrast to many other countries, including from the trendsetters in this area of the US, Chinese securitization is not intended for foreign investors, the Chinese financial market is almost closed for the rest of the

world (Hwang et al., 2013). The only exception is the deal of Volkswagen, allowing in 2014 to attract \$ 96 million.

Despite the intensive development of securitized products, in 2008, there has been a global trend of the market contraction of mortgage securities (Agarwal et al., 2012) that demonstrates the European market (fig.1).

Figure1: Volumes of securitization in Europe bln. Euro



Source: Encyclopedia of the Russian securitization, Moscow, Sbonds.ru, 2015

Structured products before 2008 were largely an instrument of uncontrolled risks and premiums. The financial crisis has led to a compression of spreads in the secondary market of mortgage bonds, reduce borrowing costs for issuers by reducing the attractiveness of securitization investors. Starting from 2014, the situation in the securitization market began to stabilize (Aktuğ, 2015). This is largely due to the decline in over-regulation of the market, increased significantly during the crisis. Growing consumer confidence in the mortgage institutions in connection with the change in housing lending. Central banks have bought increasingly securitized assets on both the primary and the secondary market, increasing the possibility of their release, stirring up the interest of not only domestic but also foreign investors.

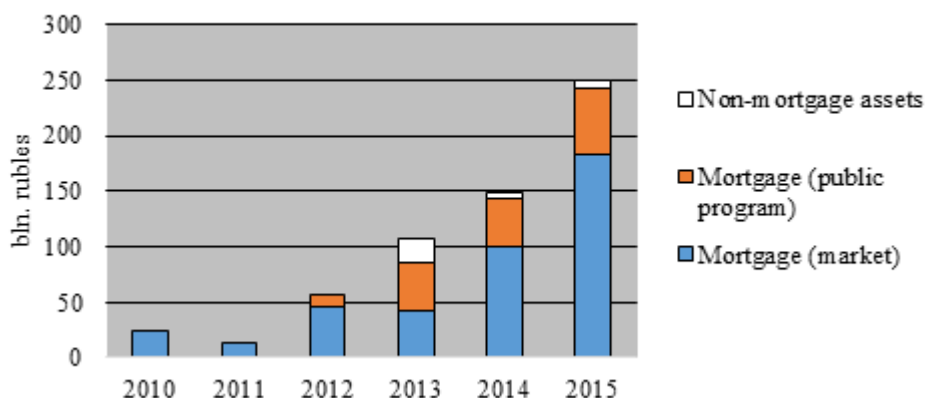
## 2.2 The Russian market of securitized mortgage assets and its integration into the global capital market

Problems of portfolios funding of Russian banks are very serious because high rates and as a consequence the cost of borrowed resources are responsible for the significant risks and increase transaction costs. For example, portfolios of mortgage-backed securities of a significant number of banks are already on the verge of profitability, net margin of one of the largest Russian banks, Sberbank fell to 2.5-3.5% in 2015, which is the minimum value over the past seven years (Suchkov, 2015).

In this regard it should be noted that such a widely used tool in the Russian practice as a mortgage loan with a fixed rate is not always convenient to keep at the bank's balance sheet, since it is quite risky. Government agencies such as Fannie Mae in the US and in Russia the Agency of Mortgage Housing Credit which have sufficiently long investment assets can partly compensate these markets.

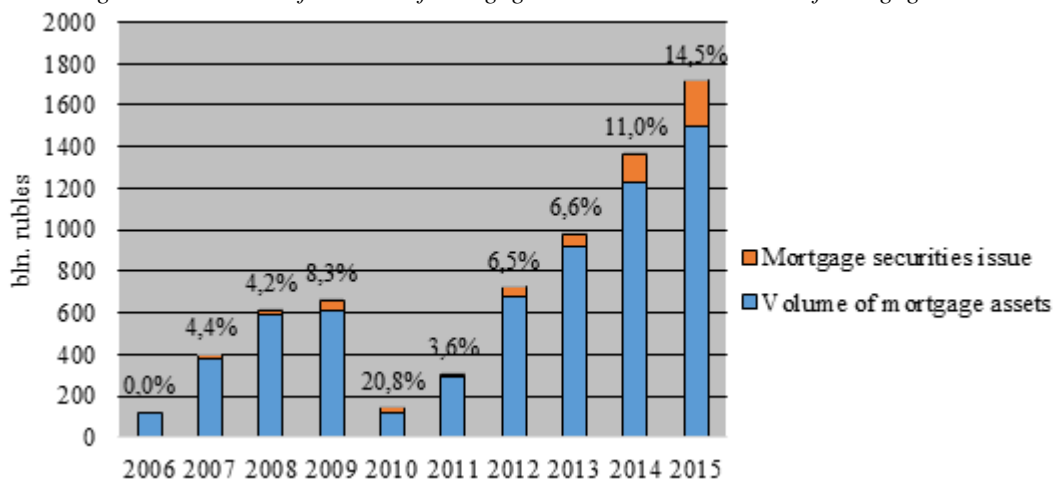
One of the most promising tools of long-term financing of mortgage lending is securitization. Currently, this tool can be a basis to attract liquidity, as well as the expansion of sources of funding for banks, and at the same time encourage lending of the real sector. In 2015 the activity of using such tool as securitization has grown significantly (fig. 2). As a result, the share of mortgage-backed securities in the financing of the current issuance reached 14% (fig. 3) that in principle is comparable with the results of the EU where the securitization process provides about one-third of funding (Farruggio & Uhde, 2015). One of the most promising ways of mortgage financing is targeted release of mortgage-backed securities for repurchase agreement.

Figure 2: The volume of the issue of securities secured by assets (billion rubles)



Source: Encyclopedia of Russian securitization, Moscow, Sbonds.ru, 2015

Figure 3: The ratio of the issue of mortgage securities to the volume of mortgage loans

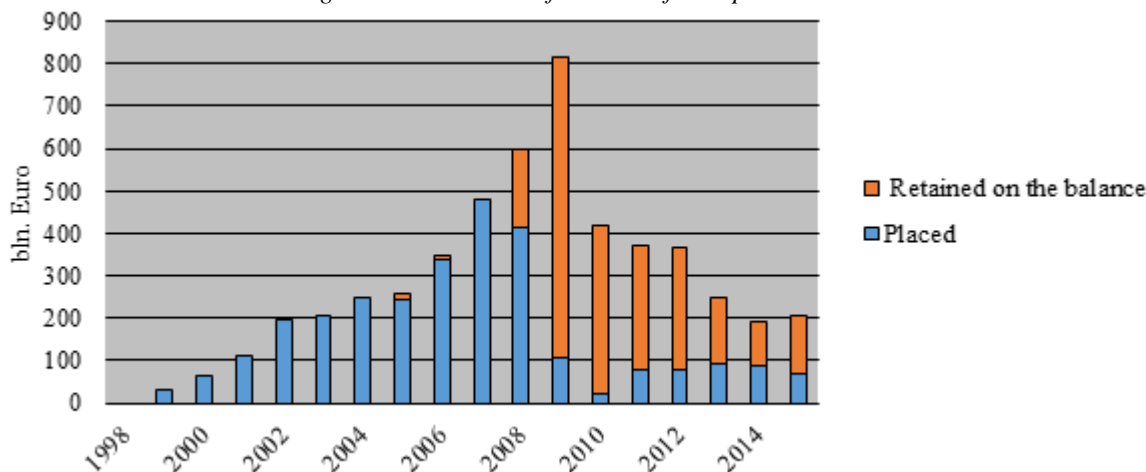


Source: Encyclopedia of Russian securitization, Moscow, Sbonds.ru, 2015

In Europe during the crisis, the share on the balance of securitized securities amounted to 90%, and at present their share after the economic recovery is about half (fig.4). In order to promote the development of the market of in 2015 European Central Bank securitization began buying program of ABS and covered bond. The program was preceded by the policy of quantitative easing, which was started by European Central Bank. The introduction of such a program would be a significant contribution to shaping the strategy of crisis management, and would contribute to the support of leading banks. In this situation it is necessary to decrease the

rate of interest, as well as the extension of deadlines of repo up to one year, as it was done in Europe, while reducing the rate on long-term repo (Skripkin, 2015).

Figure 4: The volume of Release of European ABS



Source: Encyclopedia of Russian securitization, Moscow, Sbonds.ru, 2015

Talking about the securitization it cannot but mentioned the issue of banking regulation. In this respect, the results obtained in the EU related with the implementation of securitization for loans to the real sector can serve as a positive example and may be helpful. As many experts believe, the state of the regulatory environment will be the main factor of the development of securitization in Europe. Some trends to reduce the liquidity requirements and the volume of capital are being currently implemented (Sedunov, 2016). However, an improper implementation of the provisions of the Basel Committee to some extent inhibits the securitization market in Russia and deprive the banks an alternative source of funding. The investor base which consists mainly of residents is a certain problem. The range of potential investors has just begun to form in Russia, and it needs substantial support. The observed recession in the current period in the Russian economy does not allow to count on a significant increase in the activity of private investors. In this regard, the best option is still the repo in the Bank of Russia, as well as the purchase of mortgage-backed securities leading originators such as VEB and HMLA.

Regulation of VEB as a major investor in the moment is not very stable, because it refused to investments in mortgage assets, which is no good effect on the development of the mortgage securities market in the Russian economy. Non-state pension funds could become alternative organizations that can replace VEB. However, permanent pension reform related to the freezing of the transfer of savings in funds, questioning the existence of the stocks themselves raises more questions about the possibility of such a replacement. Currently, the share of private pension funds as institutional investors is more than 80%, so the abandonment of the cumulative part of the pension could have significant negative consequences for investment potential and overall economic growth.

At present, in a period of stagnation and recession, the state support via HMLA program can become a major factor in the survival of the securitization market (Shtyrova, 2015). In 2015, the Russian government has developed the concept of creating a single institution housing development and mortgage by combining of HMLA and a fund of housing construction promotion. This Institute is intended to stimulate lending to housing construction and development of industrial and municipal infrastructure, as well as the organization of a major

overhaul. Besides, it is planned to create a credit institution as a part of the aggregated Institute, this credit institution would be credited in the Central Bank of the Russian Federation. Nevertheless, some analysts believe that HMLA wouldn't be market intuition and would become a economy class housing institution. In this connection, there is the potential elimination of one of the most effective institutions of market development - securitization.

Until recently, HMLA has held counter-cyclical policy based on support of small businesses in a recession, which is very important for the preservation and reproduction of the competitive environment. The Russian economy doesn't have well-developed financial infrastructure and this fact becomes a serious obstacle to the entire financial sector, and in particular for the securitization market. (Dambraukas, 2015). Some elements of such infrastructure can be created in a relatively short period of time, others require a fairly long time. At present, the majority of the Bank of Russia requirements based on the international ratings of three agencies. Mortgage agent and management company is one of the key infrastructural institutions of securitization process. There are not very many companies in the Russian market. International companies, such as TMF under the influence of sanctions denied SPV in registration for originators - state-owned banks. The above mentioned problem is related to the Russian financial sector as a whole, but in the field of securitization has its own specific. It is quite difficult to analyze the prospects of development of securitization since the overall market conditions are very uncertain. Credit crunch exacerbates the problems with funding, especially for those banks that are not included in the program of state support could become one of the likely trends. Thus the development of the mortgage market in crisis will largely depend on government support. In the current situation in the conditions of sequestering of state expenses it is unlikely that the support of the refinancing system through the market of mortgage securities will be among of the priority areas. The Central Bank of the Russian Federation with its reorientation on the funding of the securitization market may become another important source of state support of the market. Further development of the national market of mortgage-backed securities will depend on the functioning of the private pension funds where already more than 27 million people transferred their funds.

### 3. Conclusion

This paper is an output of the science project by the study of key market trends of securitization of mortgage assets as a tool of attraction of additional volume of funds by the Russian banking system.

In general, if talking about the results of the development of securitization in the world economy, it is possible to note the following points:

- mortgage securities issue is the standard funding mechanism for the majority of mortgage lenders;  
the usage of securitization is different, some agents become regular participants of government programs;  
the number of originators has significantly increased, where state programs began to play the main role. Not very large credit institutions may take part in these programs;
- the infrastructure of the securitization market is expanding, helping to reduce transaction costs and improve the efficiency of the company;



- the number of potential participants in the securitization market has significantly increased, non-state pension funds, management and investment companies become the active agents.

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## THE SMART GRID TECHNOLOGY IN POLAND AS A PART OF GLOBAL ELECTRIC POWER SYSTEM

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**Abstract.** In the era of growing world demand for electricity, combined with clearly visible necessity of rational use and supplementation of fossil fuels, the global electric power system faces new challenges. Intensive development of the electrical energy production from renewable sources causes the necessity to include them in the global electricity production. This challenge is connected with applying of completely new ideas of comprehension and functioning of the electrical power engineering system. Computer technologies implemented in power engineering are trying to meet new challenges. These technologies allow to control the distributed generation system and adapt its state for the current and forecasted production of electricity. A holistic approach to the problem of the modern production of electricity has led to the development of Smart Grids. In the article the current state and prospects of the Smart Grid technology development in Poland as a part of global electric power system were presented. The current assessment was based on statistics of the projects, the sources of their financing and the Smart Grid technology applications. This analysis was compared with selected examples of the situation in other European countries. The prospects for the development of Smart Grid technology in Poland are shown in terms of geographical, legal and economic aspects. The special attention was paid to the relations between opening for implementing the new technology, renewable energy sources and behaviour of the electric power industry. In the summary, the authors focused on the presentation of elements, that stimulate the development of the Smart Grid.

**Keywords:** Smart Grid, renewable energy sources, global electric power industry

**JEL Classification:** Q42, Q47, O31

### 1. Introduction

The rapid social and technological development of the modern world has led to the need to provide power media for powering devices due to that development is possible. The electricity which is generated, transmitted and consumed in the power engineering system is that basic medium. Rising prices of primary fuels, necessary for the production of electricity and the social awareness of decreasing stocks of fossil fuels forced changes in the global systems, which result in energy production from renewable energy sources (Eltigani & Masri, 2015), (Eissa, 2015),

the introduction of energy efficient technologies and prosumer policy (Rathnayaka, et al., 2013), (Camarinha-Matos, 2016). The technology linking together all of these solutions is the Smart Grid the connection of the power system with information technology (Kovacica & Giampietroa, 2015). Smart Grid is the power engineering subsystem in which the management of the distribution of electricity is carried out with the use of specialized information technology. The flexibility of the system obtained in this way allows to enter prosumer policy, i.e. the production, consumption and sale of electricity by various participants. Smart Grid systems are characterized by a high usage of information technology, but also the use of distributed generation and energy storage. In addition, the Smart Grid may have a different configuration, the priorities of energy transmission, may use different information systems. The Smart Grid technology is a whole range of methods, concepts, devices that are designed to ensure optimal production and use of electricity, based on collaboration between producers, distributors and consumers.

## **2. Smart Grid in Poland - comparative analysis**

The development of Smart Grid technology in Poland is primarily formed by research institutions (creation, research and development of technology) and the electric power distribution companies (implementation, field tests). The national research institutions (i.e. Institutes of Power Engineering, Research Institute for Automation and Measurements, Tele and Radio Research Institute) and technical and economic universities are in the group of research units which are involved in this process. The development is expressed mainly in the researches carried out in the framework of European and national projects, and with the use of private entities. In all projects it is noticeable a clear link of Smart Grid technology with the previously conducted studies and implementations, including modern technologies, renewable energy, energy storages, automatic control and measurements, computerization of the power engineering system. In recent years, similarly to the other countries there has been a significant increase in the number and amount of financing of the Smart Grid. In the field of the implementation of technology into the power engineering system the distribution companies are playing a leading role. The examples of such activities are presented below. Remote meters reading Kalisz - Energa Operator - the installation of smart meters in the 50 000 households, modernization of 300 station MV / LV, the implementation of a web portal to monitor the current electricity consumption. Functions performed: the ability to remote consumers connection and disconnection, the possibility to remote change their tariff and remote reading of current electricity consumption:

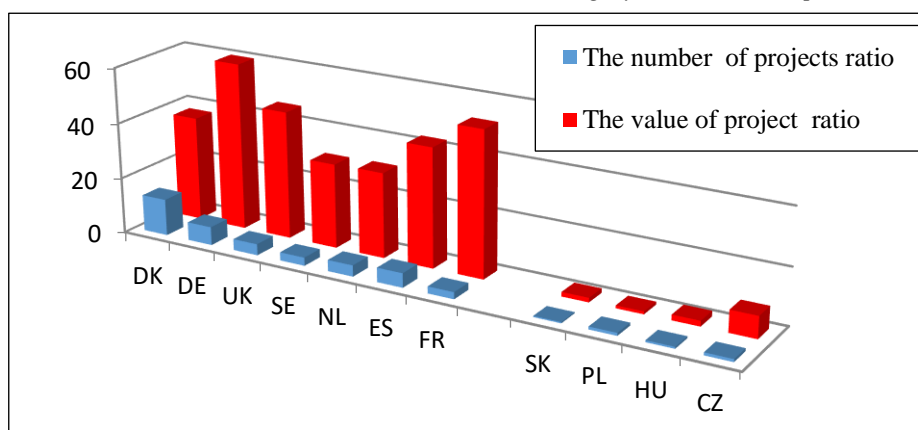
- Smart Hel Peninsula - Energa Operator - expansion of the power engineering system and adapt it to the Smart Grid, the use of automation and measurement in MV / LV stations, balancing systems implementation, expansion of the SCADA system to the level of LV. Functions performed: coverage of 10 000 inhabitants, reduce power cuts.
- Smart City Wroclaw - Tauron Distribution - installation of smart meters in 330 000 households, modernization of 2000 MV / LV stations.
- Smart Torun - Energa Operator - the construction of the photovoltaic power plant, modernization of the lighting, automation of the distribution network, equipping customers with intelligent measuring systems. Functions performed: coverage of 200 000 inhabitants, reducing the demand for the energy within one year by 6500 MWh.
- Real Dimension of Energy - Smart Meters in Warsaw - RWE Stoen Operator - the installation of smart meters in 100 000 households, modernization of 440 MV / LV

stations, the use of power cables for communication. Functions performed: coverage of 100 000 inhabitants, reducing power cuts.

- Construction and Implementation of Intelligent Measurement System (AMI) in a Department of Bialystok and in the Department of Lodz - PGE Distribution - installation of smart meters in 51 000 households, the implementation of the central application for AMI.

In addition to projects closely related to the Smart Grid there are conducted numerous research and implementation works to support the new technology. In order to carry out a comparative analysis of the involvement of Poland and the other countries in the development and implementation of new technology, this analysis should be limited to Europe, due to European countries have similar conditions and capabilities. The reports of the European Commission: EUR 24856 EN - Joint Research Centre - Institute for Energy (Giordano et al., 2011), EUR 26651 EN-Joint Research Centre - Institute for Energy and Transport (Covrig et al., 2014) provide basic statistical data related to the Smart Grid in the individual European countries. The authors of this article on the basis of (Giordano et al., 2011), (Giordano et al., 2013), (Covrig et al., 2014) presented data concerning the amount of funding Smart Grid projects and the number of the countries leaders of the Smart Grid technology and the Visegrad Four (V4) including Poland. The authors considered that such comparative data of the countries will give a clear picture of the situation of analyzed technology development in Poland. The value of funding for technology development and the number of projects (Giordano et al., 2011), (Giordano et al., 2013), (Covrig et al., 2014) have been taken as the basis for the analysis of Polish place in the development of Smart Grid. The study also used statistical data of selected countries: the value of the Gross Domestic Product (GDP), population, the area of the concerned countries (based on EUROSTAT). It was considered that these are the most important social indicators in the development of Smart Grid and renewable energy sources. In most statistics on Smart Grid the leading positions are occupied by the countries with high GDP as well as by the countries with lower GDP, whose involvement in the development of technology is very high (among them definitely stands out Denmark). The place of Poland in the ranking was shown in Fig. 1, which shows the number and the value of Smart Grid projects in selected group of countries in relation to Poland. There is a visible significant difference in relation to the leaders, what is obvious, but in relation to V4 the result is not satisfactory.

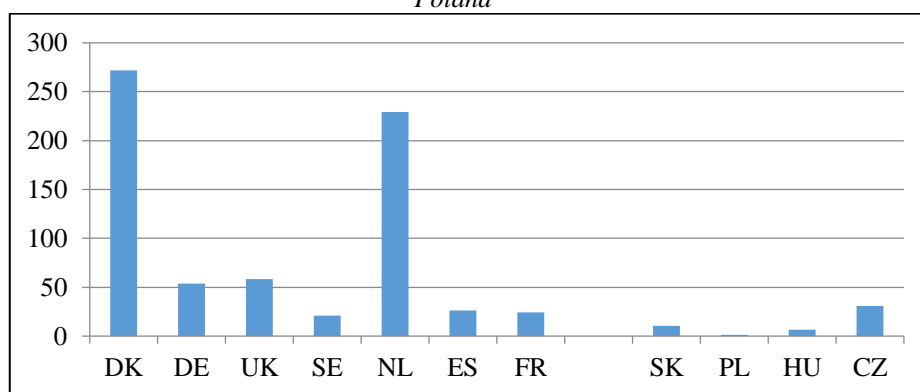
Figure 1: The number and the value of Smart Grid projects in selected countries in relation to Poland (DK - Denmark, DE - Germany, UK - United Kingdom, SE - Sweden, NL - Netherlands, ES - Spain, FR - France, - SK - Slovakia, PL - Poland, HU - Hungary, CZ - Czech Republic)



Source: own preparation - based on (Giordano et al., 2011), (Giordano et al., 2013) and (Covrig et al., 2014)

All the V4 members have a greater investment in Smart Grid projects and have more focused financing (concentration of financing may be an advantageous or unprofitable element depending on the rational use of funds in relation to the objectives). Further results relate to the expenditures taking into consideration the population and the area of the countries. The second of these criteria was accepted because the area of the country is, according to the authors, one of the important factor in the development of renewable energy technology, prosumer policy as well as the Smart Grid. The dependence of the budgets of the Smart Grid relative to the countries surface (per 1000 km<sup>2</sup>) in relation to Poland is shown on Fig. 2 (value 1 on the chart).

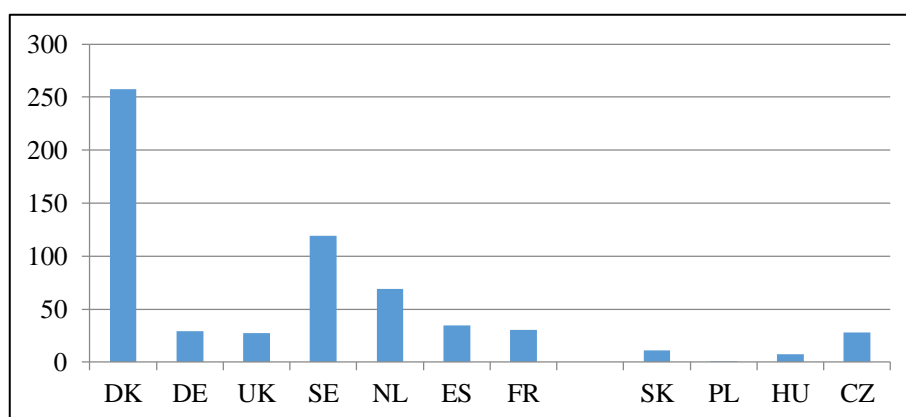
Figure 2: The budgets of the Smart Grid in relation to the countries surface (per 1000 km<sup>2</sup>) in reference to Poland



Source: own preparation - based on (Giordano et al., 2011), (Giordano et al., 2013) and (Covrig et al., 2014)

Definite leaders in this comparison are Denmark and the Netherlands (271 and 230 times), and within the V4 there are Czech Republic and Slovakia (30 and 10 times). It should be noted that the two mentioned countries are the members of V4 and have a very good index value in relation to the economic leaders in Europe, i.e. Germany, UK, France (58, 53, 24 times). The area gives the possibilities of using renewable energy sources, which in turn stimulate the development of the Smart Grid. Not all countries evenly take advantage of the potential possibilities connected to the area. The following comparison shows the dependence of the budgets of the Smart Grid in relation to the population of the particular countries in reference to Poland - Fig. 3. Denmark is undisputed leader here and values of the V4 countries (Czech Republic and Slovakia) are comparable with values of Germany and the UK. Poland differs significantly from the analysed group of countries.

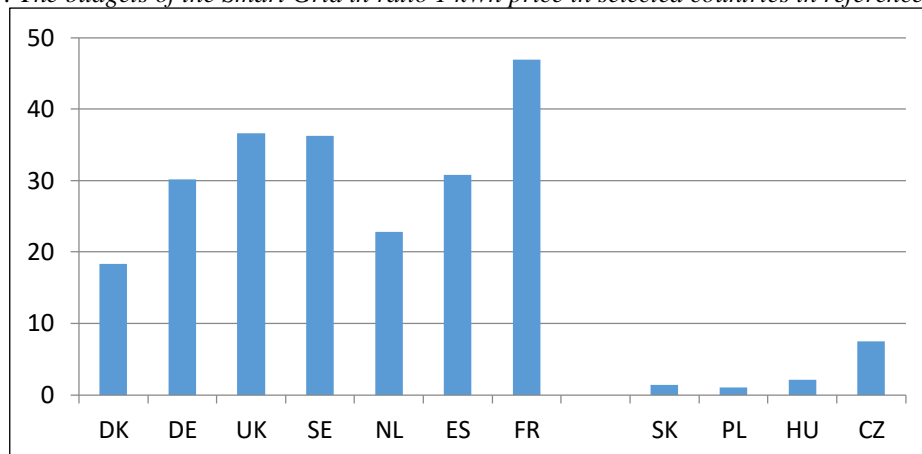
Figure 3: The budgets of the Smart Grid in relation to the population in selected countries in reference to Poland



Source: own preparation - based on (Giordano et al., 2011), (Giordano et al., 2013) and (Covrig et al., 2014)

The last of the analyzed comparisons is statistics based on the average unit purchasing price of electricity - 1 kWh. It is shown on Fig.4.

Figure 4: The budgets of the Smart Grid in ratio 1 kWh price in selected countries in reference to Poland



Source: own preparation - based on (Giordano et al., 2011), (Giordano et al., 2013) and (Covrig et al., 2014)

A huge number of factors, both technical, economic and political can strongly affect the unit price of electricity. The comparison presented on Fig. 4 gives only a general picture of energy development trends of the analyzed countries. These countries that are active in investing in the Smart Grid are able to keep the price of electricity at a relatively low level. Thus, the implementation of new technologies i.e. Smart Grid, renewable energy sources, prosumer policy, despite having to bear the initial investment, brings financial benefits for all parties of the energy market.

### 3. Conditions and prospects for development

The prospects for the development of technology depend mainly on the conditions of its expansion in the particular country (Niestena & Alkemadeb, 2016). Each member of the European Union, despite the significant similarities, have different predispositions and conditions for the development of the Smart Grid. The reasons for this state lie in energetic and social policy, in characteristics of the development of technological society, and geographical factors for using renewable energy sources and distributed generation as an integral components of the Smart Grid. With such assumptions the implementation work can be divided into several categories. They are: the management of the smart energy system, implementation to the system the renewable energy sources and distributed energy sources, virtual power plants, smart households (Hee-Tae & Jang-Won 2016), electric vehicles (Marcincin & Medvec, 2014), (Tan et al., 2016).

Legal conditions are determined by the state authorities and are written in laws and regulations. The basic legal act regulating the Polish energy policy is the 10 April 1997: Energy Law Act. The regulation to EU policy has been written in the updates to this act. One of the provisions of the update is the issue of contract for the sale and transmission of energy (the obligation to inform about the reasons of negative connection opinion). The next is the implementation of EU directives relating to connection of the customers, the production of energy from renewable sources and energy efficiency. However, the problems with the implementation of the directives related to the Smart Grid - 2009/72 / We and 2009/73 / We

has brought the effects presented earlier in the article, i.e. a significant disparity in the development of the Smart Grid in comparison with other countries.

The distribution companies (operators) of all European Union countries are interested in Smart Grid. On the energy market have appeared the producers of small connected value, the energy trading company, the designers of Smart Grid and energy storage systems operators (Roemer et al., 2012). From the point of view of system operators, the implementation of intelligent networks is associated with a number of barriers: insufficient degree of legal regulations, high cost and risk, training of personnel to handle the Smart Grid, social reluctance to innovations. In Poland, the distributors of energy are involved in the numerous projects and installation of large amounts of smart energy meters. For example, the operator Energa-Operator - have installed about 400 000 advanced energy meters on the overall number of 3 000 000 customers (data of 2015).

Taking into consideration the market conditions of the development of Smart Grid in Poland, the primary factor is the profitability of the technology implementation. It seems that the modern solution has a potentially great development prospects. The basis for this claim is the analogy the attitude of customers in Poland and in the other European countries. The observed steady growth of energy consumption and its rising prices will force the consumer to take interest in modern energy technologies. The power engineering system in Poland is largely technically obsolete, however is subject to a systematic process of renewal. This is the ideal situation for the implementation of Smart Grid technology. The factor to consider in this situation is the public favour for the introduction of new solutions. Despite the relatively low technical awareness of the population on this issue, the authors believe (this is confirmed also by sample surveys) that the new technology would be quickly accepted by consumers.

An important condition which influence the growth of Smart Grid is the development of compatible technologies, and above all the renewable energy sources.

In Poland, up to now, the largest development occurred in the area concerning wind energy, photovoltaics, biomass. Country, due to varying geographical conditions and large area has predispositions to the significant development of the renewable energy technologies. The wind power industry developed the most dynamically, however the photovoltaics is characterized by the highest rate of growth. The technical potential of wind energy has not been sufficiently exploited yet. The best wind conditions are on the coast in the area of Hel, Suwalki, Masovia, the Silesian Beskids and the Bieszczady Mountains. Hypothetically, the technical potential is being estimated altogether on the land and the sea on about 1600 GW, and after taking into account the environmental conditions for about 650GW (Szczerbowski & Chomicz, 2012). The usage even a small part of this potential would be very cost-effective and stimulating for the development of Smart Grid.

Poland's location is not optimal for the use of photovoltaics, however, allows for effective and profitable use of this technology. The average annual number of hours of solar radiation is 1600 for the country, while in the period from April to September is possible to use almost 80% of solar energy reaching the Earth. The annual density of solar radiation ranges from 950 kWh / m<sup>2</sup> in the north-western part of the Polish to 1050 kWh / m<sup>2</sup> in the eastern part of Poland (Szczerbowski & Chomicz, 2012). The popularity of photovoltaics (as well as solar collector systems) is related to, among others, with the possibility of using units of low power i.e. using them in the households.

## 4. Conclusions

In the article the authors presented the main results and suggestions from the conducted analysis of the development of Smart Grid in Poland. In summary, it is essential to answer the fundamental question, namely, whether it is worth to introduce technology? Despite the large investments and the threats associated with them (Liu et al., 2016) the authors believe that it is worthwhile. However, as with all technologies, it is necessary to implement it reasonably and taking into account essential conditions. In the idealized, although already existing power engineering systems, technology is an essential and necessary element of the system.

The status of the development and financing of technology development projects in Poland should be assessed as insufficient, especially when compared with other countries. The authors believe that the primary reason for this are the legal conditions which restrict rather than stimulate the development of technology. The state policy in the aspect of the Smart Grid is coincident with the direction of other European countries, but the progress is too slow. The authors consider that the most important stimulating factors include:

- works of research and implementation centers over the new technology,
- availability of EU funds for implementation work,
- energy distribution companies interest (economic aspect),
- the need to replace obsolete parts of power engineering system, enabling to implement the technology,
- a significant increase of the social interest and in the number of electricity producers.

Despite the rather negative assessment of the development of Smart Grid in Poland, the authors are hopeful that the backlogs will be quickly compensated and the country reaches the level of technology leaders. At the same time, not-implementing solutions so far will give the positive effect and allow to avoid mistakes that were made by operators in the other countries in EU.

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## CONTROLLING OF CLAIMS AS A TOOL FOR REDUCING INSOLVENCY IN AN INTERNATIONAL ENVIRONMENT

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**Abstract.** Article describes the importance of providing business-customer credit, the risks of providing trade credit and keeping control over the credit granting process. The aim of the paper is to analyse the insolvency of enterprises in an International Environment (Slovakia and in Europe), and also to define the possibilities of reducing its debts with the help of controlling. The main part of the paper is describing an analyse of the insolvency, the reason of its existence and its consequences, the term of repayment, but mainly the possibility of reducing the payment period of the overdue claims. To have regular trading contacts is a wish of all entrepreneurs in our business environment. Under the term a regular trading contacts we can understand all liabilities between the entrepreneurs that are fulfilled in time and in the appointed amount for the distribution of the products, services or goods. The methodology used is based on the result analysis and summarizing information obtained from representative study, synthesis, induction and method of deduction. The results of this analysis are showing a decreasing insolvency, not only in Slovakia but throughout Europe over the last 5 years. But delayed payments still remain the main threat to the growth and survival of European businesses. For that reason it is necessary to perform controlling activities such as the monitoring of claims, selection of the companies according to the risk classes, performing controlling tasks, create effective process of reminder and others.

**Keywords:** insolvency, controlling of claims, receivables, credit

**JEL Classification:** M20, M42, G32

### 1. Introduction

The final and most important phase of the creation of the business values is a sell of the products and services. The success of this phase depends on many internal and external factors, as for example product quality, production, demand, competition, but also sufficient time for the payment of delivery.

Some companies insist on cash payments, but they find that this limits the number of customers who are willing to deal with them. If the companies want to be successful and competitive, they must provide for the customers a business loan. Another aspect is that many customers view credit terms as part of the product price or service, and may pay more for a product if a company is willing to grant generous credit terms. The difference between the bookkeeping and cash sell is the occurrence of the claims.

Continuous progress of business relationship is just wishful thinking in our business environment. It is described by all liabilities between businessmen, which are met in time and in required amount for the supply of the products, services or goods. As long as the customer is not paying for the goods, the sales are from the view of the cash-flow defined as in pending or unfinished. When a company is providing loan by selling the products, the claims are increasing proportionally which leads in the end to the growth of costs and risks.

## **2. Theoretical background**

The claims belong to the assets of the company and they are part of the short-term assets, as well as a part of the equity structure. The most common case when the claims are increased is the situation when the customer is having delays regarding the payment of the products and services. (Sedliacikova et al., 2012)

Through the classification of the claims we can better estimate the probability of the claim collection at a certain time. We can classify the claims according to:

- Account Classification and Accounting Procedures (commercial relations – customers and other claims),
- legal aspects upon which the claims are generated and are recovered,
- the age of claims (short-term - with a maturity up to one year; long-term - with a maturity of over one year. A more detailed classification of the claims regarding maturity and overdue can be made as following: by the 30 days, 30-60 days and over 90 days. The company can set own time period of the maturity according the experience with the customer.
- the debtor and liability methods. (Jakubik & Seidler, 2009)

Trade credit is a type of loan that the customer is receiving from the supplier as a result of the fact that the customer did not pay in the previously agreed amount of time for the delivery of goods. The loan is granted for a period starting with the delivery of goods until the full payment by the customer. Trade credit is fundamentally a short-term nonbanking loan without special formalities and ensures special guarantees. It is provided in the form of goods and paid by the customer in cash. Trade credit is a form of support sales, as it allowing the customer to make purchases even if the customer has not enough assets for the prompt payment of goods. It is the largest and the most important external source of financing, especially for small businesses that do not have the same capability of offering credit compared to their larger competitors. (Sielekova, 2015)

### **2.1 Basic for insolvency**

When the companies are deciding about granting credit they should take into account not only the positive effects, such as higher profits and sales, but should also consider the increase of costs and the risk of delayed payment of the customer. In some cases this situation could lead to a severe deficiency of available working capital due to an excessive grant of credit to customers or to bankruptcy if the firm does not closely monitor the receivables. Each of these problems can be seen in the customer financial statements or payment history and can lead to a prolongation of credit which might put the company in the position of having large debts. Another consequence of granting credit in large amounts can reduce a firm's available assets until the point where it cannot issue credit to proper customers who are eligible of receiving it. This leads in the end in a loss of business. (Chen et al., 2007)

The companies have to look for the answer on the question - how to find a certain level of claims which will be for them optimal in terms of profits, risks of its achievement and other evaluation factors. Looking for the answer is not easy because each change of the amount of claims will influence not only profit, but in the same time also cash flow and the risk level of the business activity. (Georgescu et al., 2012)

Consequently, a company must keep strict control over the credit granting process, so that just best customers will granting credit by the company and credit is not issued to customers with poor credit histories. It is difficult to balance the positive and negative of granting credit. The task of claims' controlling is exactly the evaluation of the effects of sales granting credit on sales, claims, cost of capital and the risk of losses from bad debts. (Ponisciakova, 2014)

Each enterprise has always a certain optimal credit policy in terms of the defined objectives. This policy is characterized by specific parameters (the behaviour of consumers and competition, contractual arrangements etc.) that an enterprise can change in the arranged circumstances. There are different factors that have influence on the company as for example sales volume, cost of sales, the losses from the floating debts, the cash discount and the cost of committed capital. (Wang et al., 2010)

### **3. Aim and methodology**

The scope of the business environment is to achieve the regularly fulfilling of the business relationships. Nowadays new methods have been proposed in order to decrease the insolvency in companies, for example through the European directive, which has set that the enterprises can normally offer their customers a maximum maturity of 60 days. Despite this, the problem that many customers are paying their debts with delay or they are not paying it at all still remains.

The aim of the paper is to analyse insolvency of enterprises in Slovakia and in Europe and to define the possibilities of reducing the debts through controlling of claims. The analysis is done by theoretical assessment survey and appropriately chosen methods.

#### **3.1 Methodology**

The information was yielded from the secondary sources - domiciliary and foreign literature search coherent to presented topic. Information gained from representative study by EOS entitled „European Payment Practices in 2011 performed at 2 200 companies in 10 countries, information obtained in year 2014 performed at 2 600 respondents in 12 European countries, in 2015 compiled from replies 2 800 respondents in 13 European countries. Information gained from EPI research by Intrum Justitia in 2012 performed at the 9 800 respondents and 31 countries, research by Atradius Payment Practices Barometer in 2013 carried out in 4 countries and 821 respondents.

As following methods were used – the results analysis and summarizing information obtained from representative study, synthesis as a tool for overall assessment of the insolvency, the method of induction when considering individual reason of insolvency and the method of deduction in order to motivate the conclusions.

## 4. Results and discussion

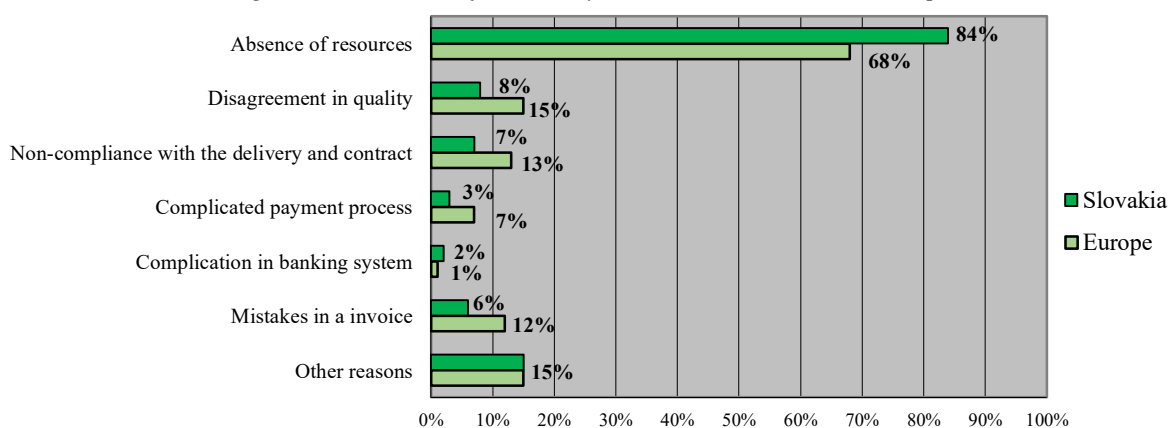
The development of insolvency in the years 2011 - 2015 in Slovakia and Europe is describing in the following text and figures.

The survey “EPI” found out that from the 9,800 companies that responded to the survey, 61 percent said, that they have experience a loss of sales due to unpaid invoices, 57 percent said that their liquidity was affected by difficult economic conditions and 48 percent said that they reduced their investment in innovation as a result of oppressive financial situation.

In the last two year the payback period of invoices in the Slovak Republic has starting decreasing. According to the survey “Atradius” in 2013 the average contractual maturity of domestic invoices was 26 days and of foreign invoices was 34 days, on the other site the payback period of turnover was in average 40 days. The survey “EOS” in 2015 showed that in the business segment the maturity period of invoices is decreasing. Across Europe this figure declined compared to 2014 by four days and now it has the value of 38 days. In Slovakia was registered only a slight change from last year's 41 days to current 40 days. “EOS” survey in 2014 showed that the period to pay invoices in Slovakia was overdue in 26 days. The payback period in the other countries of Eastern Europe was overdue in 27 days and in Western countries was overdue in 29 days.

According to the survey “EOS” in 2011 40% of slovak customers were not able to pay their debts on time. In the following years the reduction of insolvency was recorded. In 2014, only 29 % of Slovak respondents were not able to repay their liabilities on time, and in 2015 this number dropped to 26%. Payment behaviour was also improved in the whole Europe. In 2014 in Western European 24 % of the invoices were paid with delay or were not paid at all while in 2015 it was just 20%. The improvement in Eastern European was from 29% to 26%. The causes of insolvency are shown in the following fig. 2 and 3. (Survey by EOS, 2015)

Figure 1: The causes of insolvency in 2013 (in Slovakia and Europe)

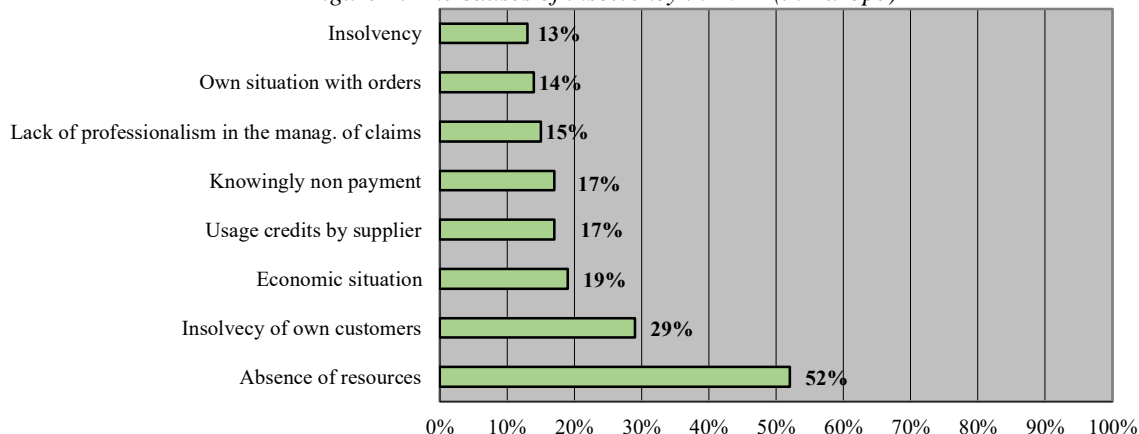


Source: Edited from research by EOS KSI 2014 – Payment practices in Europe

In 2013 were the most common causes why the customers delayed with the payments the mistakes in the invoices or delivery notes. The majority of these mistakes were from the site of the supplier. The mistakes were generated because of the insufficient automation of the invoicing cycle. This can be reduced through a system which will allow an automatic transfer of data from order through to delivery note to invoice and to pair the incoming payments with the invoices. An interesting detection of the survey “Atradius” was that large companies do

these similar mistakes more often than small companies, although they have better IT equipment, so we would expect the opposite result.

Figure 2: The causes of insolvency in 2014 (in Europe)



Source: Edited from source AtradiusPayment Barometer - June 2013

The most common cause of delays of payments and debts in 2014 was the current deficit of cash flow, as well as the unemployment or forgetfulness. The next frequent cause for the late payments of invoices was that the customers were using invoices as their funding instrument.

In 2015 the survey “EOS” presented that there is a decrease of bad debts in comparison with the last year from 6% to 3% related to all debts. Although there has been a decrease in losses of the bad debts, delayed payments still remain the main threat to the growth and survival of European businesses. (Atradius barometer platobnej morálky 2015)

European entrepreneurs have reasons to be worried due to the fact that they are unable to recover their money from debtors. The main cause of bad debts is the bankruptcy of the customer or the customer himself terminates his business. The main areas of business which are providing bad debts in Slovakia are constructions, services or transport.

In order to prevent the low enforcement of claims after maturity the companies are taking different measures. In the following paragraph we are showing different possibilities that the controlling of claims is offering. (Mian & Smith, 1992)

The first option, if the company wants to eliminate as much as possible bad debt, or avoid the delay of payments, is necessary to carry out the activity of controlling and in the form of monitoring the receivables that is focused primarily on register and control the volume of claims, the maturity of receivables and the ratio of receivables to sales. (Sebej et al., 2011)

In the practice, claims are monitored by using indicators of turnover ratio and time of turnover of claims. Turnover of claims is the ratio between credit sales and claims. The indicator measures the turnover ratio of claims during the set period. The indicator shows the relationship between the performance of the enterprise (credit sale) and committed capital from these sales (claims) in the mentioned period. The positive trend is the growth of this indicator. (Ponisciakova & Sukalova, 2013)

Time of turnover of claims is the ratio between claims and credit sales multiplied by 360 days. The indicator shows the average number of days that elapsed between the issuance of the invoice and its payment. A positive trend is the decrease of this indicator. (Ruckova, 2014)

The age of receivables is another characteristic which could be monitored and controlled in relation to the fixation of capital in the claims. Enterprises should have a constant overview of the age structure of claims in the real time and contact the customers 3-4 days after the deadline. (Yuan, 2013)

Some businesses are not paying attention to the credit policy. These are the businesses that are selling on credit in normal paying conditions, without analysing the customer's ability to pay, or without setting the credit limits, goals and so on. This case is describing the company policy without control of debts. Despite the potential risks of offering trade credit, there are many steps which a controller may take to ensure that credit is allowed in a consistent and reliable manner, and that the policy is thoroughly followed. Controlling of receivables is focus in the areas of customer investigation, credit granting and successive control. (Teplicka, 2012)

The content of the controlling includes the following tasks:

- setting the credit limits to customers and their control,
- monitoring overdue claims and describing further action,
- reminder process (initiation of collection),
- management of customer data,
- verifying the credibility of buyers,
- control the payment terms of orders,
- monitoring receivables (turnover time, turnaround, age of receivables, etc.)
- analysis, planning and controlling of the debts policy and claims. (Fecenko, 1994)

If the company wants to eliminate the number of outstanding claims in the arranged time, the department of controlling should divide the companies according to the level of risk into the following five groups (Vacekova & Pavlik, 2013):

- large companies which previously have not recorded in their financial positions any actual risks and they could have a business loan without restriction,
- financial secured companies that in the past have recorded some small risks, but they could get a business loan with an upper limit,
- whole solid companies, which previously had some risks and can only get a limited credit from the supplier,
- not very solid companies, which will get very limited credit,
- weak business with higher risks to which the supplier should not offer a credit.

It is striking that 64% of Slovak enterprises will investigate the claims only when they are overdue more than 30 days. Effective reminder process is one of the most effective tools to optimize the collection of receivables.

Companies have a variety of ways to bring in accounts receivables as soon as possible and less risk of accounts becoming essentially overdue, for example with help collection techniques. The methods are: connect the sales staff, create a relationship, follow overdue accounts closely or use leverage. (Sebej, 2012)

Connect the sales staff, because they have best customer contact. They may often collect on accounts receivable that the collections staff may not, because sales staff can contact a different person within the customer's company who can command an immediate payment.

It is much easier to collect money, when company create a relationship with customer. The good way to establish this relationship is to take a few instant on the phone to chat with the

customer. The collections person should avoid any heated or confrontational discussions, behaviour which is common for an unschooled collections person to make.

If a customer does not react on previous methods is suitability to use leverage. It is time to bring the issue upstairs to the controller or higher in the organization. It is possible that a different response may be obtained, when a customer's accounts payable person is not reactive. If none of these approaches work, a different kind of leverage may be necessary-cutting off service or shipments until payment is made.

## 5. Conclusion

In the end it can be stated that if the companies want to be successful, they should offer the customers a business loan. If the customers are not directly paying for the products or services the claims are established. This can be connected with many different negative effects.

A payment discipline is improving not only in Slovakia but also in Europe. The quantity of Slovak consumers who were not paying on time dropped from 40% (2011) to 26% (2015). In Western European countries, the number of outstanding invoices decreased from 4% to 20% (2015) and in Eastern European countries was noted an improvement from 29% to 26%.

The most common causes of insolvency are deficit of resources or mistakes on the side of the supplier. The other reason is that customers are using the invoices as their funding instrument. The customers' insolvency can influence liquidity, can cause the loss of sales but also companies have to reduce their investments in innovation due to the negative financial situation.

In order to prevent the low enforcement of claims after maturity the companies are taking different measures. To reduce the bad debts, the enterprise should imply controlling activities such as monitoring of receivables, classification of the companies according their level of risks, imply controlling tasks and establish an effective process or reminder process and so on.

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## INTRODUCTION OF WORLD INNOVATIVE TECHNOLOGIES TO RAILWAY TRANSPORT IN POLAND

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**Abstract.** The paper is concerned with an introduction of innovative technologies to railway transport in Poland. The newest technical directives presented in Union 4th railway package regard globalization of railway system in EU and the safety of railway traffic. This package constitutes a significant step in the creation of the global European railway market. Since the beginning of railway transport, devices allowing for the safe railway traffic have been used. A steady increase in freight and people transported by rail forced railway authorities to seek new solution which allows increasing both the throughput and safety of railway tracks. Introduction of new international information technology, microcomputers and Programmable Logic Controllers (PLC) to railway infrastructure enables engineers to create innovative system. These systems ensure high reliability, stability and the safety of people and freight transported. Unconventional supplying sources and open radio communication standard have also their own contribution to increasing innovation and limitation of cost of railway transport. The paper presents features of innovative railway traffic control systems. The particular emphasis is put on the safety requirement for these systems. Furthermore analysis for innovative solutions such as: signaling lights with LED diodes, photovoltaic cells supplying railway traffic control devices, open radio communication standard for railway traffic control systems, dedicated railway traffic control circuits implemented in Field-Programmable Logic Devices (FPLD), introduced to railway transport in Poland will also be presented. Additionally, the level crossing system SZP-1 including innovative technologies such as radio communication and Photovoltaic cells has been shown.

**Keywords:** the global rail market, innovative technologies, railway transport, safety

**JEL Classification:** L91, L92, O31, O32

### 1. Introduction

Globalization causes that people try to find new alternative solutions which could significantly reduce electrical energy consumption and pollutions. It is considered during developing innovative solutions in railway transport in Poland.

Application of new technologies such as fast computers, open radio communication standards and more effective microprocessor systems caused the rapid progress in railway transport. Needless to say that computer technologies have an immense impact on the overall progress in XXI century (Ohnmacht, 2014).

Railway traffic control system should allow for an introduction of new elements in place of obsolete elements without changing its functionality. Functional blocks of the system should be fitted with diagnostic outputs and state indicators and their outer connectors should be also easily accessible for authorized technical staff (Bouch & Roberts, 2013), (Kara & Savas, 2016). The maintenance period for these devices should be not less than 20 years.

New innovative technologies introducing in both world railway transport system and in Poland include:

- signaling lights with LED diodes,
- open radio communication standard for railway traffic control systems,
- photovoltaic cells supplying railway traffic control devices ,
- dedicated railway traffic control circuits implemented in Field-Programmable Logic Devices (FPLD).

## 2. Characteristic of innovative safe railway traffic control system

Contemporary railway traffic control systems require new effective computer systems to process data and present control processes on displays. The first noticeable stage of development of railway traffic control system was the replacement of relay-based desktop by virtual desktop allowing for presentation of current traffic state on displays.

The operation of railway traffic control system in Poland is based on *fail-safe* rule. According to this rule, single damage of software or hardware cannot lead to dangerous situation. It means that the probability of multiple damage occurrence is negligibly small. Additionally the single damage should be detected in short period of time and the system should react on this damage. SIL<sup>9</sup> standard introduced by European Committee for Electrotechnical Standardization (CENELEC) has been another important step in improvement of the safety of these systems.

Development of microelectronics and programming languages forced engineers to unify standards for optical fiber technology using in safe transportation systems. The hardware and the software using in safe systems have to satisfy tough requirements. After many years of research CENELEC developed and introduced algorithms allowing for creation, assessment and production of safe railway systems. These algorithms are presented in appropriate European norms. The most important of them are: PN-EN50126:2002, PN-EN50128:2002, PN-EN50129:2003 (D'Amore & Tedesco, 2015).

Issues regarding global safety and reliability of modern automatic railway traffic control systems should be considered in two aspects (Martinelli et al., 2005):

- hardware of the system,
- software of the system.

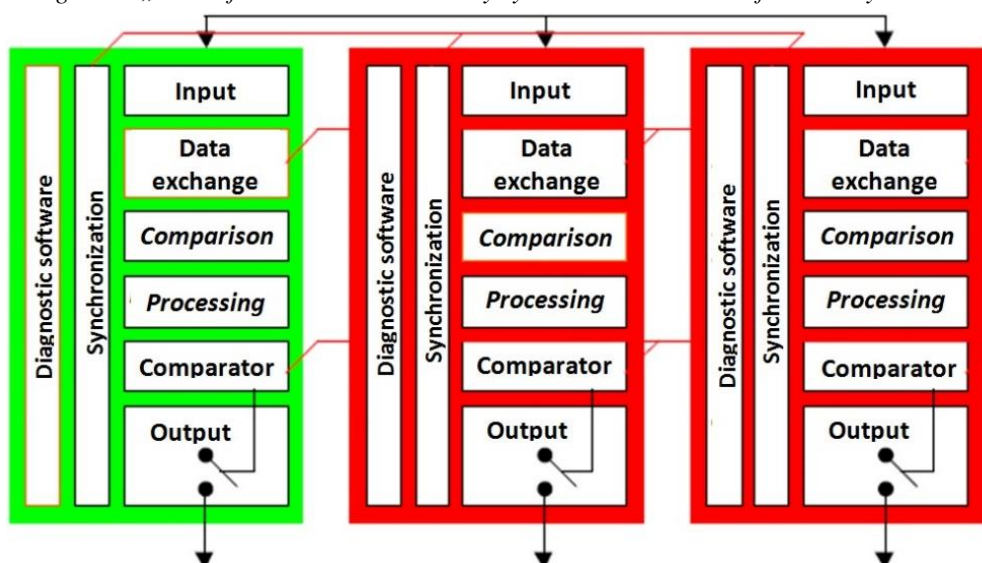
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<sup>9</sup>Safety Integrity Levels

In order to satisfy safety requirements, an automatic railway traffic control system has to be composed of at least two computers which communicate with each other. This communication allows for data exchange and mutual control. There exist also other systems in which only one computer is used. In order to meet safety requirements in these systems, second computer is used as reserve.

Multi-channel systems usually two or three-channel are called „2 out of 2” and „2 out of 3” respectively. The safety in this systems is achieved by hardware and software redundancy. Data from two computers are compared in this systems. The system „2 out of 2” behaves correctly if data from these computers are consistent. Inconsistent data cause safe reaction of system. In the system „2 out of 3” third computer is switched on when this inconsistency occurs. In this case the system considers only computers with consistent data.

Figure 1: „2 out of 3” rule in the railway system SIMIS-W manufactured by Siemens



Source: (Dyduch & Kornaszewski, 2013)

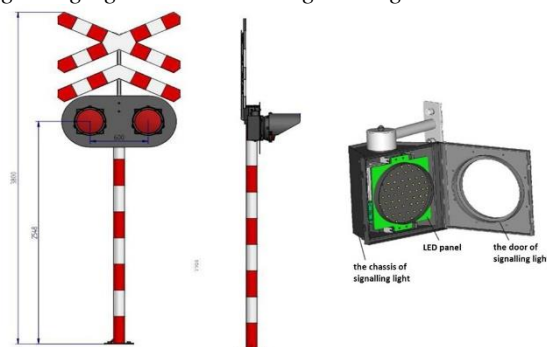
Two the same computers from fig.1 realize the basic rule. Computers continuously execute the same tasks. The results of operations are continuously compared. If there exist any inconsistency in data compared then the system goes to safe state (Dyduch & Kornaszewski, 2013). Operation of SIMIS-W system in mode „2 out of 3” is based on the above presented rule. The system in this mode is more effective than in mode „2 out of 2”.

### 3. LED Signaling lights

One of innovative technology introduced in polish railway lines are LED signaling lights. LED signaling light LED-20 manufactured by Scheidt & Bachmann GmbH is an example of this solution. Application of LED signaling lights enhances the safety of level crossing. This device warns about approaching rail vehicle. The device is fitted with two red lights placed side by side, which blink with frequency of 1 Hz.

The LED panel (fig. 2) is the innovation applied in signaling lights. It is a light-emitting component. It consists of heat sink and printed circuit board (LED matrix). The main difference between traditional signaling light fitted with light balls and LED signaling lights is necessity of using many LED diodes. The main advantages of LED signaling light are high durability and low consumption of energy (Scheidt & Bachmann, 2013).

Figure 2: Signaling lights LED-20 along with light chamber and LED matrix



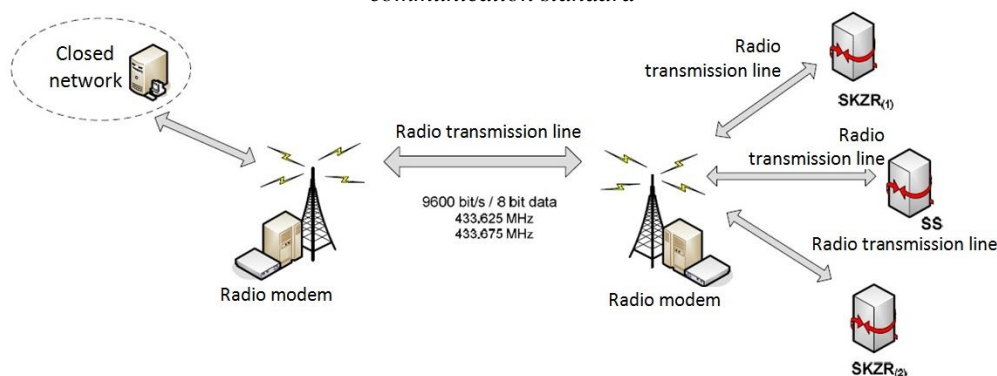
Source: (Scheidt & Bachmann, 2013)

#### 4. Open radio communication standards

In order to meet tough safety requirements in railway traffic control systems, open radio communication standard must fulfill two conditions. First, open radio communication has to guarantee optimal error detection from the point of view of speed. Second, the break in transmission has to cause the railway traffic control system to go to safe state. At present, manufacturers of railway traffic control systems propose different solutions to protect open radio communication. These solutions are usually based on radio communication standards (Dwornik & Mrvelj, 1999).

The example of innovative solution is railway traffic control system based on radio channel and radio modems. This system uses open radio communication to transmit data from sidetrack sensors. Fig. 3 presents open radio transmission system which uses radio transmission lines to communicate with station controllers (SS) and train axle counters (SKZR) (Lewiński et al., 2011).

Figure 3: Example of radio communication between subsystems in the conception of system with open radio communication standard



Source: (Lewiński et al., 2011)

#### 5. Unconventional supplying sources

Examples of the application of an unconventional supplying source in railway devices are photovoltaic cells. They can be used in case of absence of traditional electric supplying sources (Dyduch & Kornaszewski, 2013), (Umiliacchi et al., 2016). These systems can supply devices with low power and voltage 12V or 24V.

*Figure 4: Example of using photovoltaic cells to supply railway traffic control systems in Poland*



*Source: (PKP Polskie Linie Kolejowe S.A., 2010)*

Photovoltaic cell allows turning solar energy into electrical energy. However photovoltaic cells are not directly connected to the battery which stores energy converted. The controller located between photovoltaic cells and the battery controls the voltage level in the battery. When voltage exceeds maximum value then the controller switches off photovoltaic cells. Solar system also prevents the battery from full discharging. When the voltage decreases to minimum value then the system switches off the load. It is possible to obtain voltage 230V AC, but it requires adding DC/AC converter (Alboteanu et al., 2008), (Henze et al., 2003), (Kornaszewski et al., 2010).

In global scale solar systems are gradually introduced in railway transport in Poland as well. Photovoltaic cells are mounted on buildings belonging to railway infrastructure. Minimum life time for photovoltaic cells equals 25 years. In the future photovoltaic cells can significantly reduce financing costs. It is likely that solar systems will be installed on modern railway stations. First such system was launched in Poland in Nasielsk in 2014 (PKP Polskie Linie Kolejowe S.A., 2010).

## **6. Dedicated railway traffic control circuits implemented in Field-Programmable Logic Devices**

Algorithms implemented in many railway traffic control devices consist mainly of control functions and simple storage and processing operations. Therefore, they can be readily implemented in hardware. Such approach allows for fast implementation of control algorithms and does not need tools programs. Additionally an implementation of these algorithms in single integrated circuit enhances the reliability of this solution comparing with older implementation based on multiple circuits. Because of this, control circuits are more and more often realized in FPLD circuits (Abacoumkin & Ballis, 2004).

Contemporary railway traffic control systems are digital circuits. Therefore, they can be developed using methods which are commonly applied in designing standard digital circuit. VHSIC Hardware Description Language (VHDL) is world language (standard) which is particularly suited as a language to describe the structure and behavior of digital electronic hardware designs, such as PLDs and FPGAs as well as conventional digital circuits. Each modern program allowing for digital electronic hardware design contains VHDL, simulation and synthesis tools.

Entity: Signal1  
Architecture: Signal1\_arch

Inputs: CLK, Reset, In\_STOP, S\_Signal, R\_Signal, C\_Proceed, S\_Route, Tc

Outputs: M\_Release, A\_Release, T\_checking, STOP, Proceed

Internal Signals: S1, S2, S3, S4

Logic:

- S1:** Reset=1' → S1. S1 → S2 (Route=1' and In\_STOP=1' and S\_Some=1' and R\_Signal=0'). S1 → S3 (C\_Proceed=0' and T\_checking=1'). S1 → S4 (C\_Proceed=1' and T\_checking=1' and S\_Route=1'). S1 → S2 (A\_Release=1' or M\_Release=1').
- S2:** S2 → S1 (@else). S2 → S3 (STOP=1', Proceed=0'). S2 → S4 (STOP=1', Proceed=0').
- S3:** S3 → S1 (Fixed=1'). S3 → S2 (Fixed=1'). S3 → S4 (Fixed=1'). S3 → S1 (M\_Release=1').
- S4:** S4 → S1 (Fixed=1'). S4 → S2 (Fixed=1'). S4 → S3 (Fixed=1'). S4 → S1 (M\_Release=1').

Fig 5. presents example of control module of traffic signaling lights. Its operation was specified using Finite State Machine (FSM<sup>10</sup>) description in flow chart editor (Kawalec & Rzyśko, 2016).

## **7. Level crossing system SZP-1 as an example of application of world innovative technology in railway transport in Poland**

Level crossing system SZP-1 (fig. 6) is now under test in polish railway lines. It is an example of distributed system in which wireless transmission (Kim et al., 2015) and photovoltaic cells (Vorobiev & Vorobiev, 2013) have been used.

The diagram illustrates the proposed system architecture for a railway level crossing. It is divided into three main sections: Local Traffic Control Center, GSM transmission, and Source solar energy.

- Local Traffic Control Center (UZK):** This section includes a control desktop (UZK) and a local antenna. It is connected to the GSM transmission cloud.
- GSM transmission:** This section shows a cloud connecting to three services: Manufacturer's service, Exploitation's service, and Diagnostic's service.
- Source solar energy:** This section shows two solar panels connected to two antennas. These antennas are connected to the GSM transmission cloud.

The system components and their interactions are as follows:

- Wheel sensor:** Located at the entrance of the level crossing, it provides input to the level crossing warning signal.
- Level crossing warning signal:** A signal that alerts drivers of an approaching train.
- Automatic level crossing system or controlled by local traffic control center:** The central control system for the level crossing.
- Container (control, supply):** A unit that provides control and supply to the system.
- Train:** A train passing through the level crossing, with a sign indicating "ATTENTION TRAIN".
- Active information for drivers:** Information provided to drivers to ensure safe passage through the level crossing.

SZP-1 system exchanges information using Ethernet and wireless medium. Thanks to application of photovoltaic cells, the system is continuously supplied. When the light intensity is low then the system is switched into batteries (backup power supply). Batteries of capacity of 80 Ah can supply the system over 120 hours (Nowakowski & Kornaszewski, 2011).

<sup>10</sup>Active-HDL package



## 8. Conclusion

World innovative technologies introduced in polish railway lines (for example application open radio communication standard and unconventional supply systems) can be an alternative for technologies using currently in railway transport. Besides simple replacement of old technologies they increase the safety of railway traffic control system through introducing „intelligent” service.

Introduction of innovative technologies in railway transport for example LED signaling lights, solar systems or open radio communication standard has an immense impact on the safety and reliability of railway traffic and cost reduction as well. These alternative solutions seem to be particularly useful in time of globalization of markets in Europe and in the world.

Modern railway traffic control systems are characterized by modular construction of software which allows for fast adaptation of the system to new requirements. Additionally these systems are fitted with diagnostic functions. They can also record events continuously for at least 24 hours. Application of information technologies in railway transport is to increase the safety of railway traffic through limiting mistakes made by people.

As a result, it is concluded that railway transport develops continuously and new innovative technologies contribute to this progress.

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## RUSSIA IN EUROPEAN INNOVATION SPACE IN THE CONTEXT OF GLOBALIZATION

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**Abstract.** The main manifestations of globalization in the sphere of innovations in modern conditions are: the regional economic integration; strengthening the role of international organizations to enhance cooperation in science and technology; transition from closed innovation model to a model of open innovation; the dominance of TNCs in global innovation processes; international labor migration, including the exchange of scientists. Russia's focus on the development of relations in the post-Soviet space is not beneficial, although it is the priority in terms of national and economic interests. Eastern direction of cooperation was not active throughout the period after the collapse of the USSR. Meanwhile, prospects for cooperation within APEC and especially with China become apparent but mainly in the energy sector. In the field of science, technology, innovation these processes are not active enough yet. Paper gives an overview this of such experience on the example of the EU-Russia cooperation over past twenty years. The analysis is based on information drawn from the journal Innovation because it is one of the leading journals in this the field in Russia. Paper presents (1) generalization of the information from publications over specified period; (2) systematization of practice of cooperation based on an analysis of policy documents; (3) current trends; (4) forecast of perspectives in scientific and innovative cooperation of the parties involved. Results of the research can serve as a basis for further research and development in the field of evaluation of the programmes for potential scientific and innovative cooperation between EU and Russia.

**Keywords:** Russia, European Union, globalization-regionalization, scientific and technical cooperation, framework programmes

**JEL Classification:** O32, O38, F63, F68

### 1. Introduction

Due to the widening and deepening of integration processes in the world, Russia has to attend to vectors of international scientific and technical cooperation not only within the CIS and other friendly associations, but also with the EU, as well as the Asia-Pacific region and in particular with China. Current shift of Russia's interests to Asia-Pacific region does not lead to a halt in traditional priority areas, such as cooperation with the EU. It should be noted that the advances in EU-Russia energy cooperation policy is one of important area of cooperation (Boute, 2011). In this context, the continuation of the EU-Russia scientific cooperation seems most urgent, but

anti-Russian sanctions and economic crises have left their mark on this process. One of the key elements of EU policy in a crisis is to stimulate research and innovation (Ulnicane, 2016).

### **1.1 The review of the literature, the development of existing methodological approaches and methodology**

Currently, globalization theory has been widely developed as an important space for the realization of the world's innovation processes. So far there isn't a unified interpretation of "globalization" category, and there is no generally accepted concept of globalization. (Pashkus & all, 2015) "Globalisation is defined as the integration of economies, industries, markets, cultures and policy-making around the world" (Saxunová, 2015). The essence of globalization of the economy is revealed through the integration process. In the context of globalization as intensive growth poles there are the knowledge-intensive regions with high scientific and innovative potential: the EU, NAFTA, APEC, BRICS, CIS, and EAEC. Innovation is one of the most important factors in regional development (Jiricek & Babjakova, 2015).

In the context of globalization processes of regional economic integration intensify. It is also reflected in the research (Camagni & Capello, 2013). In addition, attention is drawn to stimulation of innovative processes on the global markets. . It should be noted that sustainable growth through innovation is most often carried out by the search and the exploitation of opportunities in existing or new markets, or by creating new markets (Janošková & Král', 2015). In recent years, the processes of de-globalization, glocalization are rapidly unfolding and therefore a new phenomenon of the re-localization needs investigation including the re-localization within the EU. At the same time, in parallel with these national and nationalist movements often arise regional or local structures, which benefit from the know-how and technology of the globalized world, and they create smaller interconnected economic and social structures. The essential feature of these local structures is not an effort to achieve the highest profits, as in the global economy (Butek, 2015). Formation and development of the global science and innovation environment will encourage a shift to open innovation. The theory of open innovation, first formulated by H. Chesbrough, is one of the most effective ways to implement innovation. Modern innovations have developed in an open market environment, a high level of competition, the availability of global communications systems and an increase in the rate of generation and dissemination of innovations. As a result of this process dramatically the intensity of the interactions between countries, companies, communities increased. Open innovation is the use of targeted incoming and outgoing flows of knowledge for accelerate internal innovation corresponding expansion and external use of innovation (Chesbrough, 2003). Interactions between EU and Russia in scientific, technological and innovation areas have developed significantly before 2000s and before new sanctions in reaction to Ukrainian crisis. The EU-Russia cooperation has gained a lot of attention since 2000s and was discussed on pages of "Innovation" journal. Issues of this journal were used as a basis for analysis because the journal is the only Russian research journal dedicated to topics of innovation economics, innovation policy, cooperation in science, technology and the innovation sector between countries, regions, regional integration groups and other relevant aspects of economics of science and innovation. Papers from 1996 to 2015 and dedicated to the topic of cooperation between Russia and the EU in the innovation sector in the context of globalization were analyzed. The aggregate results of these papers are presented as the summary in the table 1. The authors recognize that there are other publishers in Russia, publishing materials on this topic. Among them are such journals as "Problems of Economics", "Foresight", "Economist", "Russian Economic Journal", "Economics and Management", "Problems of Theory and

Practice of Management” and others. However, as shown by analysis of the above-mentioned papers, number of publications on this topic is sporadic and not focused. Hence, the choice of the journal “Innovation” is a limitation of this study.

*Table 1. Papers from “Innovations” (1996-2015) dedicated to the topic of cooperation between Russia and the EU in the innovation sector in the context of globalization*

Author	Title	Key topics
Antonov I., Interview with Yanovsky A. (2005. vol.6. pp. 86-88)	European innovation transfer centers become familiar with the Russian technology transfer network	Prospects for the development of cooperation between Russian technology transfer centers with European innovation transfer centers
Ivanov, V.V. and Sokolova, M.S. (2007. vol 7. pp.19- 25)	Main directions and results of cooperation of the Russian Federation and the EU in the field of innovation in the framework of EU TACIS/EuropaAid programme (1996-2006)	Directions and results of Russia-EU cooperation in the field of innovation in the framework of EC TACIS EuropaAid program, highlights of the most large- scale projects implemented in 1996-2006
Luksha, O.P., Pil'nov, G.B., Rygalin, D.B. & Janowski, A.E. (2008, vol.11. pp. 25-33)	Russian Business Innovation Network – a new large-scale project of cooperation between Russia and the European Union	Gate2RuBIN project as the first large- scale example of Russia's participation in the European business and innovation networks
Luksha, O.P., Yanovsky, A.E., Pil'nov, G.B. and Alferov, Y.B (2009, vol.10, pp. 18-32)	Russian Technology Transfer Network, as part of the national innovation system: methodology, practice, prospects	The interaction of the Russian Technology Transfer Network (RTTN) and the European Enterprise Network (EEN)
Luksha, O.P., Pil'nov, G.B. and Janowski, A.E. (2012, vol.10, pp. 31-36)	Development of the multilateral cooperation between Russian Federation and the EU in the field of research and innovation: new trends and prospects	The internationalization of research and innovation activities in Russia and the EU: the improvement of existing mechanisms and development of new effective models
Smirnova, Zh.Yu., Rygalin, D.B., Larchikov, A.V. and Petryaev, D.A. (2012, vol.6, pp. 30-35)	Investigation of possibilities of cooperation between the Enterprise Europe Network and National Contact Points network in Russia	Partnerships and development of joint research activities as a factor in the formation of the EU-Russia common area
Grachev, E.N., Larchikov, A.V., Petryaev, D.A. and Rygalin, D.B. (2012, vol.1, pp. 29-36)	Research of opportunities, tools and results of participation of Russian companies in tenders of the 7th EU Framework Programme	Possibilities of scientific and technological cooperation between Russian small and medium-sized innovative companies and European organizations
Luksha, O.P., Pil'nov, G.B., Shpisberger, M. and Janowski, A.E. (2013, vol.5. pp. 39-44)	The new model of multilateral EU-Russia scientific cooperation scheme ERA-Net	Advancements in the international Russian-European scientific and technical cooperation within the ERA-Net
Luksha, O.P., Pil'nov, G.B. and Janowski, A.E (2013, vol.4, pp. 79-86)	Support infrastructure projects of international scientific-technical cooperation between Russia and the EU: current state and prospects	Challenges of formation of a unified national infrastructure to support international R&D projects based on the integration of NCP and EEN-Russia networks
Klavdienko, V.P. (2014, vol.4, pp. 94- 97)	The new Framework Programme for Research and Innovation: generous financing in difficult times	Deepening of EU-Russia cooperation through the Framework Programmes: Problems and solutions

*Source: made by authors*

The analysis shows that from 1996 to 2005 as well as in 2015 there were no papers on the subject in question in the journal. This can be explained by the fact that the systematic

cooperation between Russia and the EU in this field started to manifest itself in 2005. Some interruption takes place in 2014, since the beginning of anti-Russian sanctions and, as a consequence, the decrease in number of EU-Russia contacts. An indirect confirmation of this is the fact that the direct participants of the EU-Russia contacts O.P. Luksha and A.E. Yanovsky moved on to another research problematic, in particular on multilateral cooperation among the BRICS countries (Балашова et al., 2016).

## **2. Generalization of the information from publications over specified period**

Stable, sustainable and progressive development of the European economy, its secure position in the global scene is the most important goal of EU innovation policy. The EU attaches great importance to the development of innovative processes, as well as the improvement of methods and tools for innovation policy (Lipkova, 2012). In the Horizon 2020 programme major role is given to industrial innovation, ensuring the competitiveness of the EU (Filos, 2013). Factors of development of innovation system of the EU are among other important issues (Cagnin et al., 2012).

Currently European innovation system includes the following: Public-private partnerships in the area of research and development: green car, factory of the future, energy efficient buildings, Internet of the future; “Innovation union”; European Research Area (ERA), unified and coordinated scientific market. ERA consists of: Network research infrastructure; Public-private partnerships and scientific research clusters; Knowledge transfer between state sector and industry on the basis of harmonized intellectual property protection regime; Opening of ERA for third countries. “Innovation Union” is critical for the activation of innovative processes and enhancement of their efficiency gains (van den Hove and al, 2012). European development strategy until 2020 focuses on the comprehensive innovative development of Member States (Oberer & Erkollar, 2011).

Let us uncover main trends in international cooperation between EU and Russia in science, technology and innovations. There were several ways of Russia-EU interactions before sanctions. It includes initiated by EU opening of ERA for third countries, Eureka program European program of scientific and technical cooperation in the field of high technologies, founded in 1985; Russian Federation was accepted as a member in 1993. In the context of Russian-EU strategic partnership since 2000 there is a deepening of internalization of research targeting to integrate Russia into European research area. The main tool here is Framework Programme for Research and Technological Development. The 7th Framework Programme has been completed in 2013, and Horizon 2020 programme has started in 2014.

7th Framework Programme was a principal global tool for financing research projects in Europe in 2007-2013, covering whole of Europe as well as Russia and other countries. Although Russia is not a EU member state or a country associated with Framework Programme for Research and Technological Development, it is a International Cooperation Partner Country (ICPC) in terms of realization of the 7th Framework Programme. Such a status was enabling Russian researchers to take part in all collaborative research projects with European colleagues and receive European grants within the 7th Framework Programme.

Russia was a leading partner among third countries within FP. Projects with Russian researchers won 271 times, there were 428 Russian organizations taking part, and Russia was leading by the value of funds received – 57,6 million Euros. Results are higher than for US or BRICS. Within the 7th FP as well as in many other programmes Russia was a third country, but

a cooperation partner country in collaborative research projects with EU member states. By the end of 2011 Russian organizations took part in 302 grant agreements under the conditions of the 7th FP and received EU funding amounting to about 59 million Euros. It is notable that Russia was leading in the number of participants and amount of funds for the third countries. This Programme was supporting projects in research fields such as biotechnology and nanotechnology, non-nuclear energy, human health. PLAPROVA project was dedicated to developing technologies to produce vaccine proteins in plants. The result of three year work is a new technology for production of more effective vaccines from such prevalent for EU and Russia illnesses as bird flu, “blue tongue”, FMD, etc. European Commission has granted about 2 million Euros for support of European participants of the project. Russia has contributed the equivalent amount for Russian participants, particularly for Centre “Bioengineering” of Russian Academy of Science, Faculty of Biology of Moscow State University, Influenza Institute of Russian Academy of Medical Science and Federal Centre for Animal Health. The FP7 consisted of 4 research and development priorities Cooperation programme, Ideas programme, People programme, Capacities programme. For example, Cooperation programme was supposed to support a wide range of transnational research initiatives from collaborative projects and networks to coordination of national research and development programmes. Collaboration with third countries was an important part subprogramme with budget of 32,413 billion Euros.

International cooperation with Russia was supported with following tools: joint research, technological platforms, coordination of national research projects, common technological initiatives. Russian organizations took part in all thematic competitions within the Cooperation programme in FP7. By the end of 2009 more than 320 Russian organizations has been selected to participate in European consortiums for the implementation of FP7 projects and received about 38 million Euros. Four important projects aimed at Russia or including Russia as a partner were executed in the Capacities programme and dedicated to support and stimulate scientific and technological cooperation between EU and Russia. These projects included. International cooperation network IncoNet covering Eastern Europe and Central Asia (EECA); BILAT-RUS started in September 2008 with an aim to boost bilateral scientific and technological EU-Russia cooperation. It is also dedicated to providing information and methodological support for joint working groups under the Agreement for scientific and technological cooperation; ERA.Net RUS project started in November 2009 and was focused on coordination of national research programmes of EU Member States with Russian programmes. The project provides tools for development and implementation of the concept of pilot competition with the participation of several European countries and Russia. ACCESSRU project started in November 2009 and was supposed to help integration of European researchers into Russian research and innovation programmes.

The potential of scientific and technical cooperation between EU and Russia cannot be reduced solely to FP7. Competitiveness and Innovation Programme-Framework (CIP) started at the same time with FP7. It was created to support European business initiatives, particularly small and medium enterprises, industrial competitiveness, innovations, ICT. This programme complements supporting measures within the EU framework programmes dedicated to scientific and technological development. CIP budget in 2007-2013 was 3.6 billion Euros. It dedicated to stimulating innovation enterprises and was not aimed at research and development. The majority of funds were allocated for support of small and medium business, green energy and for development of entrepreneurial, and information and consulting networks, particularly Enterprise Europe Network (EEN). There are 600 organizations in EEN: contact points from 40 countries, including 27 EU Member States. Russia also has been connected to EEN, and in 2005 the joint

Russian-British project Gate2RuBIN was dedicated to creation centre for technological cooperation of innovation companies and research organizations in Russia and EU.

Russian consortium Gate2RuBIN consists of several partner organizations: Russian Union of Innovation and Technology Centers, Russian Technology Transfer Network, Russian Agency for Small and Medium Business Support. This consortium became a part of EEN in order to create conditions necessary for establishment of partnerships among Russian and European companies and research organizations. The main priority for CIP and Gate2RuBIN is support of internationalization of small and medium innovation and export oriented enterprises. Gate2RuBIN project was supported by the Ministry of Economic Development of the Russian Federation and the Fund for Small Innovative Enterprises in Science and Technology. According to data from European Agency for Competitiveness and Innovation (EACI), Russian Federation is the most effective partner of EEN countries that are not EU Member States. During 18 month (January 2011 – June 2012) Russian consortium prepared about 800 offers for companies and organizations interested in cooperation with European partners (513 for business cooperation and 280 for technological). For comparison: all other third countries together prepared about 500 profiles.

Other topical EU initiative in cooperation with Russia in research and innovations is targeting the development of infrastructure in order to increase effectiveness and rate of participation in FP7. It operates within the CIP framework and includes cooperation between EEN and Russian National Contact Points (NCP). NCPs are the structures on a national level created and funded by EU in order to lower the transaction costs for researchers who participate in FP. The core project here is Gate2RuBIN, with its help EEN-Russia supports Russian organizations taking part in EU framework programmes. This project has such tools as search for Russian teams with necessary research and manufacturing competence relevant for European demands, support of Russian teams participating in specialized supporting FP7 projects aimed at Russia. Main results of this project in 2009-2013 list more than 80 Russian companies gaining individual support in specialized FP7 projects; more than 100 Russian companies took part in broker events; 46 companies took part in consortiums applied to FP7.

NCP network was created in order to coordinate interactions among Russian and foreign Russian scientific organizations and research groups during research project launched by the European Commission. As the result Russia has acted as partner in several big projects: Large Hadron Collider (LHC, CERN, Switzerland), European X-ray free electron laser (European XFEL, DESY, Germany), Facility for Antiproton and Ion Research (FAIR, Germany), International Thermonuclear Experimental Reactor (ITER, France) and others.

All listed projects are located in partner countries. It is not only slowing down development of Russian research infrastructure, but it also limits Russian researcher access to unique scientific equipment. There are such barriers as visa, transportation and accommodation costs, as well as changes in foreign policy. Thereby, Russia should seek to develop its own research infrastructure, in Russia, within international cooperative programmes dedicated to create new unique scientific facilities. Cooperation increased due to project BILAT RUS Advanced called “Deepening the EU-Russia partnership in research and innovation”. The project ensures constant intensive dialog and coordination between European and Russian governmental bodies and authorities such as the Ministry of Education and Science of the Russian Federation and corresponding Ministries or Councils of EU Member States. According to some researches EU-Russia interactions concerning science and innovation did not decrease, but significantly increased (Лыкина et al., 2013).

Other crucial for strategic partnership programme is a bilateral EU-Russia initiative “Partnership for Modernisation”. Its goals are economic and technological modernisation of the



Russian Federation. Priorities for cooperation here were stated as following: investment in key sectors driving growth and innovation; promoting alignment of technical regulations and standards, as well as a high level of protection of intellectual property rights; strengthening cooperation in the field of innovation, research and development, and space programmes.

In recent years, the EU has started to develop new promising mechanisms to coordinate their research and innovation programmes with the Russian Federation in order to enhance parity and equal cooperation. First, there were introduced coordinated tenders for co-financed research projects in the field of health, biotechnology, nanotechnology, ITC, energy, aeronautics. Second, multilateral competitions under the ERA-NET are a European model of transnational network of multilateral cooperation within the European Research Area. The model was tested in the project ERA.NetRUS. Within its framework in 2011 two multilateral competitions were organised: international innovation projects competition and science and technology projects competition. As a result of second competition 11 Russian-EU innovation projects demonstrated the high potential of commercialization and matched Russian priorities in the field of science and innovations and have been supported (Jlykma et al., 2012).

Thus, the EU and Russia cooperation over twenty years has been steadily expanded and deepened. But anti-Russian sanctions changed EU perception of Russian business climate. Russian business climate was worse than in comparable countries; it has deteriorated even more now, risks have increased, transfer of technology and investments have almost stopped. Of course, it is not in Russia's interests, as the current state of innovation processes requires activation. It is shown in table 2.

Table 2: State of innovative processes in Russia on macro-regions

District/Indicator	Central	North West	South	Northern Caucasus	Volga	Ural	Siberia	Far East	Russian Federation
Gross domestic expenditure on R&D (mln. Rub)	447161,2	118612,3	29274,3	4197,3	126552,4	48799	58435,9	13714,2	847527,0
Expenditure on technological innovation (thous. Rub)	377883,3	92916,6	67365,7	9746,1	331308,2	122952	150314	59152	1211897,1 (mln. Rub.)
Number of patents issued	12581	1669	1267	742	3406	1010	1906	482	23065
Innovation activity of organizations	10,9%	10,3%	7,7%	6,5%	11,4%	11,4%	8,8%	8,9%	9,9%

Source: The Federal Statistics Service; Indicators of innovation activity

### 3. New trends and prospects of cooperation

After sanctions EU-Russia cooperation continues in many ways, particularly as bilateral 18-24 month long projects. This is evident in the ads of the Foundation for Assistance to Small Innovative Enterprises in Science and Technology placed in the "Innovation" journal (2015, vol.11). Among others it includes joint Franco-Russian projects aimed at creating innovative products and technological developments. These projects are commissioned within the Agreement on cooperation in the field of industrial and technological development between France (on behalf of the French Innovation Agency) and Russia (on behalf of the Foundation for Assistance to Small Innovative Enterprises in Science and Technology) from 16 June 2009. Foundation for Assistance to Small Innovative Enterprises in Science and Technology accepts

applications to Russian-Finnish international cooperation programme. The competition is designed to support companies that perform prospective developments. These companies should have international partners to boost product competitiveness, commercialize the results of scientific and technological activities through access to advanced technologies and expertise and launch jointly developed product to the market. Due to critical state of Russian economy and difficult economic situation in Finland, Finland is also interested in innovation and cooperation in scientific and technological development. Of course, Finland suffers great losses from the European sanctions policy and in order to be consistent overall EU policy supports sanctions but also is cooperating with Russia and participate in joint projects, such as construction of a nuclear power plant “Hanhikivi 1” and icebreaking vessels.

In all of the listed above projects the small enterprises are involved. It is not so challenging under sanctions. It can be explained by the fact that small companies unlike major Russian state-owned companies are apolitical. Research into experience of European countries, especially Slovakia, helps in finding tools for activation of innovative processes in Russian small business (Loučanová et al., 2015). Moreover, the situation can change for better in any moment and it will depend on EU position, particularly German one, and whether the EU will be creating the “Large Europe”. It gets new perspective when in the near future the US will be the scientific and technological leader of the global economy, Japan will secure its prominent position and China will continue to strengthen its R&D capacities. The results of the St. Petersburg International Economic Forum, held in June 2016, and the speech given by Jean-Claude Juncker at European Commission plenary meetings give hope to mitigation, and eventually to the lifting of sanctions against Russia. It may restore the broken bonds in the field of science, technology, innovation.

#### **4. Conclusion**

By and large EU is not interested in technological strengthening of Russia. EU is more interested in mineral products, particularly fuel and energy products. Even the high-tech economies can not stop using such natural resources, as evidenced by the recurrent energy crises. EU has been exporting technology and equipment to Russia but it was mainly intended for fuel and energy sector. At the same time, EU-Russia cooperation in research and innovation is beneficial not only for the Russian Federation. This is evidenced by their long-term relations in this area and especially if the funding does not cross the border of the EU. European countries are interested in such projects as a way to gain technological leadership and to overcome the lagging behind USA and Japan and in near future possibly from China. As part of the Horizon 2020 execution the question of status of the Russian Federation was raised. The status of associate member could strengthen Russian position in this partnership; it also allows claiming the position of the ERA subject. Anti-Russian sanctions changed EU perception of Russian business climate. Russian business climate was worse than in comparable countries; it has deteriorated even more now, risks have increased, transfer of technology and investments have almost stopped. These factors show the tendency towards inertial scenario of Russian participation in Horizon 2020. However, there is a goal to attract third country researchers under the “Excellent Science” Pillar within Horizon 2020. There is 55% of foreign researchers in the research institutes of the Max Planck Society; about 5% are Russians. This trend in terms of global innovation processes remain. Russian is not interested in any way in stopping EU-Russia cooperation in innovation.

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# THE INFLUENCE OF MODERN SOLUTIONS ON THE COMPANY'S IMAGE IN THE PROCESS OF GLOBALIZATION

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**Abstract.** Changes occurring in economic and social processes (globalization) and development of new information technologies (IT) influence companies' attitudes towards operating and effectively competing in the global market. Those changes result in increased demand for new tools and functions increasing operations' efficiency, increasing flexibility, enabling better communication with the environment, building competitive advantage and so on. Development of information systems allows improvements in companies' activities, and results in the creation of new products and services responding to the increase in customers' needs and requirements. The ability to cope with the expectations of modern management significantly influences the way in which a company is perceived by the environment, its image and its competitive position. Image plays an important role for each company, especially for the service-based ones. It influences the way in which the company is perceived and is evaluated by its environment from the point of view of its relationship with the external and internal environment, services' offer, its reliability and trustworthiness. The company image is changing in time and space, it can be shaped and it is influenced by new trends and opinions emerging in the modern world. As a result, companies constantly search for new solutions that would allow them to distinguish themselves in society and help them to acquire new customers. This paper aims at presenting some of the organizations' actions that may influence their market image - ECR – Efficient Consumer Response, RFID - Radio Frequency Identification, CSR – Corporate Social Responsibility.

**Keywords:** company's image, IT, corporate social responsibility, efficient consumer response

**JEL Classification:** O14, O32, R49

## 1. Introduction

The processes that take place in the contemporary world, such as internationalization, globalization or regionalization make companies face more and more challenges. The ability to meet the expectations of the modern economy influences strongly the way a company is perceived, its image, and its position among the competition. That is why companies search for new solutions, enabling them to distinguish and to find new customers.

Image plays an important role for each business entity, especially for those which provide services. It decides how the given company is seen in its environment and how it is estimated by them from the perspective of company relations with the external and internal surrounding, its service offer, reliability, the trust customers have in it, etc. Among the factors influencing the image, one may point to the name of a company, its logo, service offer, service availability

and quality, the price level, promotional activities, the culture of the organisation, infrastructure, its employees - especially their knowledge, competence and skills. Such factors have different influences on how the image of a company is shaped and what market position it occupies. In literature on the subject, one may find many concepts of shaping and managing the company image (Buil, Catalán, & Martínez, 2016). It is beyond doubt, however, that each company may be distinct in that issue, exposing the chosen aspects or addressing the image to the targeted part of their environment. Nevertheless, the image must always be coherent with the mission and the vision of the company, its strategic goals and the set strategy. The choice of tools to shape the image depends on the company, its range of activities and its individual needs. One may include in them, among others: the visual identification system, quality management, advertising, public relations, sponsoring and the communication between the instruments and the environment. Shaping the servicing company image is more difficult, especially in the situation when it has strong competition and customers' demands are increasing. However, this is also the situation when the image constitutes the basis to create consistent relations with the environment in its broadest sense, and the basis to achieve a dominant position in the market (Silveira, Lages, & Simões, 2013).

In the article there have been presented some of the activities of logistics companies, which influence the way their image in the market is shaped.

## 2. Internet

The world-wide computer network that the Internet became and development in computer technologies enabled the introduction of computer technologies to support the management of organizations. In addition to extending the reach of the Internet, newer and newer ways of transmitting the signal were introduced. The Internet enables communication with the environment more cheaply than any other means of communication.

Many organizations perceive the Internet, especially web-pages, as a way to reach potential customers. The network catalogues (integrated Websites) allow electronic trade (e-commerce). The companies' offers are often presented on web-pages. A customer can browse through constantly updated offers. Order forms are often available on the web-pages. There is also the possibility of customers asking additional questions (Guzior, 2001).

Having one's own website allows one to provide information to the interested audience. Access to the information is unlimited – the company Internet address operates worldwide and the information is available 24/7. Costs of web-site creation and maintenance are lower than advertising in other media. Direct marketing is a successful Internet promotional method. An exemplary tool of that promotional method is e-mail – promotional materials can be sent to a large number of receivers. This method is cheap, but it may be perceived negatively, as a breach of privacy. Various promotional materials concerning a company's activity may be spread by e-mail, e.g.: press information, reports, photos and promotional leaflets, as well as financial results (Guzior, 2001).

The correct use of electronic communication's potential positively influences traditional sales. E-mailing techniques, being a cheap and effective method of Internet advertising, have been in use in Poland for several years. One of the reasons behind the dynamic development of Internet advertising is the growing number of Internet users, both on the part of companies and customers. Another advantage is that it helps to create a company's reputation as one that quickly adapts new technologies and is constantly developing (Budzyński, 2000).

The Internet allows for tailoring the advertising message to the needs of the individual customer. It also presents great opportunities for advertising and evaluating its effectiveness and efficiency. One of the most popular forms of Internet advertising are small ads submitted in various catalogues, bookmarks or Internet magazines. Advertising in the form of multimedia presentations, banners and special links is also significant. The Internet banner takes up only a small part of advertising coverage and because of that, its skilful placement highly influences its promotional effectiveness (Guzior, 2001).

### **3. ECR – Efficient Consumer Response**

ECR is a modern supply chain management strategy according to which the manufacturers, distributors, merchants, retailers and logistics specialists cooperate in order to fulfil the needs of a client in the best, most efficient and quickest way. In 1992, in the USA the group of production and trade companies of the food industry created the working group, meeting consumers' needs effectively. Its task was to identify the potential possibilities to introduce changes in management or technology, which were to make this industry more competitive. The report showing the results of their work, published in 1993 is claimed to be an official beginning of research to introduce ECR into the supply chain. The benefits of such an idea were also spotted quickly in other countries, especially in developed ones. Due to globalization, the ECR strategy aroused growing interest, mostly among FMCG companies, but other sectors of the market also became interested (Kurnia & Johnston, 2003).

The common desire to maximise the efficiency of the whole chain instead of traditional focus on the efficiency of its links leads to the decrease of the total costs of the system, of the stock level and of the capital engaged, and at the same time, increased value for the final consumer.

The basic rules and concepts of ECR are as follows (Baraniecka, 2004): cooperation instead of confrontation, focusing on the consumer, maximizing the values supplied to consumers, information effectiveness, facilitating the flow of goods, unifying measures of effectiveness of the services provided.

The idea of ECR is based on three elements: first: ensuring the required service level, second: eliminating costs which do not add value nor maximize effects, and third: eliminating barriers within the whole supply chain; such an approach offers the following bonuses (Lohtia, Xie, & Subramaniam, 2004): for a buyer and a consumer – the wider range of products and shopping convenience, minimizing the situations of the lack of products, fresher and cheaper products; for a distributor – increased consumer loyalty, better market orientation, improved business relations with suppliers; for a supplier – facilitating the production- demand synchronization-limiting product shortages, the increased brand position, consistent business relations; general profits for everybody – fast reaction for consumer needs, reduction in costs, increased customer service level, strategic and operational planning development for the whole supply chain, effective stock management, effective assets use, increased product quality, more flexible business behaviour.

The supply aspect of the ECR is focused on the integrated set of four improvement concepts, each of which responds to the fast and efficient supply of goods within the whole supply chain; the area of the management of demand focuses on the issues of understanding and managing product and service demand.

## 4. RFID - Radio Frequency Identification

The important factor, which decides about the efficiency and often- profitability - of logistics processes management that are conducted within the integrated supply chain is the possibility to gain and use information about the given product quickly. The effective stock management, fast and precise order realization, the possibility to monitor the dispatch on each part of its journey – these are only a few of the advantages of using automatic identification systems in logistics.

Automatic identification is a modern method of information management, which facilitates collecting, gathering, transforming and transferring data, allowing, among other things, for (Korczak & Kijewska, 2009): eliminating mistakes when inserting and reading the data, accelerating the pace of the operations conducted, improving the quality of customer service, facilitating work for personnel, facilitating resources management, facilitating the material and document flow control.

Automatic Identification Systems (SAI) are the programs and devices which enable the gathering, printing, reading and transferring data given by various media, such as bar codes, RFID transponders etc. Bar codes are widely used e.g. in product distribution, transport, storing, selling, services, production, state administration, postal services, shipping companies, army, banking etc., because they are the cheapest and most effective means of automatic data gathering. They may be used wherever the identification of the particular services, goods or documents is necessary. Nonetheless, bar codes, despite all their advantages, have had a few crucial faults which have contributed to the implementation of other solutions for automatic identification (Lee, Ho, Ho, & Lau, 2011).

RFID technology is an innovative automatic identification system for different types of objects. It is based on radio waves and allows for quite efficient automation of the work connected with data reading, it is comfortable and easy to use. When an identifier (transponder, tag), equipped with a processor and placed on an object is near a reader, the latter sends a radio signal which awakes the former and makes it reveal the data contained (Chen & Jin, 2012). We may use two types of identifiers: passive ones (without power pack) and active ones (with power pack). The reader may store the received data or send it to the computer. Identifiers may be set just to read (the information is permanently saved) or to read and write into (the information may be saved by the user).

Transponders may be shaped as: key rings, glass capsules, discs, carts, labels which offers the opportunity to be used widely. A typical RFID system involves: the RFID identifier (transponder or a tag (label)) containing data about the object, the aerial used to transmit the RF signals between the reader and the RFID device, the transmitter/ receiver which generates the RF signals, the receiver to read the transmission from the RFID device and to send it to the managing system for further processing and programming (Sun, 2012).

The basic advantages of using transponders/ tags identifiers are as follows (Mingxiu, Chunchang & Minggen, 2012): resistance to external conditions, better resistance to mechanical damage (abrasion) in comparison with traditional bar codes, no contact with the reader required, there may be other objects or surfaces (except for metal ones) between the transponder and the reader, the possibility to read the information from many objects simultaneously, a high level of security, protecting the information against copying, a low level of data transmission errors, provide the possibility to save a lot more information than in the 1D and 2D codes.



The radio frequency which the RFID devices use is the main factor that influences the range of saving/ writing, interference and the rest of its functioning features. Recently, some standards have been created defining RFID in the UHF frequency; their goal is to create the global RFID standard, which provides: compatibility of the devices and the identifiers made by various manufacturers, further functionality development of the technology (increasing range, providing anti-collision, transmission optimization, safety matters, etc.), solving the problems with different radio frequency in various regions of the world, defining one standard for data coding in an identifier in order to identify units (currently logistics ones and ultimately each retail packaging) within the supply chain in each company around the world ((Mingxiu, Chunchang & Minggen, 2012).

The organizations which normalize and standardize the RFID technology within the UHF frequency are ISO and EPCGlobal Inc. (previously called Auto-ID Center MIT) cooperating with the producers of the technology and the users who experienced the first implementations (Metro AG, Wal-Mart, TESCO and others). The global standard, which offers the possibility to read the data from the RFID identifier in any country in the world is called the EPC Gen2 standard. The EPC Gen2 is still being developed, the issue has been examined for the RFID identifiers to be universal and usable everywhere. Overcoming this barrier constitutes the crucial breakthrough in the factual globalization and unification of the UHF standard all over the world and it is the next step for the speedy dissemination of the RFID technology (Yoon, 2012).

## **5. CSR – Corporate Social Responsibility**

CSR, corporate social responsibility, is connected with the relationship between society and business. Together with the changes which globalization brought for the business, this relationship has also changed. Business has had to find a way to respond to new social expectations and to manage new tasks. CSR, despite the connotation with the word „corporate” does not only concern big companies; it also concerns small and medium ones, and such a relationship is described as responsible entrepreneurship. What is more, CSR gains a more universal dimension as so called social responsibility (SR), where sustainable development plays an important role; it concerns not only companies, but also charity and government organizations. The ISO 26000 standard is built on the basis of the formula described above (International Organization for Standardization, 2014).

Thanks to engaging in the idea of corporate social responsibility, companies contribute to the improvement of their image in the eyes of the stakeholders. They also have the chance of getting a competitive edge in the market, as nowadays for a company to develop, a favourable social climate is needed, both the internal one- among employees- and, more broadly, the external one. CSR may be perceived in two ways – internal (directly connected with the company business) and external (concerning the company environment). Socially responsible operations concern mostly human resources management and include such issues, as, for example: investing in human capital, in the health and safety of the workers, training for workers which develops their skills and abilities, clear information flow inside the company, a clear and understandable career and promotion path and others (Voegtlin & Greenwood, 2016).

The companies which want to succeed, have to take into consideration economic, ethical and ecological aspects in their operations.

The economic aspect is the broadest of the three issues described above; it includes activities influencing company results and all activities connected with minimizing the negative influence on the environment or the ones focused on solving the problems of the local community have an impact on creating a positive image of a company, trust and good reputation; moreover, they all have a positive effect on the increase in company competitiveness. Additionally, the economic aspect concerns shaping relationships with all the stakeholders and it concerns the activities connected with creating, maintaining and developing coordination with clients, suppliers, investors, non-profit organizations or local authorities (Šontaitė-Petkevičienė, 2015).

The ethical management of a company means fair, legal activities, presenting honest and reliable information about the company, treating employees equally, researching the customers' satisfaction level, developing the loyalty program for the customers; developing the anti-corruption program, which involves the undertaking to follow fair business rules and the anti-corruption undertaking for employees and business partners; setting the quality norms for products and services or the competition to become the best supplier (Goel & Ramanathan, 2014).

The social aspect of the responsible business concept is generally connected with shaping relationships with the local community, with the company being involved in solving the community's problems and with supporting the environment in its actions, such as organizing educational workshops for local communities connected with the branch of the market that the company operates in (e.g. environmental protection, healthy lifestyle, training for drivers, charity activities supporting local communities financially or organizing leisure events for local inhabitants).

The environmental aspect can be seen in the influence the company has on the natural environment: in the least oppressive way possible. The activities which a company can undertake within the environmental aspect of the CSR are the following: developing standards to reduce the amount of materials needed to create the product; using recycled material; environmentally friendly production, minimal energy use; not testing the products on animals; setting the green office rules which means the rational management of paper and energy.

The rise in the importance of environmental issues in a company's activities is also the result of the strategy of sustainable development, signed in June 2006 by the European Council as the Renewed Sustainable Development Strategy in the EU. In December 2008, the EU accepted the integrated package of actions within the energy and climate change areas which included ambitious goals to be carried out until 2020 (European Commission, 2015).

The functioning of modern companies requires constant changes within all aspects of their activities. It results from transformation processes of the economic and social environment, which influence the hierarchy of resources determining the efficiency and competitiveness of the operations of companies, and changes in customer behaviour (Kadłubek, 2015).

The basic benefits, which are attainable for companies implementing the CSR strategies, are the following: increased interest from investors, increased consumer and stakeholder loyalty, improved relationships with the local community and authorities, increased competitiveness, improved organizational culture, creating a positive image of a company among employees, acquiring and keeping the most valuable workers (Sprinkle & Maines, 2010).

## 6. Conclusion

The tendencies observed in a modern economy, such as deepening division of labour, the intensification of retailing and geographical extension of markets, structural changes and competition for customers, eventually bring changes in the way industrial, retailing and services companies, including transport, shipping and logistics ones operate. The new dimension of a client's needs makes traditional companies integrate their operations concerning product development, demand planning and order realization. The range of such operations is much broader and it integrates various functions, such as storing, stock development, purchasing policy, transport, customer service, into one, integrated supply chain management system, using sophisticated IT technologies. The aim of these activities is to increase the effectiveness and competitiveness of a company, and contribute actively to the creation of a positive image of a company.

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# THE EUROPEAN UNION'S ICT FOCUSED POLICIES AS A MEANS TO ACHIEVE COMPETITIVENESS IN THE GLOBAL ECONOMY

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**Abstract.** The ever-changing nature of the modern environment poses great challenges on both the microeconomic and macroeconomic level. Factors like globalization, internationalization and vulnerability to financial crises affect not just the wellbeing of individuals or organizations. Whole countries and regional integration groups are being affected. The European Union is no exception to this trend. Internal problems and external pressures are the reason for the preparation of long term strategies to strengthen the European Union position in the global market and to improve its competitiveness. The use of ICT as a mean to improve the EU's competitiveness and the development of the information society is of unfaltering interest to the European Union since the 1990s. It is possible to observe how the approach to the development of the information society and wider use of ICT has changed over time. Initially, EU initiatives focused mainly on proper arrangement and keeping the legal framework up to date. Subsequently, greater attention has been paid to the necessity for a more direct approach like R&D, the provision of public e-services and the development of certain skills, needed to fully use the potential offered by ICT, e-content, security and many others. The aim of this article is to analyse EU strategies and documents dealing with the development of the information society and the widespread use of ICT as a means to improve the EU's position and competitiveness in a global economy.

**Keywords:** European Union, ICT policy, ICT initiatives, information society

**JEL Classification:** O14, O19, O52

## 1. Introduction

Information and Communications Technologies (ICTs) are commonly recognized to be a major factor that influences changes observed both in private life and the economy. ICT development and popularization are thought to lead to improvement in competitiveness of both market entities and national economies. Moreover, it is frequently suggested that ICTs play a major role in the acceleration of the globalization process. Faster information flows that are possible due to commonly available broadband connections and the popularity as well as availability of mobile devices encourage changes in economic, social, cultural and political contexts (Zembylas and Vrasidas, 2005). Describing the ICT impact on the economy, it is very easy to point to some influential phenomena (e.g. e-commerce development, common access to the Internet or development of non-cash payments), though it is much more difficult to measure this impact. Attempts to point to and to measure the ICT impact on productivity,

economic growth or competitiveness are undertaken in the pertinent literature. Jalava and Pohjola (2002) showed that both production and ICT use had an influence on the improvement of US economic results in the 1990s. However, in other developed countries (the group of seven - G7) such a significant ICT impact on efficiency increase has not been observed (Jalava and Pohjola, 2002). Similar conclusions were also drawn by Cardona, Kretschmer and Strobel (2013). On the basis of the literature review, which embraced about 150 papers on the ICT impact on productivity, they demonstrated that ICT influence on productivity is not only significant and positive, but also increases in time. Unfortunately, the relationship is not linear enough so that an increase in ICT investment itself without a system-based approach would not allow for achieving significant outcomes (Cardona et. al., 2013). Vu (2011) carried out research on ICT influence on economic growth based on the example of 102 countries. The results proved that there is a significant casual link between widespread ICT use and economic growth, and these results made it possible to provide a suggestion on shaping a policy promoting ICT dissemination. The policy recommendation takes into account both the supply and demand side as well as the diversified level of widespread ICT use in individual countries (Vu, 2011). ICT development and its use have been regarded in the European Union for a long time, on the one hand, as an important factor influencing economic growth and competitiveness, and on the other, as an area in which the European Union loses in terms of the speed of development to other highly developed economies such as the United States. The European Commission striving for the better use of ICT potential in creating economic growth in the EU takes into account ICT and Internet use in its development strategies (Distaso, Lupi and Manenti, 2006). The strategies and policies prepared at Union level combine issues connected with ICT use and the development of the European Information Society.

The aim of this paper is to analyse the EU strategies and documents relating to the creation of the European Information Society and increasing use of ICT as a way to improve the position and competitiveness of the EU in the global economy. In order to achieve the set aim, the literature in the field of ICT is used and an in-depth analysis of the contents of official EU documents relating to the subject of research available in the EUR-LEX system is carried out.

## **2. Review of the EU documents on the use of ICTs**

The first EU document tackling the issue of the impact of ICT on different areas of the economy and society (with particular emphasis on reducing unemployment) is the White Paper: Growth, Competitiveness, Employment. The Challenges and Way Forward into the 21st Century (European Commission, 1993). In May 1994 a report prepared for the European Council, the so-called 'Bangemann Report', came out which took into account the observations and recommendations concerning the creation of the European Information Society. The report recommended undertaking initiatives in 10 areas (e.g. teleworking, road traffic management, electronic tendering and others) which had a stimulating impact on the use of modern solutions on both the supply and demand sides (Bangemann Group, 1994). The Green Paper 'Living and Working in the Information Society: People first' (European Commission, 1996) was a document calling for a social dialogue on potential changes in the lives of citizens of Member States. It drew attention to the changes resulting from the increased use of ICT, especially in relation to employment (new requirements of workers) and social cohesion (the need to ensure the participation of all social groups, with particular emphasis on those at risk of exclusion).

The first formal initiative relating to the building of the information society in Europe is the initiative 'eEurope – An Information Society for all' (European Commission, 1999). This

initiative takes into account previous demands for universality, cohesion and social inclusion of all stakeholders in the construction of a new type of society. Different priority areas were indicated within the initiative, e.g.: digital literacy, increasingly cheaper access to the Internet, accelerating growth in the e-commerce sector (particularly SMEs), improvement of health care and development of e-government services. The immediate successor and continuator of the actions described is the Action Plan: eEurope 2002 (European Commission, 2000), which was to serve the objective pursued in the Lisbon Strategy – making the EU the world's most dynamic knowledge-based economy by 2010. The plan highlighted three main areas of action (cheaper, faster and secure Internet; investment in human capital; increased use of the Internet by all actors), developed in 11 specific points of execution, which were to be completed by the end of 2002. Despite being a direct continuation of previous actions in the framework of building the information society, more attention was given to the better use of the opportunities offered by ICTs for the citizens of the European Union, both in terms of access to new services and the development of necessary competencies for doing so. Relatively little attention was paid to promoting the implementation of innovative solutions for enterprises. Further actions taken in order to build the European Information Society were included in the Action Plan: eEurope 2005 (European Commission, 2002). The basis of the new Action Plan were two groups of mutually supportive activities: striving for the development of secure services, applications, and content based on a widely available broadband infrastructure. The new plan highlighted the need to perform support functions, such as the identification, analysis, development and dissemination of good practice on various aspects of the functioning of the European Digital Society. The action plan also assumed a more detailed inspection; two reports were prepared on the implementation (in 2004 and 2009). Generally, the implementation in various areas was assessed as satisfactory but not without some problems, such as, e.g. a small interoperability of actions carried out, the need to pay more attention to the demand side of e-services, the risk of e-exclusion. In addition, it should be emphasized that it was only at this stage that the key importance of the ICT sector for the economic development of the European Union started to be highlighted. There was also noted the maladjustment of the Action Plan: eEurope 2005 to the needs of individual Member States with regard to different levels of ICT development and different needs with respect to policy initiatives.

The review and assessment of the enforcement of the Lisbon Strategy undertaken in the middle of the implementation period did not fare best – the likelihood of achieving the planned targets by 2010 was no longer realistic. After consulting experts, it was decided to change the purpose of the second half of the assumed period – and so, in 2005, the renewed Lisbon Strategy was announced, with a greater emphasis on growth and employment (Barroso and Verheugen, 2005). The document which is part of the renewed Lisbon Strategy corresponding to the ICT field is the strategy ‘i2010 - A European Information Society for Growth and Employment’ (European Commission, 2005). In this document, three main objectives were assumed: ‘a single European Information Space (...); innovation and investment in research (...); inclusion, better public services and quality of life’ (European Commission, 2005, p. 2). In 2009 a report summarizing the achievements of the i2010 strategy in the years 2005-2009 was published (European Commission, 2009). The report positively assessed the actions undertaken in the field of ICT (this assessment is consistent with earlier reports from 2007 and 2008), especially because of their impact on the modernization of Europe both from an economic and social point of view. Despite the positive tone of the report, it was pointed out that the resulting competitive advantage may be lost and that is why a new digital agenda should be developed, which will allow Europe to meet the emerging challenges (European Commission, 2009).

Europe 2020 – a strategy for smart, sustainable and inclusive growth is the current economic programme which is the successor to the Lisbon Strategy and sets out the objectives that Europe wants to achieve by 2020. The European Commission has prepared seven flagship initiatives at EU level which are basic instruments for attaining the objectives of the strategy apart from the National Reform Programmes. An initiative dedicated to the use of ICT to enhance the growth of economic and social development as well as the creation of new jobs is ‘A Digital Agenda for Europe’ (European Commission, 2010). The objective of the Digital Agenda ‘is to chart a course to maximize the social and economic potential of ICT, most notably the Internet, a vital medium of economic and societal activity: for doing business, working, playing, communicating and expressing ourselves freely’ (European Commission, 2010, p. 3). The agenda set eight main areas for action: ‘a vibrant digital single market, interoperability and standards, trust and security, fast and ultra fast internet access, research and innovation, enhancing digital literacy, skills and inclusion, ICT-enabled benefits for EU society, international aspects of the Digital Agenda’ (European Commission, 2010, p. 2). Taking into account the long time horizon adopted in the Lisbon Strategy, this time the Commission has put even greater emphasis on monitoring the implementation of individual goals. The annual reports serve this purpose as part of the Digital Agenda Scoreboard Index and the Digital Economy and Society. Summing up the review of EU documents devoted to the issues of ICTs and the European Information Society, it can be seen that the established areas of activity consistently appear in subsequent policies and action plans. Table 1 summarizes the areas in which the implementation of actions was assumed in various documents relating to ICTs and the information society.

Table 1: Areas of action assumed in the various EU documents in the field of ICT

Areas		eEurope (1999)	eEurope 2002	eEurope 2005	i2010	Digital Agenda
Legal regulations concerning radio frequency		yes	yes	yes	no	no
Cheap access to Internet		yes	yes	yes	yes	yes
E-commerce		yes	yes	yes	yes	yes
Internet for science		yes	yes	yes	no	no
Youth		yes	yes	no	no	no
E-services	E-administration	yes	yes	yes	yes	yes
	E-health	yes	yes	yes	yes	yes
	Public transport	yes	yes	no	no	no
Intelligent Transportation Systems		yes	yes	yes	yes	yes
SME financing		yes	yes	yes	yes	yes
ICT promotion for SME		no	yes	yes	yes	yes
Needs of persons with disabilities		yes	yes	no	yes	yes
Security		no	yes	yes	yes	yes
Jobs and qualifications		no	yes	yes	yes	yes
New contents		no	yes	yes	yes	yes
Research and development		no	no	no	yes	yes
Encouraging private investment in ICT		no	no	no	yes	yes
Digital Single Market		no	no	no	no	yes
ICT for the environment		no	no	no	no	yes
International aspects		no	no	no	no	yes

Source: own elaboration

As can be seen from the information presented in Table 1, the areas of action planned in the various EU documents in the field of ICT and the information society differed. Some of the areas of action are continued throughout all of the documents examined, some disappear from



the agenda and are replaced by new ones, emerging in their place. Moreover, the weighting of individual priorities/areas changes, for example, e-administration or on-line government may be the overriding action area or falling within the scope of other areas, as well as taking into account the needs of disabled persons or public transport. Changes also occur in the case of the assumed targets in different ranges, e.g. change of emphasis from cheap and widespread access to the Internet to the availability of broadband and mobile Internet. Some areas disappear from the agenda due to successful implementation – e.g. the area of the Internet for science assumed to connect higher education institutions and research units to the broadband and backbone network, which has been achieved. Certain areas appear only in subsequent documents (e.g. a single digital market or ICT for the environment). This may be due both to a lack of prior need to take into account this area or lack of technical capabilities to take it into account and carry out effective action. However, it should be noted that some areas, especially those having great importance for the overall development and strategic goals of the European Union (economic growth and competitiveness, improvement of the quality of life), invariably remain on the agenda. These include: cheap/general access to the Internet, e-economy, e-government, intelligent transportation, the needs of disabled people and to a lesser extent, work and qualifications, security, new content and promotion of ICT use by SMEs. Of course, across the various areas, qualitative progress has been made and actions assumed in each (consecutive) document are different, e.g. in electronic economy actions within individual documents assumed, for example, overview, preparation and harmonization of legal standards, setting standards and ensuring interoperability of clearing of electronic payments (SEPA determination). It is difficult to predict what further intended actions will look like in the area of ICT and information society services after the expiry of the Europe 2020 Strategy.

### 3. Conclusion

In conclusion of the analysis of EU documents and strategies on creating the European Information Society and the use of ICT carried out in the paper, attention must be paid to several issues. Firstly, the nature of the documents and the assumed actions within their framework have clearly been changing with the passage of time as well as the progress of the development of the information society and the use of ICT. The transition is clearly visible from typically regulating and ordering actions to actions stimulating specific, desired behaviour, e.g. by setting common standards applicable throughout the EU in order to facilitate the functioning of both citizens and economic entities. Secondly, attention needs to be paid to maintaining consistency in the agenda of key objectives for achieving the overall EU development areas of action, such as: inclusion or improvement of EU citizens' qualifications. Thirdly, in connection with the inadequate implementation of the Lisbon Strategy and its related documents, the subsequent documents assume a greater measurability of the objectives pursued and more systematic control (currently in the form of Digital Scoreboard and the Digital Economy & Society Index).

However, some problems can be revealed with regard to the implementation of general provisions assumed in EU documents. Unfortunately, the EU failed to achieve the position of global leadership in ICT, as demonstrated by, *inter alia*, studies designed to compare and characterize the evolution of the main world economies in terms of ICT, distinguishing six major players in this field. Entities for the study were selected on the basis of two categories: the size of the economy (EU, US and China) and specialisation in ICT (Taiwan, Korea and Japan). Despite the size of the EU economy, actions taken and its specialisation in ICT services, the US remains the leader in this industry, and the main role model for the EU in the field of

ICT (Desruelle and Stančík, 2014). Moreover, studies on the effectiveness of measures aimed at creating NGA infrastructure (Next Generation Access) suggest that investments and initiatives governed by the EU and national regulations are less efficient than the policy of broadband market deregulation implemented in the States in 2005 (Briglauer, Ecker, and Gugler, 2013). Nonetheless, an assessment of future economic benefits from the development of broadband infrastructure suggests that in the case of the EU, participation of Member States in subsidizing investment in broadband infrastructure is necessary, due to insufficient interest from the private sector (Gruber, Hätönen and Koutroumpis, 2014).

The problem also remains, as previously suggested, that the use of ICT is notoriously different across the Member States. It is widely believed that the greatest differences exist between the countries called EU15 and those accepted after 2004, however, both Digital Scoreboard indicators and studies carried out by Cruz-Jesus, Oliveira and Bacao (2012) show that the situation is more complicated. Cruz-Jesus et al. (2012) have identified two independent areas describing the diversity among the Member States in the use of ICTs: infrastructure and adoption by population as well as e-business and Internet access cost. Based on these two dimensions the following five groups of countries were distinguished: digital laggards (Bulgaria and Romania), individual-side focused (Estonia, France, Hungary, Latvia and Slovenia), business-side and low access costs focused (Cyprus, the Czech Republic, Greece and Lithuania), digital followers (Austria, Belgium, Germany, Ireland, Malta, Poland, Portugal, Slovakia, Spain and the United Kingdom), digital leaders (Denmark, Finland, Luxembourg, the Netherlands and Sweden) (Cruz-Jesus and al., 2012). The analysis mentioned does not include Croatia, which only joined the EU in 2013. Additionally, one cannot forget that apart from the differences at the level of the Member States, significant differences can be observed within regions of the Member States (and Vicente López, 2011) which further hinder the coherent implementation of the objectives. The absence of balance in regional digital programmes observed by Reggi and Scicchitano (2014) is also a worrying phenomenon. Funds for digitization from the Structural Funds 2007-2013 were often invested in those areas in which the region already had an advantage and not those lagging behind (Reggi and Scicchitano, 2014).

It is difficult to assess the effectiveness of the programmes proposed by the EU for building the European Information Society and the use of ICT. This is both due to the fact that actions are implemented at national and regional level, as well as the large diversity among the Member States and the needs reported by them. However, it should be noted that despite these problems, the EU is considered to be one of the key players in the field of ICT.

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# IMPACT OF GLOBALIZATION TO THE SPECIFICS OF BIOLOGICAL ASSETS MEASUREMENT IN SR IN THE CONTEXT OF LEGAL ARRANGEMENTS OF SR AND INTERNATIONAL LEGAL ARRANGEMENTS

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**Abstract.** Agriculture and its production and non-production tasks are characterized by the majority of specifics. The accounting shall disclose the particular character of agricultural activity which mainly affects the possible variants of measurement and classification of biological assets as well as the calculation of profit or loss. In the conditions of global economy the correct measurement of company asset items is considered to be the most difficult issue in the accounting. The accounting regulation is not sufficient in the national level as regards the development and globalization of world economy, free movement of people, goods and internationalization of capital funds. The effect is presented in the orientation of accounting development directed to the convergence of accounting systems in the transnational scale. The most essential legal norm in the Slovak Republic focusing on the measurement is the Act No. 431/2002 Coll. on Accounting with the latest amendments. The Slovak Republic with its entry to the European Union has adopted and implemented not only the Common Agricultural Policy of the European Union but as well the legal norms related to the accounting which is fully in accordance with the directives of the European Union and sequentially other articles of IFRS have been adopted. Biological assets which are used in agricultural activities are regulated in the individual accounting standard IAS 41 Agriculture. The reason for the selection of biological assets from the influence of other IFRS (e. g. from IAS 16, IAS 2) is their specifics which require the application of other accounting methods in the measurement area.

**Keywords:** accounting, the biological asset, International Accounting Standard IAS 41 Agriculture, measurement, recognition

**JEL Classification:** Q14, M21, M40, M41

## 1. Introduction

For decades the world economy breaks down the national borders – has increasingly the global character. Several methods are used in order to determine the level of country globalization. One group is created by the manners focused on the measurement of globalization by means of the volume measurement of realized businesses. The second group of methods is

trying to complexly assess all the items of total globalization, as social, economic and as well as the political side. (Hajduchová & Giertliová, 2015)

The global market and consolidating position of Europe on such market place high demands on the level of knowledge and its transfer into new, progressive concepts, methods and tools of the financial management. (Bartošová, at al., 2015)

Globalisation has contributed positively to an ongoing process of seeking, exploring, evaluating and selecting the ways of new sources of financing by encouraging and attracting additional international financing. (Saxunová, 2015)

The globalization of economy is presented as well in the effort to harmonize the worldwide accounting with the aim to create the unified rules for the disclosure of financial statements, in order to secure the information disclosed in the parts of financial statements to be transparent and comparable in the same types of accounting units. (Šlosárová, at al., 2016)

There are different groups of external users of business information, whose needs are more often in mutual contradiction. As a result, data about the business transactions, events and conditions need to be presented in the form of general purpose financial statements. (Tumpach, at al., 2014)

The financial statements should give a true and fair view of the assets, financial position of an entity. (Juhászová & Domaracka, 2015)

The measurement process is considered to be as one of the most questionable problems of accounting world widely and further it presents the most crucial and complex part of accounting. The explanatory ability of all economic information recorded in the accounting and disclosed in the financial statement depends on the selected manner of measurement.

The article presents the theoretical scale of biological assets measurement which represents the essential item of all assets in the companies of agricultural primary production. Mainly the professional literature and current legal arrangements of accounting in the Slovak Republic (the Act on Accounting and accounting procedures) and International Accounting Standard IAS 41 Agriculture represent the sources for the article processing. Inductive – deductive and analytical – synthetic logical scientific methods have been taken into accounting while the individual manners of consideration and explanation have been conducted.

## **2. Measurement of biological assets in accordance with the national legal arrangement in the Slovak Republic**

In all the company decisions the management derives from and takes into account the information provided by the accounting whether it is the information existed from the past – financial accounting or predicting the future – managerial accounting. (Kubaščíková & Pakšiová, 2014)

Accounting business focuses on the values of economic activities of enterprise and the completeness of records. (Jacková, 2015)

Data resulting from the accounting are relevant when they secure the user with the possibility to increase the level of reaching the goal for which a given user utilizes them. (Tumpach, at al., 2014)

Accounting as a system of information, recording about economical aspect of accounting entity in monetary unit, provides information about identified economical facts for users in

financial statements. Identification, quantification and presentation of facts, which are subject of accounting in monetary unit is ensured by process of measurement. Measurement in accounting has an irreplaceable importance for decision making of information users. Therefore it is necessary for users to consider usefulness of presented information by decision making considering the relation to the accounting entity and the pursued objective of users. (Šlosárová & Bednárová, 2015)

Agriculture has a special status in the national economy due to its social function and the conditions in which the production process is performed. (Váryová, at al., 2015)

Specific conditions of entrepreneurship in agricultural primary production in comparison with other entrepreneurs have a concrete effect in their assets. They are mostly presented by living organisms (animals and crops), which are the subject, means as well as the result of agricultural activity. Land has a substantial meaning in agricultural primary production companies as well.

Nowadays, cooperatives and companies (Joint Stock Company (JSC.), Limited Liability Company (Ltd.)) are the main legal forms when acreage is considered. (Tóth, at al., 2015)

The accounting is obliged to capture the unique character of agricultural activity (biological nature of production process) which has mainly the influence on all variants of measurement and classification of biological assets as well as the calculation of profit or loss. Classification and measurement of animals and crops used in agricultural produce derives from the benefits which these assets bring. Biological assets which are specific for agricultural production are presented in Table 1.

Table 1: Classification of biological assets

Property, plant and equipment	Animal production basic herd, draught animals
	Crop production perennial crops
Current assets	Animal production young animals, animals for fattening, flocks of hens, ducks, turkeys, guinea fowl, fish, hives, fur animals, dogs
	Crop production work in progress, finished goods

Source: Dvořáková, D. (2012)

The measurement profoundly presents the difficult process as shown by the practice, it is the bearing accounting problem. In the Slovak Republic the accounting entities are obliged to accept the highest legal norm the Act No. 431/2002 Coll. on Accounting with the latest amendments as well as the Measurement of the Ministry of Finance of the Slovak Republic of 16 December 2002 No. 23054/2002-92 on stipulation of details of accounting procedures and framework chart of accounts for entrepreneurs keeping double-entry accounting with the latest amendments (hereinafter referred to as „accounting procedures“).

In May 2013 the European Union accepted the Directive of the European Parliament and the Council 2013/34/EU on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC (replaced the Fourth and Seventh Directive) which has a direct impact to the Act

on Accounting in the Slovak Republic. Pursuant to the before mentioned Directive the articles in the fifth part of the Act on Accounting have been amended (measurement manners which have been effective since 1 January 2016). The changes in the measurement area have effected mainly the definitions and application of fair value. The measurement parameter replacement cost terminated/disappeared.

The Act on Accounting stipulates to accounting entities to measure/value assets and liabilities as at the measurement day which might be e. g the accounting transaction date. As regard the assets of biological nature the accounting transaction date is the date of acquiring the assets (by a purchase, as a gift, finding out as raised animals, increases in weight, increases in growth (breeding increases)), decreases in assets (sale, death, transfer of animals...), harvest or acquiring of agricultural produce from animals. As at the accounting transaction date the accounting entity shall measure by the following valuation parameters depending on the manner of acquiring the biological assets:

- acquisition cost,
- conversion cost,
- fair value.

Perennial crops, basic herd, draught animals belong to the substantial items of property, plant and equipment in an agricultural company.

Accounting procedures do not define the perennial crops with fruit-bearing period longer than three years. They refer to the Act No. 162/1995 Coll. Land Registry and on Registration of Ownership Title and Other Rights to Real Estate (the Land Book Registry Act) as amended and the regulation No. 461/2009 Coll. implementing the Land Book Registry Act. Perennial crops founded and grown by own activities are measured at conversion cost. Conversion cost consists of costs related to foundation and cultivation of perennial crops mainly project and survey works, land preparation for planting, the price of seedlings, their planting, treatment, fertilization, irrigation, shaping etc. until the fruit-bearing age, i.e. the beginning of full bearing.

As a livestock the adult breed and draught animals for economic use are accounted for regardless the acquisition cost. All purchased animals are measured in acquisition cost. Costs related to acquisition comprise of e.g. veterinary control cost, animal transport to the housing place (external, internal), duty, insurance, commissions, etc. The measurement of adult animals acquired from the own breeding transferred from inventory to property, plant and equipment is increased for costs related to their transfer. As regards free of charge animal acquisition of basic herd, draught animals or in case of newly identified animals in stocktaking/inventory and not yet recorded in the accounting they are measured in fair value.

Except for agricultural land, forest and other land which are not owned or administered by an accounting entity, and are the state assets, are accounted for in the property, plant and equipment. Pursuant to the Act No. 220/2004 Coll. on the conservation and use of agricultural land the agricultural land is the land which is in the evidence of Land Book Registry as arable land, hop-gardens, vineyards, orchards, gardens and perennial crops acquired by a purchase and is measured in acquisition cost. The acquisition cost of purchased land planted by trees or bushes which are not perennial crops is the price including the planting.

Biological assets are defined in the current assets of an accounting entity in the form of work in progress, finished goods and animals.

Pursuant the accounting procedures an accounting entity shall select the measurement of work in progress in conversion cost:



- real conversion cost used for work in progress,
- intercompany prices set by operative (planned) calculation of conversion cost,
- combination of real conversion cost e.g. real direct material and personnel cost and conversion cost pursuant to operative calculations, e.g. outputs of own transport and mechanization means measured according to intercompany price list.

When recording the work in progress of crop production in agricultural companies, it is indispensable to take into account its specifics. Harvest for the majority of agricultural crops is in the current calendar year (if an accounting entity accounts for in the accounting period – calendar year). However there are several crops for which the harvest terminates in the future calendar year. Therefore accounting entities with agricultural activities separately monitor costs related to:

- crops harvested in the current (calendar) year,
- crops harvested in the future (calendar) year, respectively future years.

Costs for harvested crops include costs for catch crops used for green manure or biological soil recovery.

In case of agricultural companies these present the produced crop products after the harvest (cereals, root crops, oil crops, industrial crops, vegetables, fruits, etc.) and as well as the obtained agricultural produce from animals. They are measured in conversion cost pursuant to the Act on Accounting while there shall not be an unconditional continuity of work in progress and finished goods cost structure. Accounting entities create the intercompany price list of products for the product measurement, in which they set the prices whether on the level of real conversion costs or on the level of assumed costs pursuant to the operative calculations.

Animals in inventory mainly consist of young animals, animals for fattening, flocks of hens, ducks, turkeys, guinea fowl, fish, hives, fur animals, dogs. Animals acquired by a purchase are measured in acquisition cost. Animals of own breeding, raised animals, increases in weight; increases in growth (breeding increases) are measured in conversion cost. For a correct determination of raised animal amount it is crucial to account for live-born animals/young soon after their birth and at weaning the corresponding price difference between born and weaning animal is additionally accounted for, except for calves that are considered to be weaned immediately after birth. Born calves are measured in conversion cost for 1 kg of born calf weight. Born piglets are measured in conversion cost for 1 kg of born piglet weight. In practice generally the birth weight is determined by the number of born piglets and average weight, e.g. 1 pc = 1 kg. When weaning the whole birth is weighted; the difference between the weight recorded at birth and real weight determined at weaning is accounted for in corresponding conversion cost. The weight of piglets which stay non-weaned at the end of year is determined by a qualified estimate if their real weight is not determined. Hatched poultry is valued in the price of one-day poultry measured in conversion cost. New hives are measured in conversion cost of one swarm. Increases in weight of animals are measured in real conversion cost or in intercompany prices set on the base of operative (planned) calculations of own costs. Increases in growth of animals are measured in conversion cost of one breeding day of a particular breeding group. The price of one breeding day is determined by an accounting entity as in the price determination for 1 kg of weight increase.

Conversion cost for increases in weight and increases in growth of animals present direct costs for a particular animal breeding, e.g. the consumption of food, litter, labour costs, feeding and handling of animals, including statutory health and social insurance, depreciation of

livestock technology and buildings, consumption of energy, water, breeding and veterinary services and manufacturing overhead costs relating to the relevant animal breeding. The portion of overhead is included in the calculation of own costs in case the animals reach productive or reproductive maturity at the age that exceeds the length of one year.

### **3. Measurement of biological assets in the context of International Accounting Standards**

The Slovak Republic after its entry in the European Union (EU) has integrated into countries for which the accounting area is adjusted by not only the national arrangements but as well as the vast transnational arrangements. It has adopted and implemented not only the Common Agricultural Policy of the European Union but the legal norms for the accounting area too, which are fully pursuant to the Directives of the European Union and simultaneously the regulations IFRS have been adopted to them.

The issue of accounting presentation of process and results of agricultural activity is adjusted in the separate International Accounting Standard IAS 41 Agriculture. The subject of standard adjustment is:

- biological asset,
- agricultural produce at the point of harvest, and
- government grants.

In comparison with the effective legal arrangement in the Slovak Republic the biological asset is defined in the before mentioned standard as those which are not applied to:

- land related to agricultural activity,
- intangible assets related to agricultural activity.

A biological asset is a living animal or plant. Pursuant the International Accounting Standard IAS 41 Agriculture an entity is encouraged to provide a quantified description of each group of biological assets, distinguishing between consumable and bearer biological assets or between mature and immature biological assets, as appropriate.

The International Accounting Standard IAS 41 Agriculture prescribes that the biological assets are measured at fair value less costs to sell (commissions to brokers and dealers, fees by regulatory authorities and commodity exchanges, transfer taxes and duties) at initial recognition and always at the balance sheet date. Fair value derives from its current placement and state. Fair value of livestock in a farm is the price of livestock in the relevant market less the costs related to transport and other costs related to the livestock bringing to a market. If the fair value of biological asset cannot be measured reliably at initial recognition, an asset shall be measured at its cost less any accumulated depreciation and any accumulated impairment losses. Once the fair value of such a biological asset becomes reliably measurable, an entity shall measure it at its fair value less costs to sell. Changes of fair value less costs to sell are recognized in profit or loss.

Agricultural produce harvested from biological assets of an accounting entity shall be measured at its fair value less cost to sell at the point of harvest. After harvest the agricultural produce is treated as inventory, the same is applied for the harvested agricultural produce requiring transformation (IAS 2 Inventories).

An accounting entity shall simplify the determination of fair value of biological asset or agricultural produce by its grouping in accordance with the substantial features e.g. according to age or quality. Pursuant the regulations of International Accounting Standard an entity selects the features corresponding to the features in the market as the base for pricing.

If an active market exists for a biological asset or agricultural produce, listed price in this market is a suitable base for determination of asset fair value. Prices or values of biological assets in their current status determined by a market shall not be available under the certain circumstances. In such a case an accounting entity uses a present value of expected cash flows from an asset discounted by a current interest rate before taxes in a market.

Land is not a biological asset in term of the Standard for biological assets, even it is used for produce of such an asset. This land is recognized as property, plant and equipment. Land shall be measured in acquisition costs pursuant IAS 16 Property, Plant and Equipment, while trees as biological assets shall be measured at fair value less costs to sell. Land acquired for further sell or its capital appreciation shall be measured at acquisition costs pursuant IAS 2 Inventories. In case a land is determined for rent or it is expected to appreciate, IAS 40 Investment Property is applied.

#### **4. Conclusion**

The management of accounting on the national level is not sufficient in conditions of spreading trade globalization and capital funds internationalization. The effort to converge the accounting systems – the harmonization of accounting is at the forefront. One of the aspects by means which the harmonization is presented, is the unification of principles, methods and techniques of measurement of assets, liabilities, equity, costs, revenues, profit and its items.

Specific conditions of entrepreneurship in the agricultural primary production in comparison with other entrepreneurs have a concrete impact to assets and asset measurement. An accounting entity – agricultural primary production company shall accept the Act on Accounting and accounting procedures while measuring biological assets. Measurement parameter might be acquisition cost, conversion cost and fair value always in relation to a concrete asset type.

Adoption of the Directive of the European Parliament and the Council 2013/34/EU from 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings (replaced the Fourth and Seventh Directive) is considered to be the crucial step within the accounting harmonization for member state of the EU. The before mentioned directive is very general in relation to the particular manner of asset measurement and essentially the selection of individual measurement parameters as well as the possibility of cost activation for concrete assets is left on individual member state.

International Accounting Standard IAS 41 Agriculture stipulates that the biological assets are measured at fair value less costs to sell at initial recognition and always at the balance sheet date. The base for the determination of fair value of a given asset is a listed price in the active market with a biological asset or agricultural produce, only in case the market of a given asset exists. The measurement of biological assets in fair value brings advantages but as well as a lot of disadvantages for an individual accounting entity.

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