Journal of Management and Business: Research and Practice

Časopis pre manažment a podnikanie: Výskum a prax

O B S A H

C O N T E N T S

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MERGER AND ACQUSITION ACTIVITY IN EMERGING EUROPE BETWEEN 2009 – 2012

FÚZIE A AKVIZÍCIE V ROZVÍJAJÚCICH SA EURÓPSKYCH EKONOMIKÁCH V OBDOBÍ ROKOV 2009 - 2012

Abstract: *At the present time, characteristic by a considerable volatility of economic activity, mergers and acquisitions represent one of preferred innovation instruments of companies market value growth, corporate changes and options of strenghtening of their competitive advantages in a long-time horizon. The article provides theoretical framework for motives of M&A, highlights M&A activity in Emerging European countries between 2009 - 2012 and presents deal activity predictions for 2013 and next five-year period.*
Key words: *Merger, Acquisition, Deal, Emerging Europe.*

Kľúčové slová: *Fúzia, akvizícia, transakcia, región Emerging Europe*

JEL: G34, F14

Introduction

2012 was, if nothing else, a year of pronounced economic uncertainty for many countries around the world, and for most of them, this trend will linger into 2013. In Europe, a fiscal crisis continues to kindle doubt about the survival of the euro, creating uncertainty that is casting a shadow on real economic performance in 2013. The United States may have already entered recessionary territory. Likewise, China, India, and Japan are treading uncertain economic waters and scrambling to establish or maintain economic growth.

Mergers and acquisitions (M&A) represent, at the present time, characteristic by a considerable volatility of economic activity, one of preferred innovation instruments of companies market value growth, corporate changes and options of strenghtening of their competitive advantages in a long-time horizon. A known adage: „If you can't beat them, join them", a seemingly trivial saying is reflected in many sophisticated entrepreneurial strategies and conceptions at competitive markets. Also an admissibility of their crossborder implementation incorporated in a community law of the European union has opened a quite new perspectives and options in relation to these operations. In the context of freedom of settlement within the internal market of the Union, can be M&A also perceived as a specific form of a freedom of movement of persons and capital and specific manner of a corporate

mobility.[1] M&A also can have a significant impact on the development of the structure of an industry, and on its capability to innovate. The European Commission and its directorate-generalfor competition, acknowledges this in theory, at least since the publication of its 2004 guidelines on the assessment of horizontal mergers.

The article provides theoretical framework for motives of M&A, highlights M&A activity in Emerging European countries[2] between 2009 -2012 and presents deal activity predictions for 2013 and next five-year period. The data is extracted from recognized databases including CMS and DealWatch, The Mergermarket Group and Deloitte.

This article was compiled as a part of the project VEGA No. 1/0142/12 „Research of development trends and key determinants of cross - border mergers and acquisitions in common European area".

1. Theoretical base of M&A problems

M&A problems and connected formulation and analysis of their incentives and strategies is inherent component part of several fields of economic theory, namely of „Theory of Industrial Organization", „Game Theory" and „Corporate Governance". Likewise in other fields of economy, a clearly and homogeneously structured system of basic concepts is also not available here yet.

M&A present a summary designation for transactions connected to a purchase and sale of companies. According to Mařík, M. (1997), it include purchase and sale of a company to other companies, a merger, a purchase of company from the part of management (Management Buy Out), establishing of common companies (Joint Ventures), cooperations and strategic alliances.

In addition, the model developed by Nakamura, H. R. (2005) is employed to provide clear understanding about the definition of M&A in a narrow concept, as shown in Figure 1.

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[1] Judgment of the European Court of Justice of 13 December 2005 - case C-411/03 - SEVIC Systems AG - „Freedom of settlement – Articles 43 EC and 48 EC – Crossborder mergers – Refusal to register in an intrastate commercial register - Compatibility"

[2] Emerging Europe geographic area, understood as the dominant country of operations of the deal target, covers: Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia and Ukraine.

Figure 1: Scheme of terms that are often included in concept of M&A

Mergers
- Absorption Merger
- Equal Merger (1:1 type mergers)

M&A (NARROW SENSE)

Acquisitions
- Stock Acquisition
- Capital injection/Asset purchase, Business transfers

M&A (BROAD SENSE)

Asset cooperation
- Minority cross – ownership
- Founding of holding companies

Business cooperation
- Franchising
- Management outsourcing
- Joint Venture
- Cooperation in manufacturing, sales or R&D

Source: Nakamura, H. R., 2005, p.18

A merger means an agreement of two or more independent companies on their integration into one company. It may be a *domestic merger* that relates to companies with a business activity within one state or a *crossborder merger* that is a merger of the companies making their business in various states.

An acquisition means an action in which a company acquires an ownership and managerial control over another company. There is an asset and capital acquisition.

An asset acquisition means that a company acquires the assets of another company, *a capital acquisition* means that a company acquires a control over the voting rights of another company. Both companies continue in their operation after the acquisition, legal relations remain unchanged, none of them will cease to exist. However, on the other part, a partial or full loss of economic independency of a company occurs.

Capital acquisition can be further classified by several aspects. In most cases, it is governed by the fact how the transactions are included in the companies' owned capital. Thus it is possible to distinguish *capital acquisitions on a primary market* (where a participation of a partner or shareholder in a company arises in the form of an accession to a company; an increase in registered capital occurs) and *capital acquisitions on a secondary market* (a pruchase or sale of an ownership interest will only result in a change of an owner not in a change of owned capital structure).

According to the form of implementation, the capital acquisitions can be either friendly or hostile. Friendly acquisitions (takeover bid) occur when the acquiring company acts in agreement with the management of the other company. Hostile acquisitions means an absence of an interest of a party to carry out the acquisition process.

2. Theoretical Framework for motives of M&A

The literature on M&A has placed a significant amount of efforts on exploring the motives of firms engaging in M&A transactions. A detailed familiarization with them would considerably exceed the extent of this paper. However, it is possible to summarize that most common arguments by which the companies substantiate their implementation include an obtaining a synergy effects. These effects can occur due to many causes. In M&A transactions synergy mechanisms generate value in different activities of the mergering firms. On the other hand, it is needed to remark that it is disputatious to anticipate the given synergies. The implementation of the integration of two companies (M&A) might not generate it at all. There is a whole line of companies, where not only they did not generate any synergy but also paradoxically, their value has decreased.

Theoretically, M&A are possible to be analyzed from an array of theories, each highlighting its special aspect of the phenomenon.

The Efficiency Theory – the ultimate aim of M&A is to produce synergy. Following a merger, companies should have the capability to improve overall efficiency, which was not possible before merger. In effect, this means that costs are reduced when both companies use, for example, the same production facilities. Synergies can be obtained in three ways:

- *Financial synergies* – can steam from three sources: 1. Taxation synergy harvested through transfer pricing between potentially different tax regimes, complementary usage of deffered tax etc. 2. Better match between financial resources and investment projects, making it possible to exploit positive net present value projects. 3. Increased debt capacity and lower cost of capital through a merge between two companies with uncorrelated income.
- *Operating synergies* – arising as a rule from the fusion of individual functional areas within the new company, such as the merging of two production facilities. The transfer of knowledge is another operating synergy in that the know-how is increased as different corporate divisions combine their competencies and abilities. Innovation strengh may also increase as company experts are brought together at one location.
- *Management synergies* – arising out the management of the company initiating the purchase having competencies which can contribute to the efficient organisation of processes in the target company or vice versa.

The Monopoly Theory – M&A are realized in order to achieve a monopoly rent through increased market power. The monopoly theory is an explanation for horizontal and conglomerate M&A. Market power can be accomplished by:

- *Cross-subsidisation of acquired business lines* – in the cross-subsidisaion of single business lines, profits originating from the strong position of a product in a particular market can be utilised to finance entry into other markets.
- *Restriction of competition in markets where a company becomes a participant through acquisitions*. A simultaneous restriction of competition in several markets can result from introducing two competing copmanies in the most important market of the other company through takeover.
- *Implementation or augmentation of entry barriers in specific markets*. Constructing market entry barriers is aiming at deterring potential competitors from entering the respective market, and this can be accomplished through acquisitions in adjacent markets.

The Raider Theory - A raider is a person who causes wealth transfers from the stockholders of the companies he bids for in the form of greenmail or excessive compensation after a successful takeover.

The Valuation Theory - M&A take place primarily because their corporate values or business values are being speculated on. Investors hope to purchase companies whose products are undervalued in the market, in order to increase their values and to add value to their targets. The idea of increasing the corporate value is directly linked to shareholder value addition. Shareholder value describes the value of acompany from its shareholder's point of view, who uses it as the benchmark in judging the efficiency of a company. From this perspective, the decision to invest in or acquire other companies is a pure investment decision which must be reflected in the increase in shareholder value.

The Process Theory – mergers are the results of complex decisionmaking processes. The extent to which these processes can be planned and foreseen by the decision-makers is limited and that is way the stakeholders need to strike a balance between different interests, which holds weight throughout the process. In this context, the following aspects are important:
- The limited ability of individuals for the reception and processing of information, which means that there is restricted information processing capacity of individuals and therefore the search for information and alternative decisions is insufficient, and that judgments can be made only on the basis of incomplete information.
- The prevalence of particular business routines in organisation, which means that members of an organisation tend to approach new problems with existing strategy.
- The significance of political relationships and their effect on the processes and the results of decision-making in organisations.
- Limited information processing capacity and political relationships within an organisation. The existing political conditions within an organisation can mean that decisions are frequently influenced by one person who behaves

according to his self interest or by pressure groups who behave according to their groups' interests.

The Empire Building Theory – mergers serve the personal interests of management which make efforts to influence the company they purchase and win over with the increased profit generation for the owners or the capital providers. Conflicts between the owners and the management of a company do not, however, always stand behind the various aims of turnover and profit maximisation. The empire building theory emphasises that the managements, with excessively optimistic expectations and interests, generally tend to pay a higher price for a company acquisition.

The Disturbance Theory - M&A waves are caused by economic disturbances: Economic disturbances cause changes in individual expectations and increase the general level of uncertainty, thereby changing the ordering of individual expectations. Previous non-owners of assets now place a higher value on these assets than their owners and vice versa. The result is an M&A wave [12, pp. 2 – 5; 8].

3. M&A activities in Emerging European countries between 2009 - 2012
Figure 1 summarizes a trend of number and total amount of M&A transactions carried out from 2009 to 2012 (deals above EUR 1 million) in Emerging European countries. Despite the fact that it is relatively short period, it is possible to state, that the trend of number of carried out transactions during the analyzed period was considerably fluctuating (a year-to-year comparison of 2009 and 2010 shows increase of 13 %, year-to-year comparison of 2010 and 2011 shows increase of 11 % and decrease of 40 % for 2011 and 2012 year-to-year comparison). A similar fluctuating development was also in total values of transactions, namely, a significant year-to-year increase by almost twice in 2009 and 2010, almost the same amount of transactions in 2010 and 2011 (at the level of EUR 150 bn) and 2011 and 2012 year-to-year decrease of 20 %.
2012 was an unpredictable and turbulent year - a feared Greek exit from the Eurozone, widespread economic turmoil and threats to the single currency's survival - all scenarios looked very possible. The uncertain situation was reflected in the number of deals, which dropped to its lowest level since 2009.
M&A activity in the region was hampered by the drawn-out debt crisis in the Eurozone, the region's main trading partner, political turmoil in some states and tough austerity plans introduced by local governments. Rosneft's acquisition of TNK-BP, Russia's largest-ever takeover deal, accounted for more than a third of the overall value.

Figure 2: Deals by value and volume in Emerging Europe countries (2009 -2012)
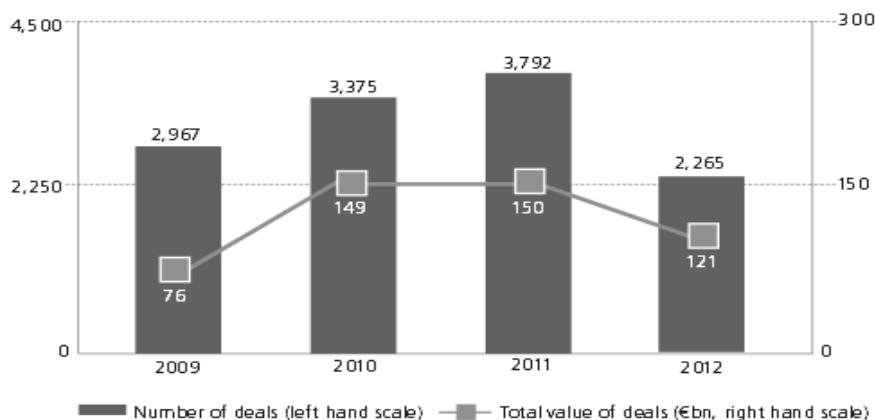
Source: CMS and DealWatch, 2013

The most active sector by deal numbers in 2012 was manufacturing with 395 deals representing nearly 18 % of all transactions. Mining (including Oil & Gas) was the leading sector in terms of deal value, with over EUR 58 bn accounting for nearly half of the overall market. M&A in Russia accounted for 39 % of all CEE deals and 82 % of the total deal value in 2012. Poland came second with a 15 % share in deal number and a 7 % share in total deal value. Russia's intensifying economic slowdown and the central bank's measures to clamp down on inflation and volatile markets hurt dealmaking in the country in 2012 and forced many companies to put off plans to list or make acquisitions.

Table 1 summarizes top ten deals in Emerging Europe countries from 2010 to 2012. It is obvious from the table that Russian M&A market dominates the ranking for given period. The largest deal in Emerging Europe in 2012 was Rosneft's acquisition of Anglo-Russian oil firm TNK-BP, which it bought from BP and a consortium of Russian investors for around EUR 43 bn.

Table 1: Top ten deals by deal value in Emerging Europe countries (2010-2012)

Target Company	Sector	Deal Type	Country of Target	Country of Buyer	Deal Value (EUR million)	Year of transaction
TNK - BP	Mining (incl. oil & gas)	Minority Stake Purchase (50 %)	Russia	Russia	21,538	2012
TNK - BP	Mining (incl. oil & gas)	Minority Stake Purchase (50 %)	Russia	Russia	21,354	2012
Polyus Gold	Mining (incl. oil & gas)	Acquisition (89.14 %)	Russia	Kazakhstan	8,545	2011
Silvinit	Manu-facturing	Merger (85 %)	Russia	Russia	4,886	2010
Polkomtel	Telecom & IT	Acquisition (100 %)	Poland	Poland	4,814	2011
Uralkali	Manu-facturing	Acquisition (53.2 %)	Russia	Russia	4,397	2010
Garanti Bankasi	Finance & Insurance	Minority Stake Purchase (24.9 %)	Turkey	Spain	4,143	2010
Rosneft	Other Manu-facturing	Privatisation (5.7 %)	Russia	United Kingdom	3,721	2012
Bank TuranAlem	Finance & Insurance	Minority Stake Purchase (18.5 %)	Kazakhstan	Creditors of BTA Bank	3,565	2010
Norilsk Nickel	Mining (incl. oil & gas)	Minority Stake Purchase (7.71 %)	Russia	Russia	3,358	2011

Source: CMS and DealWatch, 2011, 2012, 2013

Despite the low transaction activity Slovakia remains fundamentally one of the best-placed Eurozone economies over the medium term. The number of transactions dropped from 46 in 2011 to 38 in 2012 and the overall value increased from EUR 235 million in 2011 to EUR 2,767 million in 2012 (Figure 3), thanks to the biggest deal noted in Slovakia in 2012 - the minority stake purchase of SPP by EPH.

Figure 3: Deals by value and volume in Slovakia (2009 -2012)
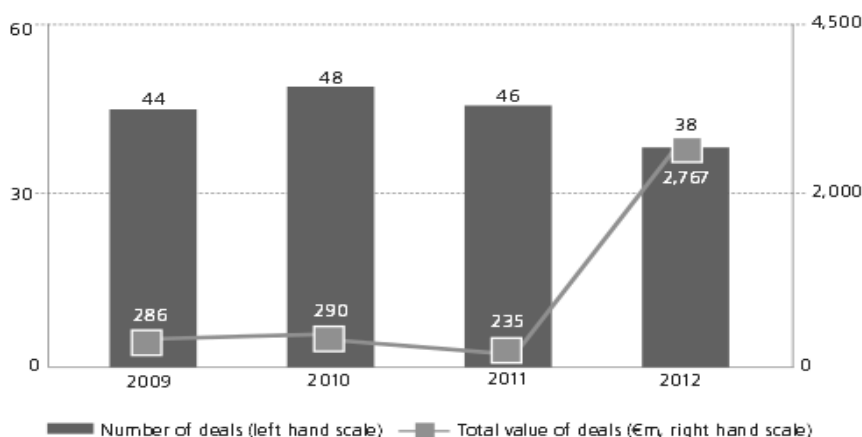
Source: CMS and DealWatch, 2013

The majority of deals were done in Manufacturing and Telecoms and IT. Top transactions closed in 2012 include the acquisition of the Aupark Tower by the American company Heitman European Property Partners IV (EUR 86 million); American Washington Penn Plastic's Co. acquisition of 100 % shares in TK Logistics (EUR 64 million) and Asseco Poland's acquisition of over 50 % of shares in Asseco Central Europe (EUR 53 million). In addition, Nova Steel Partner purchased a minority stake in PPS Group, Intech Slovakia acquired 100 % of the shares in the Trebišov heating plant and 3TS Capital Partners bought a minority stake in Piano Media. Also worth mentioning is the acquisition of Austrian Volksbank International AG (VBI) in nine countries in CEE including Slovakia by the Russian financial institution Sberbank.

Table 2: Top five deals by deal value in Slovakia (2012)

Target Company	Sector	Deal Type	Buyer	Country of Buyer	Deal Value (EUR million)
Slovenský plynárenský priemysel (SPP)	Utilities	Minority Stake Purchase (49 %)	Energetický a průmyslový holding, a.s. (EPS)	Czech Republic	2,500
Aupark Tower	Servicies	Acquisition (100 %)	Heitman European property Partners IV	United States	86
TK Logistics I, s.r.o.	Other Manufacturing	Acquisition (100 %)	Washington Penn Plastic Co., Inc.	United States	64
Asseco Central Europe, a.s.	Telecom & IT	Acquisition (53.4 %)	Asseco Poland S.A.	Poland	53
PPS Group, a.s.	Other Manufacturing	Minority Stake Purchase (19.6 %)	Nova Steel Partner, s.r.o. PPS Group a.s.	Slovakia	10

Source: CMS and DealWatch, 2013

On the basis of available analyzed data, we can state that the most attractive sector in the Slovak Republic for 2012 was Utilities sector that participated in the total amount of implemented M&A by 90.4 %, followed by Services sector with 3.1 %, Other Manufacturing with 3.1% and other sectors with 3.8 %.

From the point of implemented number of deals M&A by Sector in 2012 in Slovakia, there were nine deals from Other Manufacturing sector, seven deals from Telecom & IT sector, five deals from Wholesale & Retail Trade sector, four deals from Utilities sector, three deals from Finance & Insurance sector, three deals from Food & Beverages sector, three deals from Services sector and two deals from Transportation & Warehousing sector [1].

4. M&A activity predictions for 2013 and next five-year period

In 2013, CMS and DealWatch expect to see significant activity in Russia's natural resources, infrastructure, high-tech and consumer sectors. Poland plans to complete its 20-year privatisation program by selling stakes in around 160 companies in 2013. The sell-off list includes stakes in Poland's top bank PKO BP, utility firm PGE, insurer PZU, chemical group Ciech, real estate holding company PHN, coal mining company JSW and gas monopoly PGNiG. M&A activity throughout CEE in 2013 will largely hinge on the availability of bank liquidity for deal financing, the implementation of austerity measures and the path of the Eurozone sovereign debt crisis [1].

The Mergermarket Group's *Doing the Deal (2013)* study presents the results of a survey made in summer 2012 that asks 175 European deal makers about global M&A and IPO expectations, trends and opportunities over the next 12 months and next five years. The following contains data from this interesting survey.

Forty-eight percent of respondents expect M&A to increase in 2013 of 13.5 % and 15 % in volume and value terms respectively. Over three quarters of respondents say lingering economic weakness will be the main constraint to M&A in 2013, while more than half identify the financing market and political uncertainty. Most respondents believe the Eurozone crisis is likely to require deeper political and economic integration (55 %) or lead to

widespread austerity measures marked by prolonged recessions; respondents are especially vocal on the topic of austerity, which many view as a serious impediment to any meaningful economic recovery.

The large majority (79 %) believe that a Eurozone recovery (and a related recovery in M&A) will depend on domestic economies spending more to achieve growth; 57 % believe financial markets need to stabilise and about half of respondents believe the key will be reducing foreign trade barriers and regulatory red tape.

The outlook for M&A is mixed across different industry sectors. Energy, mining & utilities emerges as the top sector for M&A in 2013 and five years beyond, followed by pharma, medical & biotech, and consumer.

Seventy percent of respondents (Figure 4) expect China to be deal makers' number one destination in 2013. More than half of respondents (62 %) say the same of the United States, followed by India (46 %) and Brazil (39 %). Russia, on the other hand, jumped to the number three spot after placing sixth last year. The shift is

difficult to explain. It seems that a loss of confidence among Eurozone countries may have led to increased enthusiasm surrounding BRICs' long-term growth prospects. Russia's recent accession to the World Trade Organisation will also lead to markets opening, and perhaps ultimately acting as a spur to M&A.

Figure 4: The most active M&A target markets
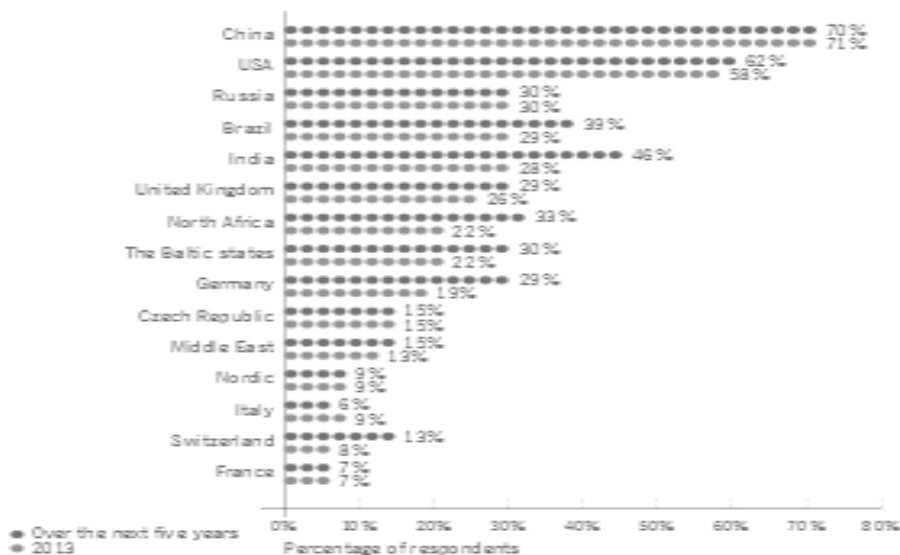
Over the next five-year period, the same names come out on top: China and the United States are tipped as the top M&A target markets over this time, followed by Russia, Brazil and India. The factors fuelling M&A will be region-specific: the appeal of the United States lies in its maturity while the appeal of China lies in its rapid growth. Surprisingly, while the UK is expected to be the sixth most active market according to respondents, by deal volume the country ranks as the second largest M&A market globally with more than 500 deals worth more than EUR 53 billion announced this year. Furthermore, the UK is performing best among European markets in terms of the revival in fresh deal activity this year, with a 5 % year-on-year increase in announced deals over first half of 2012.

Almost three quarters of respondents see the appetite for fast-growing markets as the primary force behind cross-border M&A; 60 % see the primary driver as economies of scale. Raising funds for capital expenditure investment will be the key driver behind companies going public in 2013, say more than two thirds of respondents.

When it comes to doing deals, respondents place a notable emphasis on the more human elements of deal making including face-to-face engagement and extended professional networks: nearly two-thirds of those surveyed say that M&A deals originate in the oardroom, while 40 % say that building relationships in person is a key element to successfully completing transactions [10].

Conclusion

Corporate M&A have long received a lot of attention from the corporate world, the public as well as the academic world. All M&A are unique in their nature and the motives typical include various strategic rationals, synergies and managerial reasoning offering a relativelly complex pattern of the motives. Since the start of the global financial crisis in 2007 M&A landscape has not only been transformed, it continues to evolve apace. Turmoil in financial markets, recession and the more recent emergence of concern about sovereign indebtedness have caused a great deal of economic uncertainty, which has inevitably affected the M&A environment.

The results confirm that Emerging Europe region traces the process in the Europe and in the world. The M&A activity in the region in 2012 compared to 2010 and 2011 showed a decrease by approximately 20 %. Macroeconomic concerns – particularly uncertainies over the future of the euro zone – and the resulting volatile market conditions in the equity and financial markets are damaging confidence and keeping activity depressed. However, for the medium term many companies across all regions see M&A activity as a core part of their growth strategy, and those companies with strong balance sheets, cash reserves and access to inexpensive debt are in strong position to seize M&A opportunities as and when they arise.

Súhrn

M&A sú dlhodobo v centre pozornosti verejnosti, korporátneho i akademického sveta. Príspevok poskytuje prehľad teoretických východísk a motívov fúzií a akvizícií, analyzuje trend vývoja v oblasti M&A transakcií v regióne Emerging Europe v období rokoch 2009 až 2012 a prezentuje predikcie ich vývoja v roku 2013 a v ďalšom päťročnom období.

Fúzie a akvizície sú významným indikátorom ekonomickej aktivity. Turbulencie na finančných trhoch, prehlbujúce sa problémy svetovej ekonomiky, rast zadĺženosti, neistota nad budúcnosťou eurozóny atď. v sledovanom období signifikantne prispeli k poklesu ekonomickej aktivity, ktorá nevyhnutne ovplyvnila aj oblasť M&A. Výsledky uskutočnenej analýzy potvrdzujú, že región Emerging Europe kopíruje dianie v Európe i vo svete. Objem M&A v regióne v roku 2012 v porovnaní s rokmi 2010 a 2011 poklesol približne o 20 %. Napriek uvedenému predikcie pre rok 2013 a ďalšie päťročné obdobie predpokladajú optimistický vývoj a oživenie aktivít v oblasti M&A.

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ECONOMIC IMPLICATION OF TOURISM IN V4 COUNTRIES IN A CONTEXT OF „ONE MELODY"

EKONOMICKÉ DÔSLEDKY CESTOVNÉHO RUCHU V KRAJINÁCH V4 V KONTEXTE „ONE MELODY"

Abstract: Tourism represents important development factor. Many countries that are dependent on it feel its significance, as for example small islands countries. In that respect European countries, are no exception. To achieve greater common interests, new joint organizations, associations, etc., are formed, where one example is for instance joint Visegrad community. The main aim of our study is to point out to the importance of tourism in V4 countries- Slovakia, Czech Republic, Poland and Hungary thorough selected statistic data related to tourism.
Keywords: Tourism statistics, Visegrad group, Economic impact

Kľúčová slová: štatistika v turizme, Višegrádska skupina, ekonomicky vplyv

Introduction to Vysegrad Group conception
The Visegrad Group (V4) represents a joint community of four Central European countries that was created in 1991. Its main purpose of the group is to establish cooperation between the post-socialist countries on the way too integration into modern Europe. Simonyi [11] defines V4 as a forum, which allows the participating countries to express and channel their interests and deal with important problems in general. As a group V4 creating a more stable position than they would have as separate entities. Base on this collaboration, the V4 countries often consolidate their strategies in order to achieve more sustainable results and also longer-term goals.

V4 and its connection with tourism
The framework of the V4 cooperation is base solely on the arrangement of regular meetings between representatives of each country. These meetings take place at different levels; from the highest level as for example political summits through professional and diplomatic negotiations, to the activities of non-governmental associations in the region as well as research organizations and cultural institutions. Official V4 Prime Ministers summits are held annually [2]. The structure of the V4 cooperation is not in any means institutionalized.

It is based on the premises of regular meetings between their representatives at various levels namely prime ministers, presidents, ministers and different experts

from diver's fields. The only organization in the framework of the V4 platform is International Visegrad Fund (IVF). Visegrad Fund is an international organization, whose activity is based on an international treaty signed by all four Visegrad countries [12].

Borovsky [1] claims, that "Tourism is an industry that in the past two decades has experienced extremely rapid rate of development. This allows particularly fast increase of globalization - the removal of borders, free movement of people, accelerating the flow of information, and many other features of globalization.

Tourism by its performance is presented as a particularly strong sector of the global economy. In recent years, the number of participants in tourism climbs to one billion. Up to the statistics of World tourism organization (UNWTO) and monthly edited World Tourism Barometer the first half of 2012 reached a significant number of the 467 million international arrivals, which comparing with the same period of the 2011 increased by 22 millions international tourists . Even though the world economic crisis attacked tourism sphere its exceptional advantage over manufacturing sector is the ability to speed recovery [10].

According to the World Tourism Organization (WTO) GDP growing 3.5%, growth in tourism is on average 1.3 times faster than GDP. And that was a main reason of V4 countries to develop its activities in the field of tourism. In addition, the V4 as free association of States had before entry to the EU political, rather than economic significance. It is logical that the group became more focus on different areas of the national economies of member countries [6].

Activities in tourism are carrying out through the V4 project called "European quartet". As summarized Košatka [8], "European quartet created National Tourism Office centers in all V4 countries. In each centre, there is a person in charge who managing all marketing activities under the responsibility of each particular country. The main and only one V4 International Visegrad Fund support individual regional projects through its grant schema".

A comprehensive image is built by a common logo and the slogan "European Quartet - One Melody" The quartet participate on joint marketing activities "aimed at the main product groups (major cities, historic towns, spas, Jewish heritage sides, UNESCO monument, congress and incentive tourism) and selected promotions tools (exhibitions and fairs, workshops, presentations, road shows, Info trips, advertising and media campaigns)" [8].

The main objective of the project is to attract foreign visitors to the region, not only to the individual countries, the idea behind is that while on the EU level V4 countries competing on its own, on the world market scene represent single entity.

At the preset time aim of V4 countries is shifting towards overseas market like U.S., China, Japan, Russia, Brazil and India. Focus on these specific overseas markets has its justification. For American and Japanese V4 countries are very attractive

especially if they are offered as a whole package. Typical in one week they travel around the 4 to 5 countries. Brazil and Russia represents a huge potential. Beside, Brazil has the advantage of visa-free travel to EU countries. On the other hand, China and India are countries, which in recent years has recorded remarkable growth boom [5].

Regarding to the offered products, project is focusing on products for specific markets. For example, a special product for the Russian market is spa and wellness a major product for the U.S and Brazil are Jewish heritage sides. Since 2010 we can observe increased interest of above mention tourist products [9]. In general, the quartet puts the greatest emphasis on products like cultural and historical monuments sides. According Chmel [4], culture and history is of the greatest wealth of V4 countries, but the V4 governments to some extend undervalued its importance and authenticity is often overlooked. Therefore support this area should by one of the main objective of the European Quartet.

The budget for the operation of the quartet was in its first year just over 200 000 euro. From this money, V4 funded two exhibitions, two study tours, released a few promotional materials (brochures, film) and launched a website. These initial efforts brought some benefits. As for example, one of the American travel agency Unique World Cruises bought this idea, and as a result decided to include the trips to V4 countries. Moreover, has issued a travel itinerary called "European Quartet - One Melody". This, enthusiasm and success followed increased budget, which is growing ever since at the same time increasing activities and quality of the joint promotion [5].

Priority is through historic towns, UNESCO cites, Jewish monuments and major cities create a positive first impression to the visitors. In addition to interesting cultural and historical sides, V4 countries can offer truly unique natural treasures. Such as caves in Slovakia and Hungary. For Slovakia and Poland are characteristic High Tatras, the Czechs are proud of Český Krumlov. Hungary has largest freshwater lake - Lake Balaton in Europe. In addition, in each country there are number of thermal hotspots. Because of that, the new products offered by the European quartet include as well spa towns [5].

According to the official website of the European project quartet, V4 present together six product groups:
- Historic cities and monuments,
- Heritage UNESCO sites
- Spa towns Spa & Wellness,
- Leisure activities
- Gastronomy,
- Sightseeing tours and excursions [3].

Methods and methodology

Study's aim

The main aim of the study is to point to the importance of tourism in V4 countries-Slovakia, Czech Republic, Poland and Hungary through selected statistical data related to tourism and its performance.

In our study, we used several research methods. For processing theoretical part we used method of scientific abstraction related to tourism especially the Visegrad 4 countries. Another not less important was a correlation method for remittance of relationship between the data of the population number and country's area as variables. In V4, we examined three specific data related to tourism in selected period from 2002 to 2010. Among those, we included number of tourists, Tourism balance and Share of tourism in GDP. To compare the share we also described Rate of the country's GDP. The variables we use was area on 1000 km^2 and population rate, that was consequently compare to the total number of tourist, tourist balance and share of tourism GDP.

The Visegrad four countries are the destination with a lot to offer. They dispose by natural but also a rich cultural potential. Yearly millions of tourist visits them. To the most popular and demanded products we can include spas and wellness centers, thermal pools, water parks, urban tourism sides, active and relaxing vacations in the mountains and by lakes and so on. In Slovakia most significant potential represents mountains and UNESCO heritage sights. Up to the results of European quartet (EQ) among to the most important places, we can include: High Tatras, Low Tatras, UNESCO sights, and Ochtinská aragonite cave. In Czech Republic, Prague represents destination in destination that attracts majority of tourists even though the rest of the country has a lot what to offer to its tourists. The most interesting up to (EQ) are: Český Krumlov, Kroměříž, Complex Lednice - Valtice, Olomouc, Ostrava, Praha, Rožnov pod Radhoštem, Spa triangle – Karlove Vary, Mariánské Lázně, Františkovy Lázně, UNESCO heritage and so on. Poland is no exception with many cultural sights. EQ mentions mostly Gdaňsk, Krakow, Malbork, Warsaw, Wieliczka, Wroclaw, Zakopane and Zamość. In Hungary is best known Balaton and spa potential the Quartet mentions Budapest, Debrecen, Eger, Hollókö and Tokay, Balaton, Pannonhalma, Sopron and so on.

What's concerning accommodation services for the tourist Slovakia disposed in 2010 by 3126 tourism accommodation establishments, which was the second lowest number of all V4 countries? A little less had Hungary with 2957. Comparable number was in Czech Republic and Poland. The accommodation establishments' leader was Czech Republic with 7235. A little less had Poland with total number 7206. In those, the largest accommodation capacity in terms of number of rooms was again in Czech Republic with 176403 rooms. Poland had 119175 rooms, Hungary 87299 rooms and the lowest number was in Slovakia with 57406 rooms. Other figures emerged, however, when mentioning the number of beds. Despite the awaited fact that the number of beds is adapted to two previous data, the situation

was different. Most beds were in Poland- 610111, and then Czech Republic- 449068, Hungary- 311490 and again the last position defended Slovakia- 147492.

For a better overview in the introduction of V4 countries, we are giving basic data in terms of the population number and square area of all countries.

Chart 1: Basic V4 statistics

Country/stat.info	Slovakia	Czech republic	Poland	Hungary
Area in km^2	49 035	78 866	312 679	93 030
Population	5 397 036	10 230 060	38 538 447	9 982 000

Source: own processing up to statistic office data

Up to the general information, the largest country's area of four selected countries is that in Poland with 312 679 km^2. The second is in Hungary, Czech Republic and Slovakia as the smallest one with 49 035 km^2. Almost the same situation results from the square km. area that the largest population is as well in Poland with almost 40 million, and the lowest in Slovakia with 5,3 million inhabitants. Czech Republic with even smaller area than Hungary has higher number of inhabitants.

As the first selected data was number of tourists.

Chart 2: Number of tourists in V4 countries

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Slovakia	3446	3374	3244	3428	3584	3777	4083	3381	3392
Czech republic	10415	11346	12220	12362	12725	12961	12836	11986	12212
Poland	14174	14644	15746	16597	17512	18947	19556	19345	20462
Hungary	6606	6965	7297	7731	77183	7474	7651	7151	7473

Source: own processing up to Statistical Brochure V4 (2006) a Facts and Figures (2010)

In terms of the number of tourists in mentioned period 2002-2010 in Slovak conditions the best year was 2008 when the number of tourists reached 4 083 000 overnights stay. After the impact of economic crisis, the number strongly decreased as in Czech and Hungary. For the results of Czech Republic, the best year while mentioning the number of tourist was in 2007, before the crisis influenced this sphere. After it, the number increased already in 2010 as in all V4 countries. ,, Up to the statistic's data, Slovakia faces the problem how to interact with foreign countries to support inbound tourism. Future strategies should focus on communication with external environment and the presentation of the real qualities that its small area has" [10].

Next selected data was tourism balance, which is treated as a difference between tourism revenue and expenditure.

Chart 3: Tourism balance (mil. Euro)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Slovakia	299	257	126	366	366	356	295	170	214
Czech republic	1452	1441	1529	1785	2494	2435	2182	2100	2307
Poland	1293	1150	1582	1550	1596	2715	2558	3733	3272
Hungary	1629	1241	963	1085	1879	1594	1918	2110	2229

Source: own processing up to Statistical Brochure V4 (2006) a Facts and Figures (2010)

The highest tourism balance was mostly in period between years 2002-2010 in Poland. Weaker year was in 2005 when it was less than in the Czech Republic. In other cases, it was higher and the best result was achieved in 2009 with 3733, which was also the highest number of all V4 countries. The lowest balance of all each year of researched period was in Slovakia. The most successful years were 2005 and 2006. After that, it decreases. In 2011 the balance was 177, 9 mil. Euro. Comparing with the year before, balance has decreased in 36, 1 from 214 mil. Euro. The highest proportion of the balance was in 2006 with 366, 1 mil. Euro. The lowest one was obviously in 1999 in amount of 113, 8 which increased in 2011 by 56%. Among the weakest years, we can include year 2004 with 125.8 million Euros and 170.4 million Euros in 2009, due to the economic crisis. This is connected with the lowest number of participants in these years. The second strongest tourism balance was in Czech Republic and then in Hungary.

Next selected data was Share of tourism in gross domestic product.

Chart 4 Share of tourism in GDP

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Slovakia	3,1	2,6	2,2	2,6	2,7	2,7	2,7	2,6	2,6
Czech republic	4,2	4,2	3,9	3,8	4,1	4	3,6	3,7	3,7
Poland	2,4	1,9	2,4	2,1	2,1	2,5	2,2	2,2	2,2
Hungary	5	5,4	5	N	3,8	3,5	3,9	4,5	4,2

Source: own processing up to Statistical Brochure V4 (2006) a Facts and Figures (2010)

The best share, which is very important fact, was in 2010 as well as almost in each year of examined research in Hungary. Second, the most significant was in Czech Republic. The lowest share of tourism in GDP is regularly in Slovakia, which is very comparable with Poland.

Variable	Correlation (Statistics V4) p < ,05000 N=9			
	TN_Slovakia	TB_Slovakia	Sh_Slovakia	Rt_Slovakia
TN_Slovakia	1,0000	,5194	,3380	-,0644
	p= ---	p=,152	p=,374	p=,869
TB_Slovakia	,5194	1,0000	,5716	,5455
	p=,152	p= ---	p=,108	p=,129
Sh_Slovakia	,3380	,5716	1,0000	,0387
	p=,374	p=,108	p= ---	p=,921
Rt_Slovakia	-,0644	,5455	,0387	1,0000
	p=,869	p=,129	p=,921	p= ---

Source: own processing

Czech Republic

Variable	Correlation (Statistics V4) p < ,05000 N=9			
	TN_Czech	TB_Czech	Sh_Czech	Rt_Czech
TN_Czech	1,0000	,7592	-,5280	,6562
	p= ---	p=,018	p=,144	p=,055
TB_Czech	,7592	1,0000	-,3922	,4215
	p=,018	p= ---	p=,297	p=,259
Sh_Czech	-,5280	-,3922	1,0000	-,0431
	p=,144	p=,297	p= ---	p=,912
Rt_Czech	,6562	,4215	-,0431	1,0000
	p=,055	p=,259	p=,912	p= ---

Source: own processing

Poland

Variable	Correlation (Statistics V4) p < ,05000 N=9			
	TN_Poland	TB_Poland	Sh_Poland	Rt_Poland
TN_Poland	1,0000	,8894	,1109	,2180
	p= ---	p=,001	p=,776	p=,573
TB_Poland	,8894	1,0000	,2148	-,1237
	p=,001	p= ---	p=,579	p=,751
Sh_Poland	,1109	,2148	1,0000	,1546
	p=,776	p=,579	p= ---	p=,691
Rt_Poland	,2180	-,1237	,1546	1,0000
	p=,573	p=,751	p=,691	p= ---

Source: own processing

Hungary

Variable	Correlation (Statistics V4) p < ,05000 N=9			
	TN_Hungary	TB_Hungary	Sh_Hungary	Rt_Hungary
TN_Hungary	1,0000	,1761	-,3759	,1410
	p= ---	p=,677	p=,359	p=,739
TB_Hungary	,1761	1,0000	-,5551	-,1304
	p=,677	p= ---	p=,153	p=,758
Sh_Hungary	-,3759	-,5551	1,0000	,5346
	p=,359	p=,153	p= ---	p=,172
Rt_Hungary	,1410	-,1304	,5346	1,0000
	p=,739	p=,758	p=,172	p= ---

Source: own processing

As we mentioned at the beginning of our study, cooperation is a very important factor that can improve tourism in selected countries. Vysegrad countries are yearly supported to make their presentation and promote themselves abroad. Amount of funds provided for promotion V4 countries we can see in the chart below.

Graph 1: V4 grant budget (in million Euro)
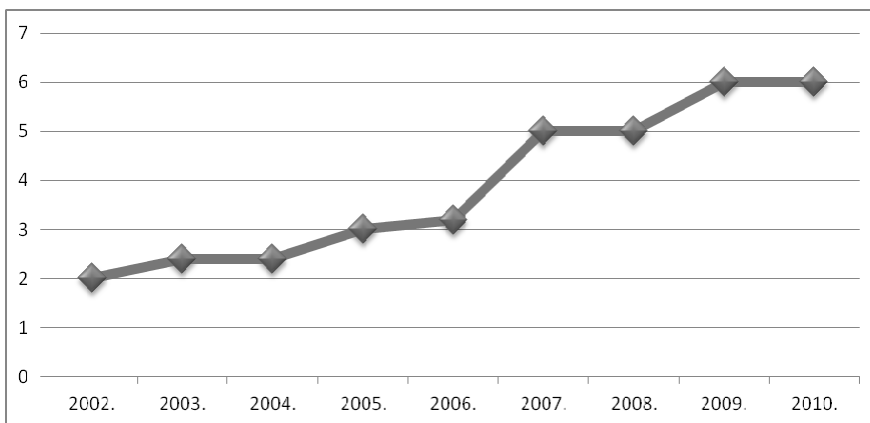
Source: own processing up to www.visegradfund.org

Conclusion
From the results of statistical data we can conclude, that tourism sphere is growing rapidly on a yearly bases. Even though tourism faces so many economic, social, environmental and other problems its strength does not weaken, that can be observe particularly in contemporary society. Based on statistical data, we can conclude that all V4 countries are within one-year recouped to the previous position in their own tourist performance. That was confirmed in almost all participating countries. Further, we can say that Czech Republic presents the best results considering all above-mentioned V4 countries. Slovakia and Poland showed the weakest performance in tourism. We can say that Czech Republic performed the best in share

of tourism in GDP. Poland performed the best regarding total number of tourists also in tourism balance.

Súhrn

Cieľom príspevku bolo popísať vplyv cestovného ruchu na ekonomiku krajín Vyšehradskej štvorky. V sledovanom období v rokoch 2002 až 2010 boli popísané a štatisticky vyhodnotené selektované dáta. V rámci nich sme popísali počet turistov, saldo cestovného ruchu a podiel cestovného ruchu na hrubom domácom produkte jednotlivých krajín V4. Následne boli tieto dáta popísané vo vzťahu k rozlohe krajiny (na 1000 km2). Zo súhrnných výsledkov vyplýva, že najúspešnejšou krajinou v rámci cestovného ruchu v krajinách V4 sa javí Česká republika. Na posledných miestach sa umiestnilo Slovensko a Poľsko, ktoré zaostávajú v rozvoji tohto odvetvia hospodárstva.

Konštatujeme, že cestovný ruch patrí medzi najdynamickejšie a rozvíjajúce sa odvetvia svetového hospodárstva. Jeho význam dokumentuje skutočnosť, že podiel cestovného ruchu na svetovom hrubom domácom produkte i na zamestnanosti predstavuje až 10%. Okrem vytvárania pracovných príležitostí, a to aj pre menej kvalifikované pracovné sily, najvýznamnejším prínosom cestovného ruchu pre ekonomiku štátu je jeho devízový efekt. Devízové príjmy z cestovného ruchu prispievajú k zlepšovaniu platobnej bilancie štátu, k tvorbe devízových rezerv a sú súčasne akceleračným faktorom rozvoja štátu. Nad touto realitou by sme sa mali zamyslieť a podniknúť kroky, ktoré by smerovali k zlepšeniu tohto rýchlo rozvíjajúceho sa odvetvia národného hospodárstva

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Elena Širá

EVALUATION OF INSURANCE MARKETS CONCENTRATION IN SLOVAK REPUBLIC AND HUNGARY

HODNOTENIE KONCENTRÁCIE POISTNÝCH TRHOV V SLOVENSKEJ REPUBLIKE A V MAĎARSKU

Abstract: *This article deals with the level of concentration in 2 insurance markets. This level is calculated via Herfindahl-Hirschman Index and Concentration Index. Firstly, we analysed insurance markets through selected indicators and after then, we calculated and compared the level of concentration in these markets. For comparison we choose the insurance markets in the Slovak Republic and in Hungary, because of similar conditions and development of these markets.*
Key words: *Insurance market. Written premiums. Concentration Index. Herfindahl-Hirschman Index.*

Kľúčové slová: *Poistný trh, predpísané poistné, miera koncentrácie, Herfindahl-Hirschmanov index.*

Introduction

Insurance is a specific sector of the economy, which is engaged in insurance, reinsurance and brokerage activities. Insurance by its activity affects other sectors of the economy. It helps businesses to maintain economic stability but also ensures the standard of living of citizens under various unforeseen negative conditions. Insurance companies that offer their services to the insurance market are important economic entities of financial market.

The insurance market is a place where offer and demand of insurance meet together. Insurance Services represent specific services. Insurance coverage as the need arises in each company based on the existence of various risks. System represents a different market instruments and regulatory measures that ensure the flow of funds and insurance services among the players on insurance market on the principle of conditional return and nonequivalence.

Material and methodology

We analyzed concentration in 2 insurance markets, in the Slovak Republic (SR) and in Hungary. We choose these countries according to similar conditions in the markets and similar economic indicators. We analysed data from Statistical Bureau of each countries, from annual reports of Insurance associations in both countries and from annual report of CEA (Insurance Europe). In this article we used the methods of analysis, Herfindahl-Hirschman Index and Concentration Index. Firstly, we analysed insurance markets through selected indicators. We choose the number

of insurance companies, the number of employees in insurance companies and the amount of written premiums. We divided written premiums into 2 groups, the group of life insurance and the group of non-life insurance. After analysis we calculated and compared the level of concentration in insurance markets in the Slovak Republic and in Hungary.

The aim of this article is to compare the concentration in both countries and to show the differences in the markets and in the level of concentration.

Discussion and results
Situation at insurance markets in the Slovak Republic and Hungary

In the period 2006 - 2011 the number of commercial insurance companies in the Slovak insurance market was almost stable. In the year 2009 the number of insurance companies dropped to 21, but these fluctuations are mainly associated with mergers of insurance companies. In 2011 there were 24 commercial insurance companies in the Slovak insurance market. Number of employees in insurance companies during the period decreased from 6300 to 6100.

Tab 1 Development of number of insurance companies and their employees in the SR

	2006	2007	2008	2009	2010	2011
Number of insurance companies	25	24	23	21	23	24
Number of employees	6,300	6,300	6,300	6,218	6,097	6,100

Source: SLASPO a CEA data

The situation of the Hungarian insurance market in the number of insurance companies and their employees is also without major fluctuations. Number of commercial insurance companies is stable. In 2006 there were 28 insurance companies on the market in Hungary, in 2011 the number increased to 30. There was a slight decrease in the number of workers in this sector, despite a slight increase in the number of insurance companies. In 2011, the commercial insurance companies in Hungary employed 24,493 workers. More detailed data are listed in Table 2.

Tab 2 Development of insurance companies and their employees in Hungary

	2006	2007	2008	2009	2010	2011
Number of insurance companies	28	28	31	30	30	30
Number of employees	26,131	26,242	26,125	23,914	25,003	24,493

Source: Mabisz and CEA data

Comparing the number of insurance companies in both countries, in 2011 there were only 6 insurance companies (20 %) in Slovakia less than in Hungary. But there is a significant difference in number of employees. The Slovak insurance companies employ only about a quarter of employees compared to Hungary, and the work efficiency of employees in Slovakia is higher compared to Hungary.

Comparing the two countries in terms of population and GDP level (Table 3), the numbers also vary. Population in Slovakia is only about half of the population of Hungary. The residential trends are fundamentally different. In Slovakia in this period the number of population grew, while in Hungary it declined. The level of GDP in 2006 in Slovakia represented only half of GDP in Hungary. But in the year 2011 the level of GDP in Slovakia rose to more than 68 % of GDP in Hungary. Thus, GDP growth was faster in Slovakia than in Hungary. The highest predictive value from all analyzed economic data is presented by ratio of GDP per capita. This indicator can best compare the level of GDP in both countries, taking into account differences in population. In 2006, GDP per capita in both countries was roughly at the same level. Since 2007, GDP per capita has been higher in Slovakia than in Hungary, despite the significantly higher values of total GDP in Hungary compared to Slovakia. In 2009, when the crisis broke out, GDP per capita in both countries declined compared to the previous year. However, in the following year 2010 the value of this ratio was higher than in the year before the crisis in the Slovak economy, but on the contrary, Hungary did not reach the level before the crisis in 2010, or in the year 2011.

Tab 3 Number of inhabitans and GDP in Slovakia and Hungary in 2006 - 2011

	2006	2007	2008	2009	2010	2011
Population in SR in mil.	5,389	5,394	5,401	5,412	5,425	5,392
Population in Hungary in mil.	10,077	10,066	10,045	10,031	10,014	9,986
GDP in SR in mil. €	44,502	54,811	64,414	62,795	65,744	69,058
GDP in Hungary in mil. €	89,593	99,431	105,545	91,403	97,095	100,513
GDP per capita in Slovakia in €	8.26	10.16	11.93	11.60	12.12	12.81
GDP per capita in Hungary in €	8.89	9.88	10.51	9.11	9.70	10.07

Source: own calculation according to CEA data

Based on the Table 4 there was an increase in the number of total written premiums in 2011 compared to year 2006 in the Slovak insurance market. In the examined period there were recorded slight variations in this indicator, but even though the situation was stable.

Tab 4 Development of written premiums in Slovakia

Written premiums in mil. €	2006	2007	2008	2009	2010	2011
Life insurance	847	956	1,106	1,062	1,126	1,145
Non-life insurance	938	959	1,002	965	941	965
Total	**1,785**	**1,915**	**2,108**	**2,027**	**2,067**	**2,110**

Source: SLASPO data

In the area of insurance premiums in Hungary the situation was different every year. Thus the development of this indicator has fluctuated. Gross written premium in life insurance was higher than in non-life insurance, except the year 2009.

Tab 5 Development of written premium in Hungary

Written premiums in mil. €	2006	2007	2008	2009	2010	2011
Life insurance	1,592	2,024	1,834	1,466	1,607	1,574
Non-life insurance	1,550	1,678	1,706	1,496	1,456	1,365
Total	3,142	3,702	3,540	2,962	3,063	2,939

Source: Mabisz and CEA data

In Slovakia, since 2008, there was predominance of written premiums in the life insurance over non-life insurance. In Hungary, during the entire period except the year 2009, there was the predominance of written premiums in the life insurance over non-life insurance. This trend is similar to the situation on the insurance market in developed countries, because only in post-communist countries, the situation is reversed. [9] Gross written premium was lower in Slovakia than in Hungary, which can be seen in Graph 1.

Graph 1: Development of written premiums in Slovakia and Hungary
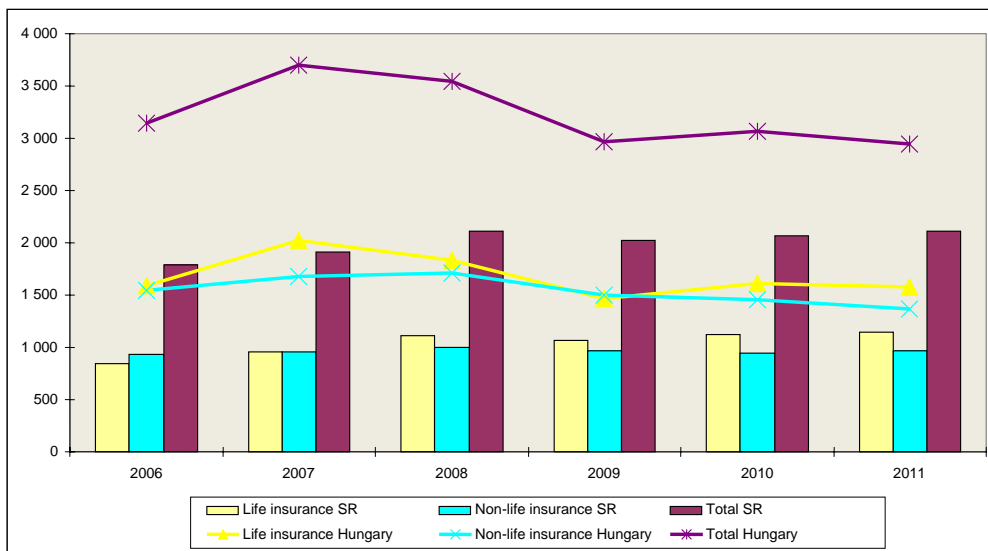
Source: own elaboration

But to compare the two countries in this indicator more accurately, the value of insurance premiums per capita should be calculated. Written premiums per capita in the given period grew in Hungarian insurance market. But the values of this indicator in Slovakia in the years 2006 - 2010 declined, and only in 2011 there was recorded higher value than the year before, compared to 2006. When comparing the values of Slovakia and Hungary, this indicator in Hungary has higher values than in Slovakia, although the difference is only 7 %.

Tab 6 Written Premium per capita in €

	2006	**2007**	**2008**	**2009**	**2010**	**2011**
Written Premium per capita in Slovakia in €	0.3722	0.3721	0.3718	0.3712	0.3705	0.3730
Written Premium per capita in Hungary in €	0.3981	0.3988	0.3998	0.4006	0.4014	0.4028

Source: own calculation

The Herfindahl-Hirschman Index
The Herfindahl–Hirschman Index (or HHI) is a measure of the size of firms in relation to the industry and an indicator of the amount of competition among them. This index was named after economists Orris C. Herfindahl and Albert O. Hirschman, it is an economic concept widely applied in competition law, antitrust and also technology management. [6], [7], [1], [3]

The HHI is calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. The HHI takes into account the relative size distribution of the firms in a market. It approaches zero when a market is occupied by a large number of firms of relatively equal size and reaches its maximum of 10,000 points when a market is controlled by a single firm. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases. [2]

$$H = \sum_{i=1}^{N} s_i^2$$

where s_i is the market share of firm i in the market, and N is the number of firms.

The Herfindahl Index (H) ranges from 1/N to one, where N is the number of firms in the market.

A HHI index below 100 indicates a highly competitive index.
A HHI index below 1,500 indicates an unconcentrated index.
A HHI index among 1,500 to 2,500 indicates moderate concentration.
A HHI index above 2,500 indicates high concentration. [2], [7]

A small index indicates a competitive industry with no dominant players. If all firms have an equal share the reciprocal of the index shows the number of firms in the industry. When firms have unequal shares, the reciprocal of the index indicates the "equivalent" number of firms in the industry.
In both countries analyzed, there has been a high concentration of the insurance markets. Higher HHI values are achieved in Hungary, so there is concentration measured by HHI higher than in Slovakia, which can be seen in the Graph 2. In both countries analyzed, concentration increased in the period 2006-2009, and since 2009, it has got the downward trend. Concentration HHI data are listed in Table 7.

Tab. 7 Herfindahl-Hirschman Index

HHI	2006	2007	2008	2009	2010	2011
Slovakia	4,269.576	4,319.276	4,387.896	4,460.308	4,344.070	4,330.181
Hungary	8,539.137	8,626.993	8,775.778	8,920.602	8,688.128	8,648.734

Source: own calculation

Graph 2: Herfindahl-Hirschman Index in Slovakia and Hungary
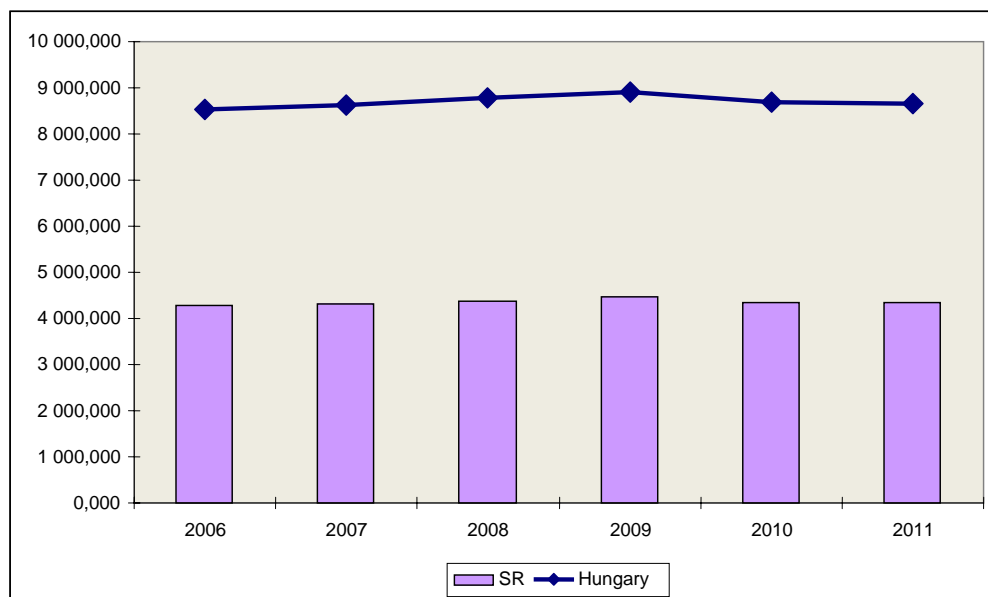
Source: own elaboration

Concentration ratio

In economics, a concentration ratio is a measure of the total output produced in an industry by a given number of firms in the industry. The most common concentration ratios are the CR4, CR6 and the CR8, which means the market share of the four and the eight largest firms. Concentration ratios are usually used to show the extent of market control of the largest firms in the industry and to illustrate the degree to which an industry is oligopolistic.

The standard tools of market competition measurements are the Herfindahl index (HHI) and the concentration ratios (CRn). These two are known as the traditional structural measures of market concentration (based on market shares). The concentration of firms in an industry is of interest to economists, business strategists and government agencies. [7], [1]

The concentration ratio is the percentage of market share held by the largest firms (m) in an industry.
$CR_m = \Sigma^m_{i=1} s_i$
Therefore it can be expressed as:

$$CRm = s_1 + s_2 + ... + s_m$$

where s_i is the market share and m defines the number of measured firms.

Concentration ratios range from 0 to 100 percent. The levels reach from no, low, medium, high concentration to "total" concentration.

No concentration – 0 % means perfect competition or at the very least monopolistic competition.
Total concentration – 100 % means an extremely concentrated oligopoly.
Low concentration – 0 % to 50 %. This category ranges from perfect competition to oligopoly.
Medium concentration – 50 % to 80 %. An industry in this range is likely an oligopoly.
High concentration – 80 % to 100 %. This category ranges from oligopoly to monopoly. [7]

The major benefit of the Herfindahl index in relationship to such measures as the concentration ratio is that it gives more weight to larger firms.

When analyzing the concentration, the most commonly used are CR4 or CR6. We also calculated the CR2, because its values are interesting, because the 2 insurance companies have got over 50 % of market share in Slovakia.

Tab 8 Concentration ratio for 2 firms

CR2 v %	2006	2007	2008	2009	2010	2011
SR	54.25	54.45	53.21	53.46	51.76	51.43
Hungary	36.42	34.55	36.09	35.29	34.82	32.24

Source: own calculations

When comparing the degree of concentration of 2 biggest companies on the Slovak market, the concentration ratio was over 50 %, so the market is highly concentrated. The values achieved in Hungary were 30 %, so the insurance market is moderately concentrated.

Tab 9 Concentration ratio for 4 firms

CR4 v %	2006	2007	2008	2009	2010	2011
SR	67.67	67.39	69.43	70.29	68.46	67.99
Hungary	60.16	57.23	56.77	55.87	55.77	53.23

Source: own calculations

When comparing standard 4 biggest companies on the market, so both analyzed markets fall into the category of highly concentrated industry. In Hungary, the index values were declining, in Slovakia the development fluctuated. The highest values were in Slovakia achieved in 2009, more than 70 %. We offer the data for concentration ratio for 6 companies (Table 10).

Tab 10 Concentration ratio for 6 firms

CR6 v %	2006	2007	2008	2009	2010	2011
SR	76.54	76.38	79.63	81.53	79.54	78.64
Hungary	75.79	72.76	73.00	71.75	71.49	68.94

Source: own calculations

Conclusion

In Hungary, there operate more commercial insurance companies in insurance market with significantly more staff than in Slovakia. Although the value of written premiums is higher in Hungary than in Slovakia, the values of insurance premiums per capita differ only in minimum. A common feature of both insurance markets is the tendency of higher insurance premiums for life insurance than non-life, which is noticeable in Slovakia since 2008. In assessing the concentrations of both insurance markets, the measured HHI proves that the two markets are highly concentrated, though Hungary achieved even higher HHI than Slovakia. In assessing the concentration ratio the 2 largest insurance companies control more than 50 % of the Slovak insurance market. This situation is caused by long monopoly of one commercial insurance company in the period to 1989. Yet in Hungary, the two largest insurance companies control just over 32 % of market. When evaluating CR4, both countries have been in the category of highly concentrated insurance markets, where the value of this ratio exceeds 50 %.

Súhrn

Článok sa zaoberá úrovňou koncentrácie na dvoch vybraných poistných trhoch. Úroveň koncentrácie poistných trhov určuje na základe hodnôt Herfindahl-Hirschmanovho indexu a miery koncentrácie. Najskôr sú však analyzované poistné trhy cez vybrané ukazovatele a až následne sú vypočítané a porovnávané úrovne koncentrácie. Pre porovnanie sme si vybrali poistný trh Slovenska a Maďarska, keďže tieto poistné trhy sú si podobné.

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ANALYSIS OF REGIONAL DISPARITIES OF CHOSEN EU COUNTRIES IN THE CONTEXT OF ECONOMIC RECESSION

ANALÝZA REGIONÁLNYCH DISPARÍT VYBRANÝCH KRAJÍN EÚ V KONTEXTE EKONOMICKEJ RECESIE

Abstract: *It is suitable to monitor trends of the EU countries regional disparities in the current period that is characterised by an effort of the EU countries to deal with negative consequences of the economic recession. Significant disparities between regions in the country slow down total economic development and it is shown mainly by economically less developed economies. The Scientific Paper analyses trends of the chosen regional development indicators. It evaluates the level of the regional disparities in the chosen EU countries by chosen statistical methods. The sample is created from the V4 countries and from the chosen old EU member states – France and Germany.*

Key words: *Regional disparities, FDI, GDP, rate of unemployment, labour productivity.*

Kľúčové slová: *Regionálne disparity, PZI, HDP, miera nezamestnanosti, produktivita práce.*

JEL: R1, R13

Introduction

It was generally expected the decrease of the economic backwardness of the Slovak Republic towards the old member states and simultaneously its real convergence by an entry of the Slovak Republic into the EU. Slovak Republic is typical by significant regional disparities and therefore EU common market as well as new competitive environment should have helped to eliminate weak economic subjects. Subjects, that would be able to adapt to the new and mainly the more demanding european customer, should be asset for slovak economy and that way increase economic efficiency of the country. The aim of the EU regional policy is real convergence of the economically less developed areas and the compensation of the regional disparities. However, economic recession has brought many problems and complications and regional policy and sustainable development of the EU countries are rather less important.

Material and methods

In the Paper we analyse development of the regional disparities of V4 countries (Slovak Republic, Czech Republic, Hungary and Poland) and we compare them with the data of the old member states – Germany and France. We analyse the data from the period 2001-2011. Data were gained from the Eurostat database. *The aim of the Paper is to find out and to evaluate the regional disparities of the chosem EU countries and the comparation was focused on the chosen new member states (entry in the 2004) and chosen old member states.*

We compare chosen indicators of the economic efficiency: real GDP per inhabitant in EUR, gross wages at current prices in mil. EUR, state of the total foreign direct investments in % of GDP, labor productivity per employed person and rate of unemployment in %.

Under the Eurostat methodics, GDP includes goods and services that are or can be realized on the market and goods that are produced by government institutions and non-profit organizations and are specified for consumption. Real GDP per inhabitant is given by ratio of real GDP of the country and average number of the inhabitants in the given year. Conversion is made to the base year 2005. Gross wages include total reward (money and natural), but they do not include social contributions of the employers. The state of the foreign direct investments (FDI), as a percentage from GDP, represents the level of the active FDI, ie domestic investments abroad and the level of the passive FDI (foreign investments in the domestic economy) to the end of the searched period. And the ownership direct investor on the domestic capital is at least 10 %. Next, according to the Eurostat, labor productivity per employed person represents added value of the final production of the country without the value of the intermediate product per employed person in the country. Data is reported in the purchasing power parity and it compare the indicator value to the EU 27 average. Rate of unemployment is expressed as percentage ratio labor force and economically active population where labour force is created by the number of employed and unemployed people. Unemployed population includes people in the years of 15-74 who either has not been employed yet or they are ready to start work immediately. Michálek (2012) divides the methods of the regional disparities measuring for example onto:

- Simple indirect methods,
- Simple comparative measurement methods,
- Methods by the determination of the spatial polarization rates,
- Tools of the spatial organization and concentration and etc.

We have evaluated regional disparities of the chosen regions, i.e. observation units by definition of the spatial polarization rates, concrete by *ratio of the data set, relative range of data set and coefficient of variation. Ratio of the data set (Kx_j)* expresses how multiple is the difference between the extreme data in the analysed file and is calculated by the relation:

$$Kx_i = \frac{x_{max}}{x_{min}}; \ 0 \leq Kx_i < \infty, \tag{1}$$

Where: Kx_i is value of the indicator x in the observation file i, x_{min} is minimum value of the indicator x_i a x_{max} is maximum value of the indicator x_i.

Relative range of data set (Qx$_i$) expresses ratio of the difference between the maximum and the minimum indicator value x_i to the average of the data file.

We calculate the indicator by the relation:

$$Qx_i = \frac{x_{max} - x_{min}}{x}; \, 0 \leq Qx_i < \infty, \tag{2}$$

Where: Qx_i is the value of the indicator x in the observation unit i, x_{min} is minimum value of the indicator x_i, x_{max} is maximum value of the indicator x_i a x is arithmetic average of the values x_i in the data file.

Coefficient of variation (v) is the last indicator, by which we have analysed achieving rate of regional disparity in the chosen countries. posledným ukazovateľom, pomocou ktorého sme analyzovali dosahovanú mieru regionálnej disparity v sledovaných krajinách, bol *variačný koeficient (v)*. Indicator is not depending on the measured values of the data file. It is expressed as a ratio of the standard variation and the average of the data file and it expresses relative rate of dispersion that is derived from the standard variation.

We calculate the indicator by the relation:

$$v = \frac{\sqrt{\dfrac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n}}}{\bar{x}}; \, 0 \leq v < \infty, \tag{3}$$

Where: n is number of the observation units, x_i is value of the indicator x in the observation unit i and $\bar{x}$ is arithmetic average of the values of indicator x_i.

Results and discussion

Priority aim of the European union is to increase economic efficiency of the member states what directly contributes to the increasing of the competititveness. European Competitiveness Report (2006) states that *competitiveness is sustainable growth of the national or regional standard of living and the lowest level of the involuntary unemployment*. Therefore, it is relevant to observe and to measure regional disparities and subsequently to take such an action that would ensure reduction of the regional disparities.

It is sometimes very problematic to define a region or area that is subject analysis beacuse we can see discrepancy in the regional data collection from the competent authorities. Simultaneously, data time retardation as well as their unavailability what complicates analysis, is a problem. Under the Act 539/2008 Z. z. we define region *as a territorial unit defined according to classification of territorial units for statistics*. Another key term defined in the Act is term *regional policy* that is under the Act *coordinated file of the activities and procedures of the competent authorities and organizations on the national, regional and local level that contribute to the economic development, social development and spatial development of regions*.

Although the entry into the EU was for the Slovak Republic as well as for the other acceding countries big challenge and opportunity, *differentiation of the member and*

candidate EU countries reflects in various forms and in varying degrees (Kabát, 2004) and as main reason of the natural differentiation we consider natural development differences between countries which is necessary to quantify and directly solve. *Regional disparities represent differences in the level of the socio-economical regional development which are the consequences of its inequality* (Matlovič, R. – Klamár, R. – Matlovičová, K., 2008). According OECD (2011) regional disparity is *significant difference between the rich and poor ones within the one country as well as among countries themselves.* Therefore, it is very important to define suitable indicators, by which it is possible to measure the size or the depth of regional differences.

Samson (2008) recommends following indicators:
- the regional GDP per inhabitant,
- the rate of unemployment,
- the number of job seekers,
- the average montly wage in the region,
- the average income of households in the region.

Analysis of the evaluation of regional disparities of chosen regions is difficult and it is generally evaluated also on the base of the chosen indicators that are subjective choice of ana author. Our analysis of the regional disparities has resulted from the comparation of the chosen indicators: real GDP per inhabitant in EUR, gross wages at current prices in mil. EUR, the state of foreign direct investments in % from GDP, labor productivity per employed person (GDP in PKS per employed person in consideration of EU 27) and rate of unemployment in %. We compare V4 countries and old member states – Germany and France.

As Figure 1 represents, the highest level of the real GDP per inhabitant during the searched period have been reached by Germany and France. Germany has reached average real GDP per inhabitant for the searched period in amount of 27 891 EUR and France 27 245 EUR per inhabitant. Real product per inhabitant produced by V4 countires represents only 27,9 % of the real production of old member states. Significant difference in the production means also the statement that countries that have entered the EU in 2004 are radically poorer than old member states.

If we compare extreme values, all analysed countries have reached their minimum in the first third of the searched period, ie Germany (26 500 EUR.inh[-1]), France (26 400 EUR.inh[-1]), Czech Republic (8 600 EUR.inh[-1]), Slovak Republic (5 800 EUR.inh[-1]), Poland (5 600 EUR.inh[-1]) and Hungary (7 400 EUR.inh[-1]). We have to state that maximum values have achieved those counties which have reached the lowest averages of the real GDP per inhabitant during the searched period, even in 2011and so Slovak Republic (9 200 EUR.inh[-1]) a Poland (8 300 EUR.inh[-1]).

Figure 1: Development of the real GDP per inhabitant in EUR in chosen EU countries in the years 2001-2011.
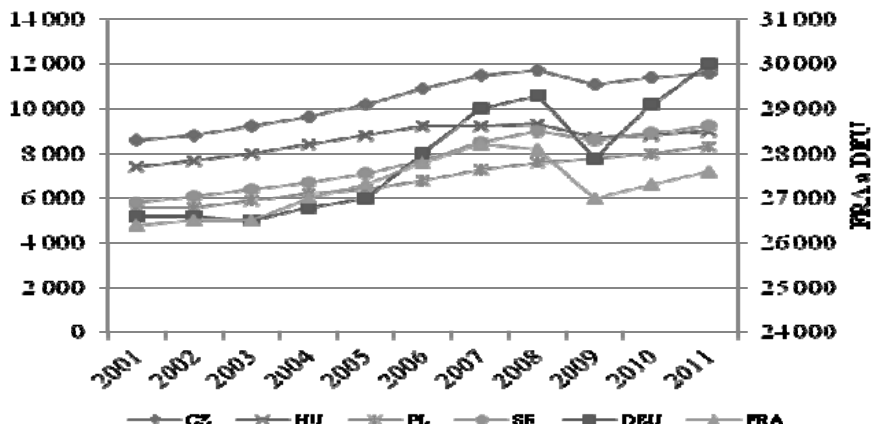
Source: EUROSTAT

Regional disparities that were analysed by chosen statistical indicators identically proved that the highest unequalities between regions in observed countries existed in 2001. Decrease of the indicators has proved gradually compensation between countries. Indicators Qx_i and Kx_i have evaluated the year 2009 as a period when regional disparities were the lowest. Reached values of the coefficient of variation during the searched time horizon have decreased what shows gradually compensation of the inter-regional disparities and in the year 2011 they have reached their minimum.

Table 1: Analysis of the development of the real GDP in chosen EU countries in the years 2001-2011

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
CZ	8 600	8 800	9 200	9 600	10 200	10 900	11 500	11 700	11 100	11 400	11 600
DEU	26 600	26 600	26 500	26 800	27 000	28 000	29 000	29 300	27 900	29 100	30 000
FRA	26 400	26 500	26 500	27 000	27 300	27 800	28 200	28 100	27 000	27 300	27 600
HU	7 400	7 700	8 000	8 400	8 800	9 200	9 200	9 300	8 700	8 800	9 000
PL	5 600	5 600	5 900	6 200	6 400	6 800	7 300	7 600	7 800	8 000	8 300
SR	5 800	6 100	6 400	6 700	7 100	7 700	8 500	9 000	8 600	8 900	9 200
V	0,70	0,68	0,66	0,65	0,63	0,61	0,59	0,58	0,58	0,58	0,57
Qx_i	1,57	1,55	1,50	1,47	1,44	1,41	1,39	1,37	1,32	1,35	1,36
Kx_i	4,75	4,75	4,49	4,35	4,27	4,12	3,97	3,86	3,58	3,64	3,61

Source: EUROSTAT

Indicator gross wages represents total reward for employees with social contributions of employers, i.e. it presents own totals of the payments to the employees and simultaneously it tells about the quality of living of employyes in the country. Indicator in the 2001 in all countries except for Poland (year 2003 – 63 043,7 mil. EUR) has reached it minimum value. It has reached in Germany 916

210 mil. EUR, vo France 575 268,8 mil. EUR, in Czech Republic 21 947,1 mil. EUR, in Hungary 20 239 mil. EUR and in Slovak Republic 7 182,4 mil. EUR. Most countries have reached maximum indicator value in 2011, except for Hungary (38 026,3 mil. EUR) and Poland (118 768 mil. EUR).

Figure 2: Development of gross wages at current prices in mil EUR in chosen EU countries in the years 2001-2011
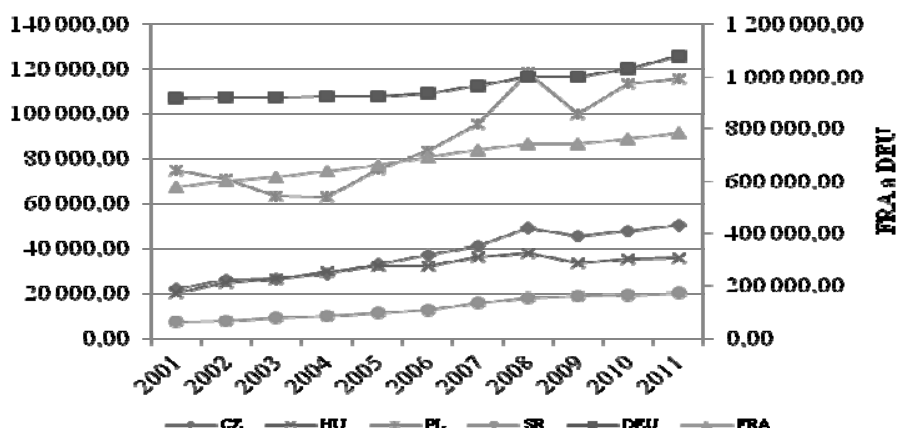
Generally average highest payments are received by employees in Germany (966 389,1 mil. EUR) and the lowest wages are paid to employees in Slovak Republic (13 549,7 mil. EUR). E Gross wage of the Slovak represents only 1,4 % of the German earnings. We can see the highest regional in searched time horizon in the year 2001 (v = 1,31) and on the other sidethe lowest inter-regional differences in the year 2008 (v = 1,20). From this year, disparities have again started to deepen what is obviously negative impact of the economic recession.

Table 2: Analysis of the development of gross wages in chosen EU countries in the years 2001-2011

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
CZ	21 947,1	25 986,0	26 462,0	28 692,2	32 982,0	37 149,9	41 073,2	49 151,0	45 427,7	47 820,4	50 240,0
DEU	916 210,0	922 260,0	922 170,0	926 240,0	923 350,0	935 550,0	965 520,0	1 002 000,0	1 002 810,0	1 032 210,0	1 081 960,0
FRA	576 268,8	600 814,1	616 413,6	639 014,7	662 672,9	692 256,2	720 576,0	743 017,0	743 367,0	760 703,0	782 804,0
HU	20 239,8	24 541,0	26 501,2	29 426,8	32 088,8	32 245,0	36 204,9	38 026,3	33 348,1	35 358,0	35 834,6
PL	74 949,5	70 844,6	63 277,6	63 043,7	75 504,3	83 576,6	95 572,9	118 768,0	100 013,9	113 794,8	115 968,8
SR	7 182,4	7 873,2	8 817,9	9 708,4	11 136,9	12 732,8	15 528,3	18 034,3	18 679,2	19 267,8	20 085,2
v	1,31	1,29	1,30	1,29	1,26	1,24	1,22	1,20	1,22	1,21	1,22
Qxi	3,37	3,32	3,29	3,24	3,15	3,09	3,04	3,00	3,04	3,02	3,05
Kxi	127,56	117,14	104,58	95,41	82,91	73,48	62,18	55,56	53,69	53,57	53,87

Source: EUROSTAT

As Figure 3 shows, V4 countries achieve the highest values of the state of foreign direct investments so we can infer that mentioned countries gain on the cheap and qualified labor force. The highest average volume of the foreign capital has clearly come to the Hungary (60,48 %) and the lowest to Germany (25,60 %).

Figure 3: Development of the state of total FDI in the years 2001-2011 in % from GDP
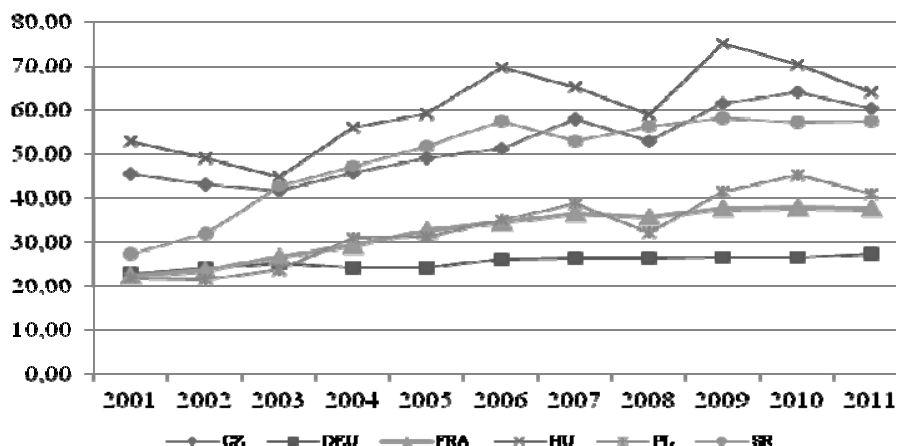
Source: EUROSTAT

We can state that from the point of view of investments inflow, membership in the EU has helped a lot V4 countries. These are poorer countries so in their case we can not talk about significant investments abroad, i.e. important ratio is created just by foreign capital inflow. Foreign capital inflow has clearly positive effect for V4 countries mainly by new job positions and new Technologies. Despite the positive effects that flow to economically less developed countries, indicators $Qx_{I\,a}Kx_i$ show the highest inter-regional differences in the year 2009, when countries achieved the highest inflows of the foreign capital. The value of coefficient of variation though achieved its maximum in the year 2001. Differences between countries are the lowest in the year 2003.

Table 3: Analysis of the development of the state of total FDI in the years 2001-2011 in % from GDP

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
CZ	45,60	43,20	41,70	45,80	49,20	51,30	57,90	52,80	61,40	64,00	60,30
DEU	22,90	24,10	25,30	24,30	24,40	26,20	26,60	26,60	26,80	26,80	27,60
FRA	22,40	23,80	26,80	29,30	32,60	34,60	36,60	35,90	37,70	38,00	37,70
HU	53,00	49,00	44,90	55,90	59,00	69,70	65,30	58,80	75,20	70,40	64,10
PL	22,00	21,80	24,00	31,10	31,40	35,10	38,80	32,20	41,50	45,30	41,10
SR	27,60	31,90	42,80	47,30	51,80	57,40	53,00	56,20	58,10	57,20	57,40
V	0,38	0,32	0,26	0,29	0,30	0,33	0,29	0,29	0,33	0,30	0,28
Qx_i	0,96	0,84	0,61	0,81	0,84	0,95	0,83	0,74	0,97	0,87	0,76
Kx_i	2,41	2,25	1,87	2,30	2,42	2,66	2,45	2,21	2,81	2,63	2,32

Source: EUROSTAT

Indicator labor productivity per employed person is given by the level of GDP in the purchasing power parity per one employee in the national economy. Is is index indicator calculated in relation to EU 27. By analysing this indicator, we can conclude that V4 countries achieved thier minimums in the years 2001 and 2002, i.e. Czech Republic – 67,80, Hungary – 61,60, Poland – 56,30 a Slovak Republic – 60,80. Achieved level of the productivity of labor per employed person has in these countries rising tendency. Only Slovak Republic reported slight decrease of indicator in the year 2011 (from 81,30 to 80,20), what can be connected with the rise of rate of unemployment during last years. On the contrary, old member states achieved their minimums in the years 2008-2009 but they still achieved higher labor productivity per employed person than is average in EU 27 in that year.

Figure 4:Development of the labor productivity in the years 2001-2011, where GDP in PKS per employee, EU 27 = 100
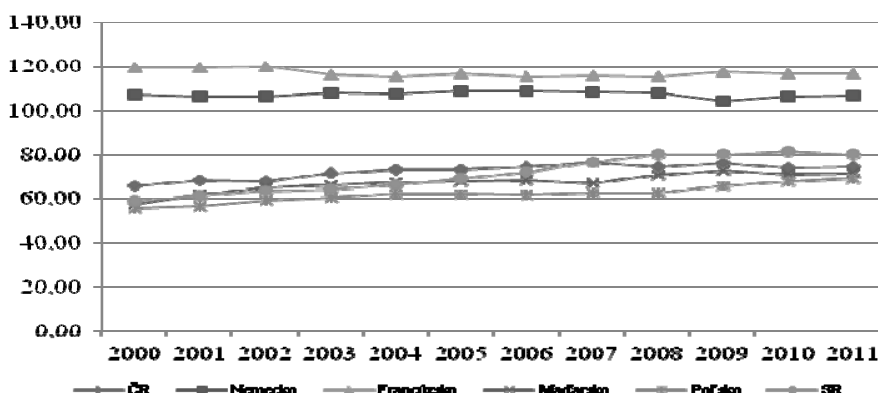
Source: EUROSTAT

Total average value of the labor productivity per employed person in searched time horizon in new member states was at the level of 67,48 of EU 27 average. In old member states the indicator level maintains in analogue period at the level of

112,05. Indicators of the regional disparities evaluation (v = 0,21 in the year 2011) signify the decrease of inter-regional differences.

Table 4: Analysis of the development of labor productivity in the years 2001 – 2011, where GDP in PKS per employee, EU 27 = 100

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
CZ	65,60	67,90	67,80	71,20	73,10	73,10	74,10	76,40	74,20	76,00	73,80	74,10
DEU	107,20	106,30	106,10	108,00	107,70	108,70	108,90	108,50	108,00	104,40	106,20	106,60
FRA	119,50	119,60	120,20	116,40	115,50	116,60	115,50	115,70	115,50	117,40	116,60	116,70
HU	57,10	61,60	64,90	66,10	67,10	67,70	67,90	66,70	70,70	72,50	70,90	71,20
PL	55,50	56,30	59,00	60,30	62,00	61,80	61,20	62,30	62,40	65,50	67,50	68,90
SR	58,40	60,80	63,00	63,80	65,90	68,90	71,80	76,50	79,90	80,10	81,30	80,20
V	0,34	0,31	0,30	0,28	0,26	0,26	0,25	0,24	0,23	0,22	0,22	0,21
Qx_i	0,83	0,80	0,76	0,69	0,65	0,66	0,65	0,63	0,62	0,60	0,57	0,55
Kx_i	2,15	2,12	2,04	1,93	1,86	1,89	1,89	1,86	1,85	1,79	1,73	1,69

Source: EUROSTAT

Increasing of the rate of unemployment is typical sign of economic recession. Economically less developed countries, including V4 countries), unlike the old EU member states, very sensitively react on economic imbalance. As Table 5 shows, radical increase of the rate of unemployment has started in the V4 countries after the year 2008 but in the year 2011we can see slight decrease of indicator.

Figure 5: Development of unemployment in the years 2001-2011 in %
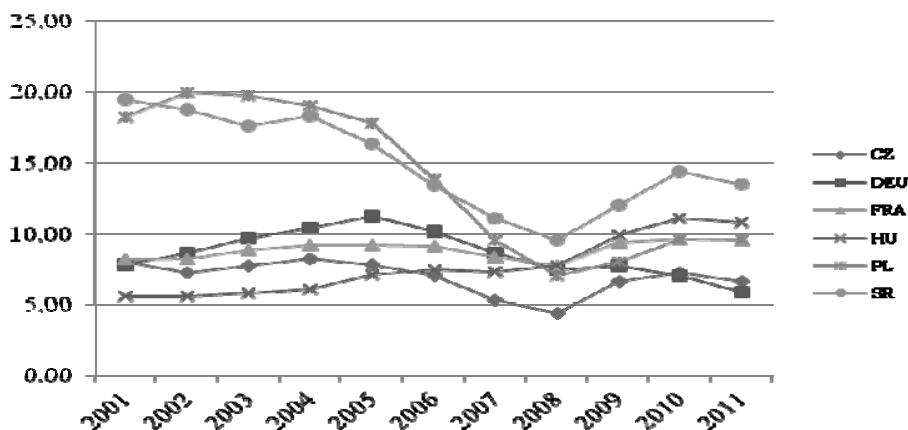
Source: EUROSTAT

In the year 2008, most of analysed countries, except for Germany (7,50%) and Hungary (7,80 %), achvieved minimum value of the rate of unemployment in the searched time horizon – Czech Republic (4,40 %), France (7,80 %), Poland (7,70 %) a Slovak Republic (9,60 %).

Table 5: Analysis of the development of tthe rate of unemployment in the years 2001-2011 in %

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
CZ	8,10	7,30	7,80	8,30	7,90	7,10	5,30	4,40	6,70	7,30	6,70
DEU	7,90	8,70	9,80	10,50	11,30	10,30	8,70	7,50	7,80	7,10	5,90
FRA	8,20	8,30	8,90	9,30	9,30	9,20	8,40	7,80	9,50	9,70	9,60
HU	5,60	5,60	5,80	6,10	7,20	7,50	7,40	7,80	10,00	11,20	10,90
PL	18,30	20,00	19,80	19,10	17,90	13,90	9,60	7,10	8,10	9,70	9,70
SR	19,50	18,80	17,70	18,40	16,40	13,50	11,20	9,60	12,10	14,50	13,60
v	0,49	0,50	0,45	0,42	0,35	0,26	0,22	0,21	0,19	0,25	0,27
Qx_i	1,23	1,26	1,20	1,09	0,92	0,66	0,70	0,71	0,60	0,75	0,82
Kx_i	3,48	3,57	3,41	3,13	2,49	1,96	2,11	2,18	1,81	2,04	2,31

Source: EUROSTAT

The lowest average rate of unemployment in the searched period achieved Czech Republic – 6,99 %. The highest values of the average rate of uneployment achieved Slovak Republic – 15,03 % and Poland – 13,93 %. Analysis if the regional disparities for chosen countries has improved that even the increasing rate of unemployment during the last three analysed years inter-regional differences have been decreasing (v = 0,19).

Overall we can state that by analysed countries is not getting to deepening of the regional disparities. Even the economic recession, inter-regional differences have been minimizing. The only indicator that signifies other tendency is state of foreign direct investments. Indicator is expressed as a percentage from GDP. Although the maximum values of the state od foreign direct We consider monitoring of development of the regional disparities as a very important because of the reason that significant disparities between regions in the country slow down total economic development and it is shown mainly by economically less developed economiesinvestments achieved all analysed countries, regional disparities between countries conversely increase. We have to state that position of the Slovak Republic within the analysed countries is adverse and unflattering. Slovak Republic has been achieving the highestaverage rate of unemployment and the lowest gross wages were paid in this country. On the base of the gained facts, we have to further state that quality of living of the Slovak Republic inhabitants has decreased comparing with the inhabitants of other EU analysed countries.

Súhrn
Sledovanie vývoja regionálnych disparít považujeme za veľmi dôležité a to z toho dôvodu, že výrazné disparity medzi regiónmi v krajine, brzdia celkový rozvoj ekonomiky a prejavuje sa to hlavne u ekonomicky menej vyspelých ekonomík. Celkovo však možno konštatovať, že u analyzovaných krajín nedochádza ku prehlbovaniu regionálnych disparít. Aj napriek ekonomickej recesii, sa medzikrajové rozdiely zmenšujú. Jediným ukazovateľom, ktorý naznačuje opačný trend je stav priamych zahraničných investícií. Ukazovateľ je vyjadrený ako percentuálny podiel z HDP. Aj napriek tomu, že maximálne hodnoty stavu priamych
50

zahraničných investícií dosiahli všetky analyzované krajiny, regionálne disparity medzi krajinami sa naopak zvyšujú. Musíme konštatovať, že postavenie Slovenskej republiky v rámci hodnotených krajín je nepriaznivé a nelichotivé. Slovenská republika dosahuje najvyššiu priemernú mieru nezamestnanosti a v krajine boli vyplácané najnižšie hrubé mzdy a platy. Na základe zistených faktov, musíme ďalej konštatovať, že kvalita života obyvateľov Slovenskej republiky sa zhoršila v porovnaní s obyvateľmi ostatných analyzovaných krajín EÚ.

Príspevok analyzuje vývojové tendencie vybraných ukazovateľov regionálneho rozvoja. Pomocou vybraných štatistických metód hodnotí úroveň regionálnych disparít vo vybraných krajinách. Výberový súbor pozostával z krajín V4 a z vybraných starých členských krajín – Francúzsko a Nemecko.

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Jerzy Łodziński

COMPETITIVENESS SUPPORT OF COMPANIES IN THE SME SECTOR WITHIN THE REGIONAL PROGRAMMES 2007 – 2013

PODPORA KONKURENCIESCHOPNOSTI FIRIEM V SEKTORE MALÝCH A STREDNÝCH PODNIKOV V RÁMCI REGIONÁLNYCH PROGRAMOV 2007 – 2013

Abstract: *Poland's place in the ranking of the most innovative EU countries motivates to take actions in support of innovative activity development, not only in public but mostly in private entities, such as small and medium-sized Polish companies, which are the main power of the national economy. Resources from the Structural Funds, namely, the Regional Operational Programmes are an important source of external investment financing. The article presents the situation of the Polish SME sector concerning the level of implemented innovation as well as the method and the level of the financing.*
Key words: *innovativeness, SME sector, Regional Operational Programmes.*

JEL: O31, O32

Introduction

The economic development of the country is currently dictated by the desire for gaining a knowledge-based economy and having a competitive advantage based on high level of innovation implemented in companies and public entities. Meanwhile, Poland is one of the least innovative countries in the European Union, hence the intensification of implementation of innovative solutions is so important, not only at the level of the whole country but especially at the regional level [1, 2].

Using research results, new conceptions and technologies in significant way influences increment competitiveness of private enterprises, not only in domestic, but also in foreign markets. Moreover, these actions may be crucial for SME survival, which normally do not dispose such potential to implement the innovative ideas as larger companies. Accordingly, the priority is to provide them proper financial support, which ensures access to innovative products and services. Such instruments are inter alia projects based on research and development work, which aim is to fulfill needs of the particular entrepreneur [3,4,5].

The chance to carry this kind of project through in SME sector until recently was significantly limited mainly due to difficulties in obtaining the necessary capital, particularly for high-risky ventures. The expenditures requiring creationof technical elaborations, purchase its own research and development base and implement new equipment were and are high. An effective solution is unrecoverable financial assistance from the Structural Funds and in case of SME sector from the Regional Operational Programmes. Their tasks include financial support for innovation, competitiveness and entrepreneurship for small and medium-sized domestic companies. Objectives and actions for the period 2007 – 2013wereprepared for each

province, which aim is to increase competitiveness, entrepreneurship or environmental protection. Poland received a total of 16 555millions euro to be divided into individual provinces in the period 2007 – 2013.

The situation of the SME sector in 2011

In 2011 the total number of companies registered in Poland according to REGON (the National Official Register of Business Entities) amounted to more than four millions, where [8]:

- Micro-enterprises accounted for 95 %,
- Small enterprises accounted for 4 %,
- Medium enterprises accounted for 0,8 %,
- Large enterprises accounted for 0, 1 %.

all registered companies. Comparing these data with the year 2010, the total number of registered companies diminished by 0, 4 %, only in case of small enterprises reported 0,2 % increase in their number in 2011.

Despite of overall decline, the number of newly created companies in the SME sector in the period 2007 – 2013 has upward tendency. At the same time an amount of companies which resigned from further activitywas comparatively less, what caused that in 2010 the difference between newly created and collapsing entities was significant and indicated a positive changes in the minds of market operators. (Figure 1.)

Figure 1 The share of newly created and liquidated companies in the SME sector in 2007 – 2010
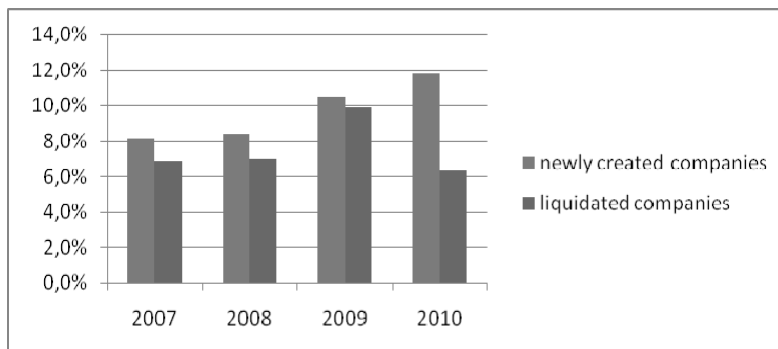
Source: Author's elaborations based on data from GUS.

An additional motivation to focus efforts on theSME sector is its share in country value added gross, which in case of small enterprises accounted for one-third of the total value added, earned by all enterprises according to the REGON register (the National Official Register of Business Entities)(Table 2.)

The data contained in the Table 2 clearly indicate a significant share of the SME sector in creation of value added. Small and medium-sized enterprises together produce 40 % of total value added. A significant improvement of the financial situation of medium and large enterprises is visible by increase of their share in GDP production and decline of this share by micro-enterprises. In case of small

enterprises, the share in GDP is instable and it is difficult to indicate the distinct direction of changes.

Table 2 The share of SME sector in creating value added.

Year	GDP (mln PLN)	Gross Added Value produced by enterprises	
		SME	
		small	medium
2007	1 176 737	30,40%	7,20%
2008	1 275 432	29,90%	7,40%
2009	1 343 366	30,40%	7,90%
2010	1 416 447	29,60%	7,70%

Source: Author's elaborations based on data from GUS.

The SME sector investments in new technologies have an impact on its state and competitiveness in the market, in a sense, determining its survival and share in the creation of value added of the national economy. Currently, the overall innovation rate which indicates the level of use the innovative potential related to owning backup of R&D area is one of the method to assess the relation between cost incurred and obtained effects [9].

The low level of innovation in a country is reflected bythe strong variation between individual provinces. The Table 3 presents the level of innovation in the individual provinces, according to the overall synthetic indicator of innovation.

Table 3 The ranking of Polish provinces according to the level of innovation

1	Mazowieckie
2	Śląskie
3	Dolnośląskie
4	Małopolskie
5	Pomorskie
6	Podkarpackie
7	Wielkopolskie
8	Łódzkie
9	Opolskie
10	Kujawsko-pomorskie
11	Lubelskie
12	Świętokrzyskie
13	Podlaskie
14	Lubuskie
15	Warmińsko-mazurskie
16	Zachodniopomorskie

Source: [9], p. 51.

Mazowieckie province was placed first in the ranking of innovation, according to the overall synthetic indicator of innovation. The next two positions ranked provinces: Śląskie and Dolnośląskie, which also characterize a high innovation potential. The provinces: Lubuskie, Warmińsko-Mazurskie and Zachodnipomorskie have shown the lowest level of using innovative potential.

The method and level of financing have impact on the level of using new technologies and conceptions. There are several key factors which determine the extent and amount of investments in innovative solutions by SME sector:

- competitive pressure,
- demand for (innovative) products/services (perceived by companies),
- absorption potential of companies – the possibility to serve a technology transfer process and effective use of new technologies by the companies (including their own knowledge resources – about the market, environment, technology, a quality of human resources and skill of managing knowledge and information)a quality of managerial staff (experience, education, openness, skill,
- to assess competitive position of a company, strategic planning skills),
- a financial potential of companies [6].

Incurring expenditures on implementation of the innovation is closely related to the ability to be competitive. The enterprises, which have their own research backup, more willingly invest in new technologies, because they do not want to waste the capital expenditure and time, which they spent on searching new solutions and concepts [7].

According to a survey conducted by the Agency for Enterprise Development [6], every third Polish small and medium-sized enterprise finances their investment in innovative solutions, mostly using equity. Among the external sources of financing the projects, every second enterprise decides to contract the commercial credit or use leasing. Only 2 % of interviewed enterprises use public support for their investments in new technologies. This applies both to domestic and foreign sources.

The report also showed that the predisposition to use the external sources of financing are growing in proportion to the size of companies, what means that the medium-sized entities more often use this type of sources. This rule applies to both public and commercial finance units. However, the structure of source of financing the innovative activity of the SME sector does not differs significantly from the structure of financing the other investments.

To support the innovativeness of micro enterprises and the SME sector, granted the endowment in the period 2007 – 2013, which in many cases amounts to less than 8 million PLN. As a part of the Regional Programs, the support involve the investments in micro enterprises and the SME sector, development, growth of competitiveness and innovativeness of these enterprises.   The figure 2 presents the level of financing the innovative projects according to provinces, in compliance with European Regional Development Fund's rules.

Figure 2 The costs of financing the project in particular provinces
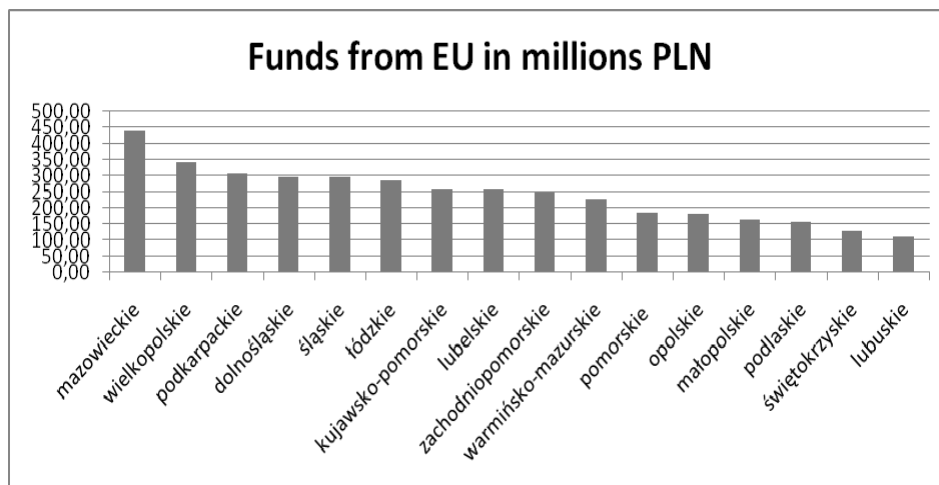
Source: Author's elaborations based on www.funduszeeuropejskie.gov.pl/RPO

The Table 2 contains only those financial means that have been already spent on the development of entrepreneurship, competitiveness and innovation of micro, small and medium-sized Polish enterprises within the confines of the Regional Programmes. According to the graph the biggest part of capital was allocated in the enterprises located in Mazowieckie provinces, what coincides with a high innovative potential of this region. More than a half less received enterprises from provinces: Małopolskie, Podlaskie, Świętokrzyskie i Lubuskie.

Summary
Strong competition and unfavorable conditions in the SME sector result in breaking economy and cause slowing the growth of innovation of a country. In order to activate this type of activity actions oriented around economic development focus on supporting the Polish enterprises to take new challenges concerning innovative activity.
Apart from core funding sources of innovative investments, in recent years, a special role in raising the level of innovation play a Regional Operational Programmes, which support the SME sector in growth of competitiveness, entrepreneurship and innovativeness. The Structural Funds are an important tool to eliminate the barrier of carefulness and indebtedness of enterprises for investment purposes, providing the opportunity for stable economic development of Polish.

Súhrn
Pozícia Poľska v rebríčku najviac inovatívnych krajín EÚ motivuje k prijatiu opatrení na podporu inovačných aktivít vývoja, a to nielen na verejnosti, ale väčšinou u súkromných subjektov ako sú malé a stredne veľké firmy, ktoré sú hlavnou hybnou silou národného hospodárstva. Prostriedky zo štrukturálnych fondov, konkrétne Regionálne operačné programy, sú dôležitým zdrojom externého

financovania investícií. Tento článok podáva prehľad o situácii v sektore malých a stredných podnikov v Poľsku z pohľadu úrovne realizovaných inovácií, spôsobu a úrovne ich financovania.

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Miroslav Malák

IMPLEMENTATION OF KANBAN TO OPTIMIZE THE PRODUCTION

IMPLEMENTÁCIA SYSTÉMU KANBAN V PROCESE OPTIMALIZÁCIE VÝROBY

Abstract: The paper is concerning of implementation of Kanban system and inventories reduction of production system „Alliance Low Range" in laboratory scene by tensile production. The Kanban system is one of the implements of Lean production. Attention is paid to the concrete application of the given system to a particular firm in laboratory scene. The Kanban system is based on general assumptions, which must be, however, adapted to concrete firm's conditions. In selected company, we carried out mapping the actual state. Problem status was found in nine components. We transferred the basic calculations in inventory at the production line at the nine components and the detailed analysis, we chose the most appropriate solution to the problem situation production line tool for lean production – Kanban system.
Key words: Lean production, Kanban system, inventories reduction

Kľúčové slová: Štíhla výroba, systém Kanban, redukcia zásob

JEL: L25

Introduction
Nowadays, when fierce competition forces companies to reduce the amount of their costs and increase the quality of manufactured products, it is necessary to review all activities in an enterprise, and strive to reduce the losses that arise from these activities. Only then can companies gain a competitive advantage and ensure a strong market position. The best method to solve these problems is lean production shows. [4]

The article analyzes the operation of the production system „Alliance Low Range" and the implementation of Kanban to optimize its inventory. The aim is to reduce the amount of excess inventory and thereby reduce the amount of funds that were committed in excess inventory.

Kanban system is among the most technically-advanced concepts in production management. It was developed by the Japanese company Toyota. The main objective of Kanban is to support every stage of production „making the call" that allows no major investments to reduce inventory and improve the accuracy of

performance dates. To achieve this, it must be the design of the production layout to balance production capacity. [6]

The essence of Kanban production control system is „pulling" parts manufacturing process, as it requires installation, without unnecessary work in progress and without unnecessary buffer stores. [11]

Instead of the usual supply line (compressed) principle in which the managing impetus to the movement of material based on the previous production article used pull principle, where the control pulse is a pulse from the next production article. The aim of Kanban production control system is to satisfy customer requirements through continuous short time in production. That is, reduce inventory is the prime objective of the method, but of flexible delivery promptly at any time for the production. [10]

Materials and Methods

Current production system Alliance Low Range, used for assembly components of white goods. Whereas ordered from stock more material than necessary, there occurred a surplus of material supplies, which had to be reduced. Reducing these excess reserves held by promoting the production to the call, i.e. implementing Kanban production system.

In mapping and analyzing the necessary production line Low Range, established the following conclusions:
- amount of material in the production line is unreasonably larger than necessary,
- the large amount of material is placed on a relatively small area, causing congestion and confusion, there may be damage to the material,
- from store a large amount of material, thus undermining external, supplier kanban causing unnecessary financial commitment stocks,
- the accumulation of material takes place mostly at the beginning and the changes occurring to providing confusing information for suppliers, since they add to the supply Kanban. Receive at the beginning of the shift signal to be delivered to a larger volume of material. That, however, is sufficient in the production line for a long time. In this way, suppliers produce larger quantities and create a reserve unnecessarily because they expect more demands.

In mapping was found that on the Low Range experiencing this following losses:
- o the loss of defective products,
- o the losses in stocks.

These losses are the worst losses that may occur when business venture. Any loss to us because the cost increases, which is currently a big risk, since the world is globalized and competition intensifying in the wake. In the future, there will be successful only those companies that will be able to successfully tackle the elimination of losses in all business activities.

Those losses and problems encountered in the production line Low Range for the nine components: front weights, rear weights, down weights, drain hose, inlet hose, corner back brace, corner brace front, top polystyrene, polystyrene bottom.

On the basis of the input data calculations was found in the original inventory production system Alliance Low Range. When calculating the amount of inventories is based on the following input data:

– manufacturing system produces one shift for 1000 pcs. of products,
– the production of one product is used one piece of each component listed in the table,
– production cycle = 0,45 min,
– average waiting time for the batch 0,067 changes,
– average batch processing time is 0,001 changes,
– safety coefficient α = 0,1,
– dimensions of pallets are:
  ▪ (1200 x 800) mm: drain hose, inlet hose, all types of weights,
  ▪ (1150 x 1180) mm: polystyrene top,
  ▪ (1300 x 900) mm: corner brace back,
  ▪ (1100 x 1000) mm: corner brace front, bottom polystyrene.

On the basis of input data when mapping was found by calculating the initial inventory at the production line Low Range. The essence of the future state mapping step is to implement the suggestions for improvement. In this case, the Kanban calculations by which to calculate how many pallets should be in production line to reduce the amount of money tied in stocks and remove other associated problems. But it also had to take care to ensure continuity of production.

The calculation of pallets at the production system is based on the basic formula that has been in the literature [6], referred to as one of the most commonly used formulas:

$$KK = [PDD.(Tč + Ts).(1 + α)]/KP$$

Example of calculation:

$$KK_{Outlet\_hose} = \frac{1000 \cdot (0,067 + 0,001) \cdot (1 + 0,1)}{200} = 0,374 \Rightarrow 1\, pallet$$

*To provide a continuous flow of material, the number of pallets increased by **1 pcs**.* The results of the calculations shown in the following table 1.

Table 1 Calculation of the number of pallets in a future production line

Components	Number of components in pallet [pcs]	Number of pallets at the line [pcs]	Occupied area - actual state [m^2]	The future quantity of pallets [pcs] (calculation)	The future quantity of pallets [pcs] (real state)	Occupied area - future state [m^2]
Outlet hose	200	8	7.68	1	**2**	**1,92**
Water inlet hose	150	4	3.84	1	**2**	**1,92**
Rear corner brace	200	6	7.02	1	**2**	**2,34**
Front corner brace	210	6	6.60	1	**2**	**2,20**
Top polystyrene	60	3	4.07	2	**3**	**4,07**
Bottom polystyrene	54	3	3.30	2	**3**	**3,30**
Front weight	144	4	3.84	1	**2**	**1,92**
Back weight	120	4	3.84	1	**2**	**1,92**
Lower weight	168	5	4.80	1	**2**	**1,92**

Source: own processing

The table below shows the area originally occupied by the pallet at the production line and the area will occupy the implementation of Kanban production. Despite the fact that they had calculated the number of pallets to increase, reaching to some significant savings component surfaces at production line.

Results and Discussion
As the table. 1 shows, the largest area in m^2 saving was achieved by:
- ✓ outlet hose (5,76 m^2),
- ✓ front corner brace (4,40 m^2),
- ✓ rear corner brace (4,68 m^2).

Table 2 shows the original number of components in the mass production line at a quantity that has been made by reducing the number of pallets in line.

Table 2 Overview of the number of pieces of materials in line

Components	Number of pallets at the line [pcs] (actual state)	Number of pallets at the line [pcs] (future state)
Outlet hose	1600	400
Water inlet hose	600	300
Rear corner brace	1200	400
Front corner brace	1260	420
Top polystyrene	180	180
Bottom polystyrene	162	162
Front weight	576	288
Back weight	480	240
Lower weight	840	336

Source: own processing

The original stocks in the production system are simply illustrated so as to represent the actual state (Fig. 1).

Figure 1 Original (actual) production inventory production system Alliance Low Range
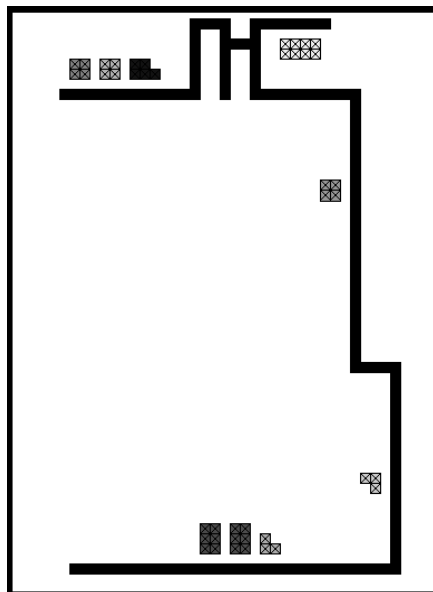
Source: own processing

Reducing inventory of Alliance Low Range system after implementation Kanban with a fixed number of pallets is shown in Fig. Second Red represents a place that before the production Kanban occupy excess pallets. As Fig. 2 show a significant saving to the area.

Figure 2 Stocks Alliance Low Range production system after the implementation of Kanban
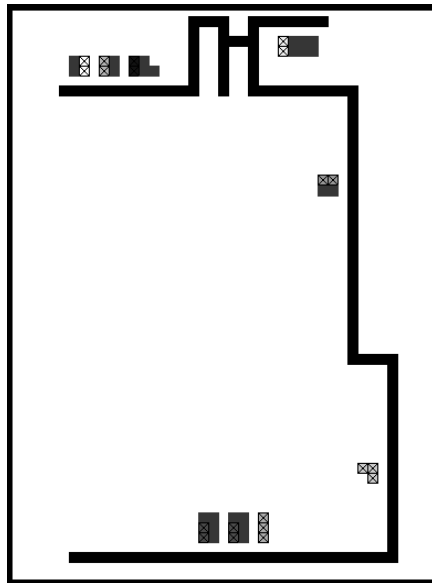
Description:

 - Front weight   - Lower weight   - Water inlet hose

 - Back weight   - Outlet hose   - Bottom polystyrene

 - Front corner brace   - Rear corner brace   - Top polystyrene

Source: own processing

Summary

The current times call for quality control of production, reaching the lowest cost competitive products. In the fierce competitive struggle for world markets, companies must prove to react flexibly to customer requirements. [3]

The above tables and graphs show that it is a significant reduction in inventory in the production line Alliance Low Range. The specific value of funds that have been committed in excess reserves would be found if the re-calculated how much the company selected prior to the introduction of Kanban pay for excess pallets of those components (which are unnecessarily purchased and brought from the warehouse to the production line).

With the implementation of Kanban management system is also related to the creation of conditions which make the system can be put into practice. First, it was necessary that at all levels of the company workers were identified with the philosophy of lean manufacturing and Kanban management system. It was

necessary to conduct staff training, which will involve the production Kanban. Finally, it was necessary to make horizontal markings flooring, installation of traffic lights and construction of rotating equipment.

Implementation of Kanban management system for production line Low Range, we were able to optimize inventory in this line. We managed to achieve considerable savings in interest in the production line (in some cases up to 75%), so we not only reduced the amount of funds committed in stock, but we have also achieved reduction of losses that have occurred on the production line. The company is able to implement the production Kanban respond more flexibly to customer requirements.

If the Kanban management system in a completely nezautomatizuje, we conduct regular audits. Even after automating recommend regular monitoring which allows the company will be able to make continuous improvements in the current state of the production line, and can prevent or eliminate any problems that may, when the production line Low Range arise.

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TAX MIMICKING THEORETICAL BACKGROUND AND IMPLICATIONS WITHIN THE LOCALITIES

TEORETICKE VÝCHODISKA A IMPLIKACIE DANOVEHO NAPODOBNOVANIA SA MUNICIPALIT

Abstract: *Tax setting is one of the most important instruments how to influence the socio – economic development of the municipality. However, it is often determined also by the situation and socio-economic development in the neighbouring municipality or by the political cycle. Elected political representatives deal with several circumstances in the tax setting decision- making process. Many economists perceive this fact and their aim is to identify potential strategic interactions in the local elected representatives' behaviour, which can eventuate in the tax mimicking on the local (municipal) level of government. In the SR there is an absence of such kind of research. In this article, the resemblance among Eastern Slovakia county seat´s tax assessment is shown through the cluster analysis. It could reveal some potential occurrence of mimicking. The article is published within the project VEGA 1/1195/12.*

*Key words***:** *local government, tax mimicking, tax revenues, tax rates, tax competition, yardstick competition*

Introduction

Decision-making process concerning an amount of a tax rate, performed by municipalities, can have a nature of a strategic behaviourism, the manifestation of which can be for instance the so-called tax mimicking each other when deciding about the amount of a tax rate. One can distinguish two types of the tax mimicking (see also Figure 1):

1 tax competition, which in quest of attracting mobile tax base causes reduction of tax rates to such a level that leads to an underprovision of public goods.

2 yardstick competition (political competition of gaining the power), where the information asymmetry between voters and political (elected) representatives causes that the voters compare tax rates of their municipality with the tax rates of other municipalities, while they do not take into account real costs of supplying public goods since they do not have an access to this kind of information. Politicians mimic the tax rates of neighbouring municipalities in order to be elected (or re-elected). External studies confirm that tax mimicking has an influence over tax policy of municipalities and thus leads to inefficaciousness when supplying the public goods.

Figure 1 Forms of tax mimicking

```
                    ┌─────────────┐
                    │     Tax     │
                    │  mimicking  │
                    └─────────────┘
                     ╱           ╲
                    ╱             ╲
       ┌─────────────┐           ┌─────────────┐
       │     Tax     │           │  Yardstick  │
       │ competition │           │ competition │
       ├─────────────┤           ├─────────────┤
       │ Aim to      │           │ Political   │
       │ attract the │           │ agenda with │
       │ free mobile │           │ aim to be re-│
       │ tax base    │           │ elected     │
       └─────────────┘           └─────────────┘
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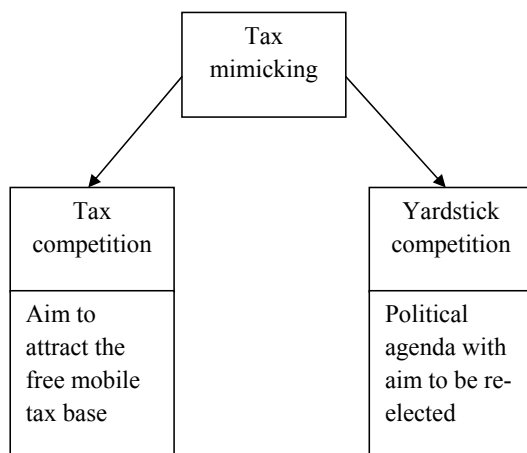
Source: own elaboration

Theoretical Background

Nowadays, the most discussed topic within the field of financing the municipalities is the topic of a shortage of financial means, which makes it impossible for sectors of municipalities, especially for sectors of local government to supply some of the public goods. Emergence of such a situation is often ascribed to economic crisis.

There are several reasons why municipalities lack financial means. Each municipality is politically governed and all the economic issues are being decided on politically. One of the most important tools concerning the management of public finances, on the lowest governmental levels, are taxes.

Local tax policy covers the decision-making process, process of setting the tax base as well as the process of setting the tax rates. We speak about those local taxes where localities posses 100% of tax setting and tax authority. Therefore, when we speak about the tax policy at the community level, most commonly we should think of deciding on the amount of real estate tax rates by the localities. Naturally, the scope of tax authority varies according to the country and to its juridical definition of the locality.

The reason why localities were given a "free hand" in deciding on local tax rates was, apart from other reasons, to increase frugality and transparency of dealing with public finances on the local level.

This idea corresponds to the principles of the so-called *Decentralization theorem* introduced by *Oates (1972*) where public goods are supplied with respect to the local needs and particularities and which are the most known to the elected representatives of local governments.

At the same time, these elected representatives are still under the control of the inhabitants (voters) of the particular locality, what makes them to be aware of their decisions and actions. Their primary goal is, however, maximization of their own utility in the form of being re-elected (*Leviathan hypothesis, Brennan and Buchan (1979)*). Following their own goals allows them to act strategically.

The essence of tax mimicking

As *Case (1993) or Besley and Case (1995)* mention, strategic behaviourism of elected representatives of the local governments is allowed by the presence of information asymmetry, which exists between them and the voters. Elected representatives have better information about how much the provision of standard amount of public goods costs in a given locality (municipality). They also know how many financial means they need to give from their own sources. Thus, they know what their income in the form of tax yields should be – what mean that they know how to set the tax rates.

Voters do not know appropriate tax rates, but they are able to compare how much public goods is provided for certain amount of taxes in the neighbouring locality. If an elected apparatus of the municipality behaves like "Leviathan" and increases tax rates to the maximum, just to ensure the highest possible utility; there is a risk that the voters, who are able to compare the amount of public goods and the amount of tax rates in the neighbouring localities, will not be satisfied with such a situation and will search for a different option in the future election.

Elected representatives' conscious of the fact that the voters will compare the situation of the particular locality with the situation of the neighbouring locality can take the strategic stand and mimic the tax rates of the neighbouring localities.

However, it is important to note that mimicking the tax rates can also be present in a case when municipalities compete for mobile tax base, i.e. when talking about tax competition. Neither yardstick competition, not tax competition, leads to optimal deciding on the amount of tax rates and on the amount of the public goods provided by the elected representatives.

Most of the modern studies (as *Bordignon, Cerniglia and Revelli (2003), Allers and Elhorst (2005)* or *Delgado and Mayor (2011)*) state that tax mimicking concerns rather yardstick competition then tax competition.

State of the Art

Case (1993) finds out, that in the USA the tax rates are influenced by the neighbouring ones in such a case when the elected representative can be re-elected. It means that the level of tax rates is not influenced only by the economic factors, but also by the political calculations. Here, the residents – taxpayers do not know whether changes in tax rates are necessary. Taxpayers cannot estimate real costs of public goods provided by their locality (or state), in this case they can only compare taxes, which they have to pay, with those in the neighbouring locality (state).

In Case ´s study, the econometrical model involves explanatory variables as tax liability in own state, tax liability in the neighbouring state, state (government) income, unemployment rate and population structure. The dependent variable is whether the governor is defeated (=1) or re-elected (=0). The Table 1 shows its partial results.

Table 1: Gubernatorial defeat 1979 – 1988, probit estimation according to Case (1993)

Variable	Income category		
	$25,000	$40,000	$60,000
Change in tax liability	0,0032 (0,0019)	0,0012 (0,0010)	0,0004 (0,0005)
Change in neighbours´ tax liability	-0,0048 (0,0031)	-0,0031 (0,0017)	-0,0018 (0,0010)
State income per capita	-0,0008 (0,0004)	-0,0008 (0,0004)	-0,0008 (0,0004)
State income, lagged	0,0008 (0,0004)	0,0009 (0,0004)	0,0009 (0,0004)
State unemployment rate	0,0926 (0,1054)	0,0832 (0,1060)	0,0760 (0,1060)
State unemployment rate, lagged	-0,0167 (0,1097)	-0,0015 (0,116)	0,0111 (0,1108)
Number of observations	119	119	119

Source: Case (1993), p.137, t-statistics in parentheses

Later, *Besley and Case (1995)* declare that the probability that the US governor will be unseated increases as the state tax rises, and decreases as the tax rises in neighbouring states. That is to say, that the taxpayers are more willing to tolerate tax rising providing that the taxes rise in the neighbouring state as well.

Authors proceeded in their research similarly as in the previous case. They divided US states into groups according to their revenues and they analysed home tax rates and neighbouring tax rates considering also the unemployment rate, the year and the result of elections. Their further results reveal that if the unemployment rate increases, the probability that the governor will not be re-elected is increases as well. The increase of the unemployment rate in the neighbouring state does not have any influence on this process. Other results show the positive impact of the increase of the state revenue per capita on the chance of the candidate´s re-election.

Other variable included in the estimation is the candidate´s age and the investigation indicates that there exists its influence on the re-election possibility – older candidates have lower chance to be re-elected. Dependent variable in this model is - governor defeated or retired. Results are mentioned in the Table 2.

Table 2: Estimation of Incumbent Defeat 1977 – 1988 according to Besley and Case (1995)

Variable	Income = $40,000				Income = $100,000			
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
Own tax change	0,0004 (1,44)				0,0001 (1,84)			
Own tax change		0,0022 (1,56)				0,0006 (1,67)		
Own tax change			0,0015 (1,57)				0,0005 (1,80)	
Neighbour´s tax change	-0,0012 (1,94)	-0,0014 (1,80)	-0,0013 (1,94)		-0,0005 (2,85)	-0,0007 (2,17)	-0,0007 (2,82)	
Unanticipated own tax change				0,0004 (1,35)				0,0001 (1,58)
Unanticipated neighbours´ tax change				-0,0008 (1,43)				-0,0004 (2,31)

Δ State income per capita ($1,000´s)	-0,123 (0,79)	-0,005 (0,02)	-0,052 (0,29)	-0,144 (0,93)	-0,214 (1,42)	-0,286 (1,55)	-0,280 (1,56)	-0,216 (1,40)
Δ Neighbouring state´s income per capita ($1,000´s)	-0,089 (0,52)	-0,104 (0,47)	-0,098 (0,51)	-0,048 (0,28)	-0,003 (0,02)	0,137 (0,61)	0,124 (0,58)	0,008 (0,05)
Δ State´s unemployment rate	0,082 (1,76)	0,088 (1,48)	0,085 (1,65)	0,088 (1,87)	0,069 (150)	0,043 (0,76)	0,046 (0,83)	0,083 (1,79)
Δ Neighbouring state´s unemployment rate	-0,067 (1,17)	-0,059 (0,80)	-0,062 (0,97)	-0,078 (1,35)	-0,045 (0,79)	-0,011 (0,16)	-0,014 (0,21)	-0,073 (1,28)
Δ Total state debt ($1,000´s)	-0,236 (0,69)	-6,77 (1,24)	-0,502 (1,15)	-0,249 (0,73)	-0,317 (0,95)	-0,739 (1,45)	-0,700 (1,47)	-0,317 (0,93)
Δ Total neighbouring state debt ($1,000´s)	0,701 (1,48)	1,354 (1,74)	1,095 (1,77)	0,790 (1,48)	0,724 (1,58)	1,087 (1,80)	0,001 (1,82)	0,821 (1,76)
Governor´s age	0,024 (3,44)	0,022 (2,48)	0,023 (2,94)	0,023 (3,25)	0,025 (3,61)	0,022 (2,76)	0,023 (2,85)	0,023 (3,56)
Number of observations	85	85	85	85	85	85	85	85
(p value for F statistics)	0,716				0,774			

Source: Besley and Case (1995), p.35, t-statistics in parentheses

Revelli (2002) mentions that tax increase reduces the popularity of political incumbents in English districts, while tax increase in the neighbouring districts raise this popularity. In his panel data research, he analyses also the influence of the candidate´s party affiliation on the election results. He reveals higher chances to be re-elected for the candidates of the same party as the Prime Minister is.

Solé Ollé (2003) has also searched for party effects; the impact of the left – wing and right – wing parties in Spain is analysed. In his study, he explicates the relationship between electoral responsibility and tax mimicking. He states that tax mimicking among Spanish local governments appears only in the election years.

The inherence of the tax mimicking and existing relation between electoral responsibility and tax mimicking is here confirmed. Tax rates increase and the reaction on tax rates in neighbouring locality decrease in the case of left – wing governance. On the other hand, coalition does not tax massively, but mimics more as it is in the case of one party governance.

Bordignon, Cerniglia and Revelli (2003) analyse fiscal interactions resulting from the yardstick competition in Italian municipalities. They find out that strategic behaviour of political incumbent - business property tax mimicking among Italian cities - exists only in those cities where current mayors would like to be re-elected (dummy variable same mayor runs). Their partial results are shown in Table 3, the dependent variable is share of the vote got by the incumbent government at elections held at a given election year (1999 or 2000). Here, the dummy variable left – wing coalition is also significant.

Table 3: Popularity equation according to Bordignon, Cerniglia and Revelli (2003), impact of own and neighbours´ property tax rates

	(1)	(2)	(3)
constant	25,591 (1,02)	31,244 (0,85)	17,404*** (2,72)
Share of the vote [t-1]	0,456*** (4,00)	0,450*** (4,00)	0,454*** (4,02)
Dummy (same mayor runs = incumbency advantage)	6,390*** (2,35)	6,041** (2,19)	6,195*** (2,24)
Dummy (right – wing coalition)	3,848 (0,57)	3,493 (0,53)	4,204 (0,64)
Dummy (left – wing coalition)	8,326* (1,45)	7,523* (1,32)	8,519* (1,50)
Own business property tax	-0,744 (0,36)		
Neighbours´ business property tax	-0,627 (0,18)		
Predicted own business property tax		4,444 (0,89)	
Predicted neighbours´ business property tax		-6,839 (1,04)	
Unpredicted own business property tax			-1,252 (0,60)
Unpredicted neighbours´ business property tax			1,088 (0,32)
Number of observations	97	97	97

Source: Bordignon, Cerniglia and Revelli (2003), p.24, t-statistics in parentheses

Research conditions in the SR practice

Municipalities in the Slovak Republic (SR) set tax rates of municipal taxes autonomously according to the legal framework (Act on Municipal Taxes, no. 582/2004). In the SR, tax rates of such types are set annually by the General binding regulation. The reason why municipalities were given a "free hand" in deciding on local tax rates was, apart from other reasons, to increase frugality and transparency of dealing with public finances on the local level.

Currently in the SR, tax revenues of municipal budget consist of revenues from the shared tax and own tax revenues. Own tax revenues contain revenues from the real estate tax and other municipal taxes mentioned hereinafter. The evidence shows (see *Žárska and Kozovský, 2008, Horváthová, 2009*) that the real estate tax revenues present one third of the total municipal tax revenues and other municipal taxes present only 20% of their tax revenues. Shared tax revenues, where municipalities do not have the power to tax, fulfil the biggest part of municipal tax revenues. Under these conditions, the tax mimicking could cover only the mimicking in setting the real estate tax rates and other municipal tax rates, which are not so profitable.

The real estate tax includes the tax from flats (flats and no flat space), land (arable land, gardens, forestland, build ground, etc.) and buildings (buildings for living, cottages, industrial buildings, buildings for business, etc.).

Other municipal taxes are tax on dogs (the rate differ whether the dog lives in a house, flat, or in the business area) tax on accommodation, tax on usage of public place (including tax on booths, sun decks, parking, rigger, circus, stockyard), tax on

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non prize play machines (bowling, computer games, jukebox), tax on vendors and fee for the waste (the tax differ for the physical and legal bodies).

The econometric investigation using the panel data and regression analysis similar to those as in *Besley and Case (1995) or Bordignon, Cerniglia and Revelli (2003)* is in the SR conditions braked by the lack of available and relevant data – absence of relevant database, averseness to cooperate from the municipal representatives side and stationary time series (tax rates do not change every year.)

Despite of these barriers, the aim of the following research is to show real similarities in the municipal tax rates assessment among 20 neighbouring county seats of Eastern Slovakia through the cluster analysis. It is needed to mention, that cluster analysis can not reveal the tax mimicking among municipalities, it can just show the final resemblance of the municipalities according to their tax assessment. Therefore, the clustering provides static view on the problem in the question.

Methods and data

Data are collected on base of General binding regulations published in 2012 on municipal web sites. This research cover more than 38 different municipal tax rates of 20 municipalities of Eastern Slovakia, which are not proximate neighbours, but they are neighbouring county seats.

The method used to reveal the resemblance in the tax rate setting among neighbouring county seats is clustering, which serves to finding out similarities among analyzed objects. Clusters are groups of objects that are similar according to chosen variables. The main principle of clustering is to obtain the highest possible homogeneity inside of the group and the highest heterogeneity among different groups. In this paper, the hierarchical clustering based on Euclidean distance and Ward method is used. The data are analyzed through the statistical program R. The pre - prepared dataset includes tax rates and non-financial indicator population.

Results

The cluster analysis process has divided 20 objects (municipalities) into several clusters. Visual revision of cluster dendrogram (see Figure 2) indicates seven clusters as optimum. Three clusters contain only one object – cities of regional importance – Košice, Prešov and Poprad. These cities have devoted as independent clusters. Other clusters have more members as shows Figure 2 and Table 4.

Figure 2: Cluster Dendrogram
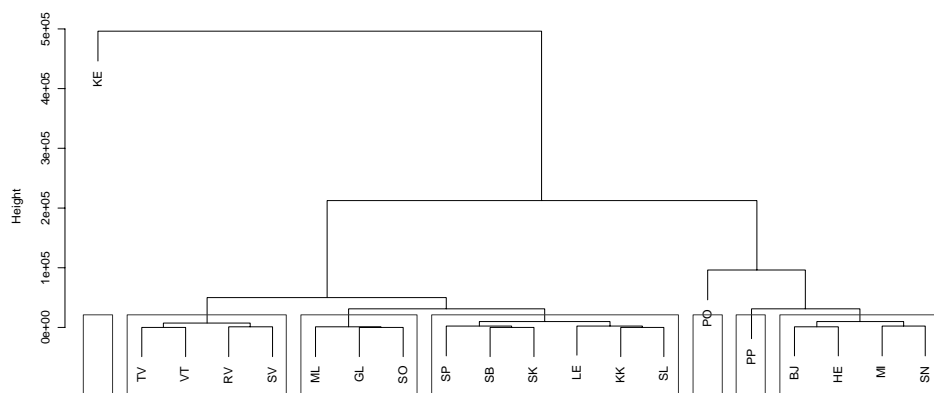
Source: output from the cluster analysis, program R

Legend: KE – Košice, TV – Trebišov, VT – Vranov nad Topľou, RV – Rožňava, SV – Snina, ML – Medzilaborce, GL – Gelnica, SO – Sobrance, SP – Stropkov, SB – Sainov, SK – Svidnik, LE – Levoča, KK – Kežmarok, SL – Stará Ľubovňa, PO – Prešov, PP – Poprad, BJ – Bardejov, HE – Humenné, MI – Michalovce, SN – Spišská Nová Ves

Table 4: Members of clusters, neighbours marked as bold

1.cluster	2.cluster	3.cluster	4.cluster	5.cluster	6.cluster	7.cluster
Košice	**Trebišov Vranov nad Topľou** Rožňava Snina	Medzilaborce Gelnica Sobrance	**Stropkov** Sabinov **Svidník** Levoča Kežmarok Stará Ľubovňa	Prešov	Poprad	Bardejov **Humenné Michalovce** Spišská Nová Ves

Source: own elaboration

As the Table 4 shows, in the second cluster there are four members (further divided into two smaller groups) and two of them (Trebišov and Vranov nad Topľou) are neighbouring county seats. We can claim that there is certain homogeneity and consequently resemblance between them. It means that they have similar tax assessment – their tax rates are similarly set. In the fourth cluster there are also two sub – groups, where Stropkov´s tax assessment resemble to its neighbour´s - Svidník´s, and Levoča, Kežmarok and Stará Ľubovňa as neighbours resemble too. In the last cluster, the tax assessment is similar between neighbours Humenné and Michalovce. Cities Košice, Prešov and Poprad differ from other cities according to various factors as their regional importance, position reasoning from the number of inhabitants, corresponding size of their tax base and the rate of attractiveness for the mobile tax base (entrepreneurs).

Conclusion

A tax power of local governments represents an important instrument to achieve local goals including local budget policy, tax policy, socio – economic development of the locality and political goals.

Flows of the local tax rates can be influenced by several factors. Economic factors involve local competition for the free mobile tax base, i.e. tax competition among localities. One of the most important aspects in the tax competition among localities is the monitoring of tax rates in neighbouring localities. The mechanism of the tax competition is simple. If the neighbouring locality has lower tax rates, the home locality decreases tax rates under the level of the neighbouring ´s tax rates. In this case, the proceeding tax competition could be considered as an expression of the tax mimicking process.

Besides these economic factors, political factors are important as well. Nowadays, political factors significantly interfere to almost all economic processes. Political operating grows in the period before elections, when the political incumbent´s calculations cause strategic movements in tax rates setting.

The purpose of such behaviour is clear – to be popular and to win the elections or to be re-elected. To deal with the electors preferences the candidates covered in the re-election process often mimic the others behaviour even in the process of the tax setting. The evidence of foreign empirical studies confirms that the moving force for the tax mimicking is more frequently the ambition to be re-elected known as yardstick competition than the tax competition.

Unfortunately, there is an absence of such kind of research in the SR. In consideration of some difficulties in relevant data inquiries, this article use a cluster analysis, which can not reveal strategic tax mimicking of municipalities, but it gives a view on resemblance of neighbouring municipalities (in this case as municipalities are county seats of Eastern Slovakia) according to their tax assessment. In this research, it shows some examples of resemblances in municipal tax assessment regarding the geographic position of the municipalities.

Zhrnutie

Dosahovanie cieľov v oblasti municipálnej rozpočtovej politiky, daňovej politiky, socio – ekonomického rozvoja municipality alebo lokálne politické ciele, je možné prostredníctvom významného nástroja v rukách municipálnej samosprávy, ktorým je právo zdaňovať.

Daňové sadzby municipalít môžu byť ovplyvnené rôznymi faktormi. Ekonomické faktory zahŕňajú municipálnu (lokálnu) súťaž o voľnú mobilnú daňovú základňu, pričom ide o daňovú konkurenciu medzi municipalitami. Významným aspektom daňovej konkurencie medzi municipalitami je monitorovanie vývoja alebo nastavenia daňových sadzieb v susedných lokalitách, resp. v tých lokalitách, ktoré sú účastníkmi daňovej konkurencie. Mechanizmus daňovej konkurencie je pritom jednoduchý. Keď má susedná municipalita nižšie daňové sadzby, domáca municipalita zníži daňové sadzby pod úroveň daňových sadzieb susednej municipality. V tomto prípade je možné prebiehajúci proces daňovej konkurencie považovať za prejav napodobňovania daňových sadzieb.

Popri ekonomických faktoroch sú nemenej dôležité aj politické faktory, ktoré v súčasnosti významne vstupujú takmer do všetkých ekonomických procesov. Politická činnosť zväčša silnie s príchodom volieb, municipálnu úroveň vlády nevynímajúc. Vtedy politické kalkulácie spôsobujú strategické pohyby v stanovovaní daňových sadzieb. Zámer takéhoto správania je zrejmý – byť populárny, následne vyhrať voľby resp. byť znovuzvolený. V snahe ustáť preferencie voličov, kandidáti podliehajúci procesu znovuzvolenia často napodobňujú správanie sa iných, dokonca aj v procesoch stanovovania daňových sadzieb. Práve snaha o znovuzvolenie ako politický proces je častejšou príčinou daňového napodobňovania sa ako samotná daňová konkurencia, čo potvrdzujú aj mnohé zahraničné empirické štúdie.

Žiaľ v podmienkach SR tento druh výskumu zatiaľ absentuje. Vzhľadom na niektoré ťažkosti pri získavaní relevantných údajov využíva tento článok zhlukovú analýzu, ktorá síce neumožňuje odhaliť strategické napodobňovanie sa miestnych samospráv pri určovaní daňových sadzieb, podáva však pohľad na podobnosť susediacich miestnych samospráv (v tomto prípade okresných miest východného Slovenska) v tom, v akej výške stanovili svoje miestne dane. V tomto prípade odhaľuje niekoľko prípadov podobnosti v stanovení miestnych daní pri zohľadnení geografickej polohy samosprávy.

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THE DEVELOPMENT OF VALUE ADDED TAX IN EU MEMBER STATES

VÝVOJ DANE Z PRIDANEJ HODNOTY V ČLENSKÝCH ŠTÁTOCH EÚ

Abstract: From 1.1.1987 value added tax is the only general indirect tax on all EU member countries. Value added tax is a general tax on consumption applied to goods and services, which is independent of the number of transactions carried out during the production and distribution of goods or services to be sold. The article deals with the development of VAT in the EU up to the present, when the tax harmonization is in Union very current issue. Next the article explores the different VAT rates in all Member States, their evolution over time and analyzes the situation in the field of VAT collection using the VAT revenue ratio indicator.
Key words: VAT, VAT revenue ratio, VAT rate, European Union

Introduction
Value added tax (VAT) is a general tax on consumption applied to commercial activities involving the production and distribution of goods and the provision of services. The common system of VAT in the European Union applies to goods and services bought and sold for consumption within the EU. The tax is calculated on the basis of the value added to goods and services at each stage of production and of the distribution chain. The tax is collected through a system of partial payments which allows taxable persons (firms identified for VAT) to deduct from their VAT accounts the amount of tax which they have paid to other taxable persons on their purchases for commercial purposes during the preceding stage. This mechanism means that the tax is neutral, irrespective of the number of transactions. [1]
Value added tax was first introduced in Europe in 1954, in France. In 1967, the Member States of the European Economic Community, as it was then, agreed to replace their national turnover tax systems with a common VAT system. [2, p.3]

Material and methods
After a period of relative stability between 1996 and 2008, the average standard rate of VAT has started to rise again since 2008, suggesting that many countries have increased their VAT rates to consolidate their budgets. [7, p.15]
Most of countries have one or more reduced rate (Tab. 1) generally applied to basic essentials such as medical and hospital care, food, water supplies and to activities that are considered socially desirable. One of the reason for the introduction of a differentiated rates structure is the promotion of tax equity or to stimulate

consumption of „merit goods" (e.g. cultural products and education) and goods with positive externalities (e.g. energy-saving appliances). The reasons for these reduced rates are likely to be rooted in a country's socio-economic history, but their validity and their capacity to meet their objectives at an appropriate cost may be questionable. [7, p.15]

In the Study of Copenhagen Economics [2, p.5] a broad based VAT system, ideally with a single rate, would be quite close to the ideal of a pure consumption tax that minimizes compliance costs. However, in the EU, the standard rate covers only about two thirds of total consumption, with the remaining one third subject to different exemptions or reduced rates.

Table 1: Value added tax rates in EU countries in 2012 in %

Country	Standard VAT	Reduced VAT	Super reduced VAT
Austria	**20,0**	**10,0**	**10,0**
Belgium	21,0	12,0	6,0
Bulgaria	**20,0**	**9,0**	**9,0**
Cyprus	17,0	8,0	5,0
Czech Republic	**20,0**	**14,0**	**14,0**
Denmark	25,0	25,0	25,0
Estonia	**20,0**	**9,0**	**9,0**
Finland	23,0	13,0	9,0
France	**19,6**	**7,00**	**2,1**
Germany	19,0	7,0	7,0
Greece	**23,0**	**13,0**	**6,5**
Hungary	27,0	18,0	5,0
Ireland	**23,0**	**13,5**	**4,8**
Italy	21,0	10,0	4,0
Latvia	**21,0**	**12,0**	**12,0**
Lithuania	21,0	9,0	5,0
Luxembourg	**15,0**	**12,0**	**3,0**
Malta	18,0	7,0	5,0
Netherlands	**19,0**	**6,0**	**6,0**
Poland	23,0	8,0	5,0
Portugal	**23,0**	**13,0**	**6,0**
Romania	24,0	9,0	5,0
Slovakia	**20,0**	**10,0**	**10,0**
Slovenia	20,0	8,5	8,5
Spain	**18,0**	**8,0**	**4,0**
Sweden	25,0	12,0	6,0
United Kingdom	**20,0**	**5,0**	**5,0**

Source: Taxation trends in European Union 2012 [3]

The VAT Revenue Ratio

Given the diversity in the implementation of VAT between countries, it is reasonable to consider the influence of these features on the revenue performance of

VAT systems. One tool considered as an appropriate indicator of such a performance is the VAT Revenue Ratio. [7]

The VAT Revenue Ratio consists of actual VAT revenues in percentage of GDP (VAT_{rev}) divided by the product of the VAT standard rate (VAT_{rate}) and net final consumption (in % of GDP), i.e. final consumption expenditure minus VAT receipts:

$$VAT \text{ Revenue Ratio} = \frac{VAT_{rev}}{VAT_{rate} \text{ (Final consumption expenditure} - VAT_{rev})} \tag{1}$$

Results and Discussion

The lowest standard VAT rate in the year 2012 was in Luxembourg with the rate of 15%, following by Cyprus with 17%. The highest standard VAT rate was in Hungary with the rate of 27%, following by Denmark and Sweden with 25%. The difference between the standard VAT rate in Hungary and in Luxembourg accounts for 12 percentage points and the standard VAT rate in Luxembourg accounts for only 56% of the standard VAT rate in Hungary.

Most of the EU countries (26) use reduced VAT rate and 16 of them apply also super reduced VAT rate to selected products and services. The only exception is Denmark with the only one VAT rate 25% for all products and services. The reduced VAT rate varies from 5% in United Kingdom to 14% in Czech Republic. The largest difference between the VAT rates in one country can be seen in France where the super reduced VAT rate accounts for only 11% of the standard VAT rate. France has also the lowest super reduced VAT rate from all EU countries with 2,1%.

Table 2: Standard VAT rates changes from 2006 - 2012 in %

Country	2006	2012
Austria	**20,0**	**20,0**
Belgium	21,0	21,0
Bulgaria	**20,0**	**20,0**
Cyprus	15,0	17,0
Czech Republic	**19,0**	**20,0**
Denmark	25,0	25,0
Estonia	**18,0**	**20,0**
Finland	22,0	23,0
France	**19,6**	**19,6**
Germany	16,0	19,0
Greece	**19,0**	**23,0**
Hungary	20,0	27,0
Ireland	**21,0**	**23,0**
Italy	20,0	21,0
Latvia	**18,0**	**22,0**
Lithuania	18,0	21,0
Luxembourg	**15,0**	**15,0**
Malta	18,0	18,0
Netherlands	**19,0**	**19,0**
Poland	22,0	23,0
Portugal	**21,0**	**23,0**
Romania	19,0	24,0
Slovakia	**19,0**	**20,0**
Slovenia	20,0	20,0
Spain	**16,0**	**18,0**
Sweden	25,0	25,0
United Kingdom	**17,5**	**20,0**

Source: processed according Taxation trends in European Union 2012 [3]

In the present taxable transactions are taxed at the rates and under the conditions set by the EU country where they take place. The standard rate of VAT is set as a percentage of the taxable amount which, until 31 December 2015, may not be less than 15 %. EU countries may apply one or two reduced rates of not less than 5 %. The reduced rates may only be applied to supplies of goods and services in the categories listed in Annex III to the VAT Directive (as last amended by Directive 2009/47/EC). [1]

The current economic crisis has acted as a catalyst for structural reform in many countries. In the tax area such reforms aim at ensuring the long term sustainability of public finances while safeguarding the competitiveness of the economy and its longer-term growth potential. The pace and nature of reforms have varied markedly between countries but a consensus has emerged on the fact that growth-friendly tax reforms could help strengthen the jobs content of a recovery. This includes removing tax expenditures and shifting the tax burden towards tax bases that are less harmful to employment and growth, such as consumption taxes. [7, p.15]

Figure 1: Standard VAT rates changes from 2006 - 2012 (0 = base year 2006)
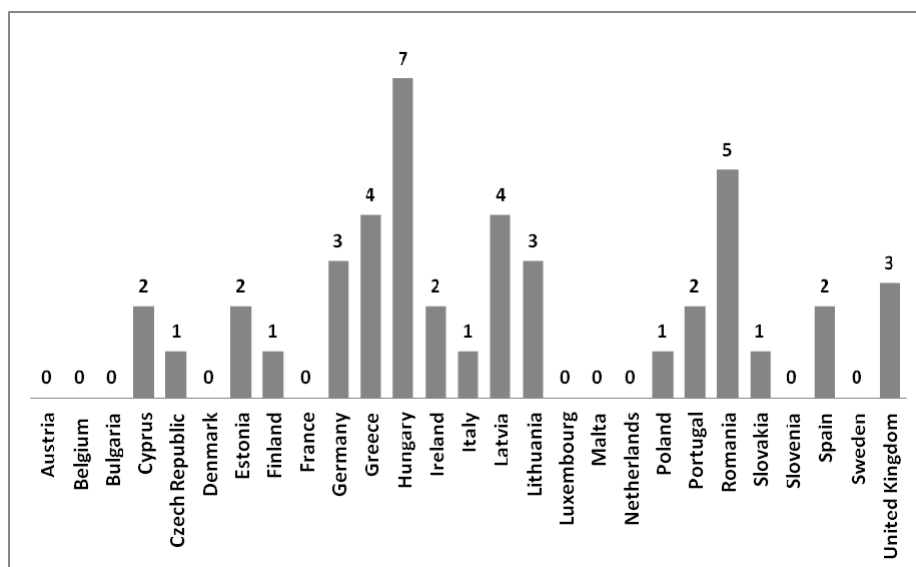
Source: processed Taxation trends in European Union 2012 [3]

Tab. 2 and Fig. 1 show that the most of the EU countries (17 of 27) increased their VAT rates. The highest increase of VAT rate in 7 years was in Hungary by 7 percentage points (from 20% to 27%), following by Romania with the increase by 5 percentage points (from 19% to 24%). By 4 percentage points Greece (from 19% to 23%) and Latvia (from 18% to 22%) increased their VAT rates. The countries which has not marked any changes in VAT rates in the year 2012 compared to the year 2006 are Austria (20%), Belgium (21%), Bulgaria (20%), Denmark (25%), France (19,6%), Luxembourg(15%), Malta (18%), Netherlands (19%), Slovenia (20%) and Sweden (25%). Other 13 countries of EU have VAT rate changes from 1 to 3 percentage points.

Variation in VAT rates affect capital and trade movements, at least in the short – medium term, and are therefore relevant for the functioning of the single market. In a context of a trend towards increasing consumption taxes, coordination of policies directed at raising standard VAT rates or limiting the application of reduced VAT rates may be beneficial.
[6, p.82]

Table 3: VAT Revenue Ratio of EU Member countries in 2011

Country	VAT revenue (% GDP)	Final consumption expediture (% GDP)	VAT rate (%)	VAT revenue ratio
Belgium	**7,0**	**77,0**	**21**	**0,48**
Bulgaria	8,7	78,1	20	0,63
Czech Republic	**7,0**	**71,4**	**20**	**0,54**
Denmark	9,9	77,2	25	0,59
Germany	**7,3**	**76,7**	**19**	**0,55**
Estonia	8,5	70,6	20	0,68
Ireland	**6,2**	**67,1**	**21**	**0,48**
Greece	7,2	92,0	23	0,37
Spain	**5,4**	**79,3**	**18**	**0,41**
France	7,0	82,2	20	0,47
Italy	**6,2**	**82,0**	**20**	**0,41**
Cyprus	8,4	86,9	15	0,71
Latvia	**6,8**	**79,5**	**22**	**0,43**
Lithuania	7,9	82,3	21	0,51
Luxembourg	**6,3**	**47,7**	**15**	**1,00**
Hungary	8,5	73,8	25	0,52
Malta	**7,9**	**82,1**	**18**	**0,59**
Netherlands	6,9	73,0	19	0,55
Austria	**7,8**	**73,2**	**20**	**0,60**
Poland	8,1	79,3	23	0,49
Portugal	**8,3**	**86,6**	**23**	**0,46**
Romania	8,7	78,4	24	0,52
Slovenia	**8,4**	**78,7**	**20**	**0,60**
Slovakia	6,8	75,4	20	0,50
Finland	**8,9**	**79,8**	**23**	**0,55**
Sweden	9,5	74,2	25	0,59
United Kingdom	**7,3**	**86,4**	**20**	**0,46**

Source: processed according Eurostat

In a „pure" VAT regime, all final consumption expenditure would be subject to VAT at the standard rate. In theory, the closer the VAT system of a country is to the „pure" VAT regime, the closer its Ratio is to 1. On the other hand a low Ratio can indicate a reduction of the tax base due to a large number of exemptions or reduced rates or a failure to collect all tax due. [7, p.17]

Figure 2: EU countries ranking according VAT revenue ratio in 2011
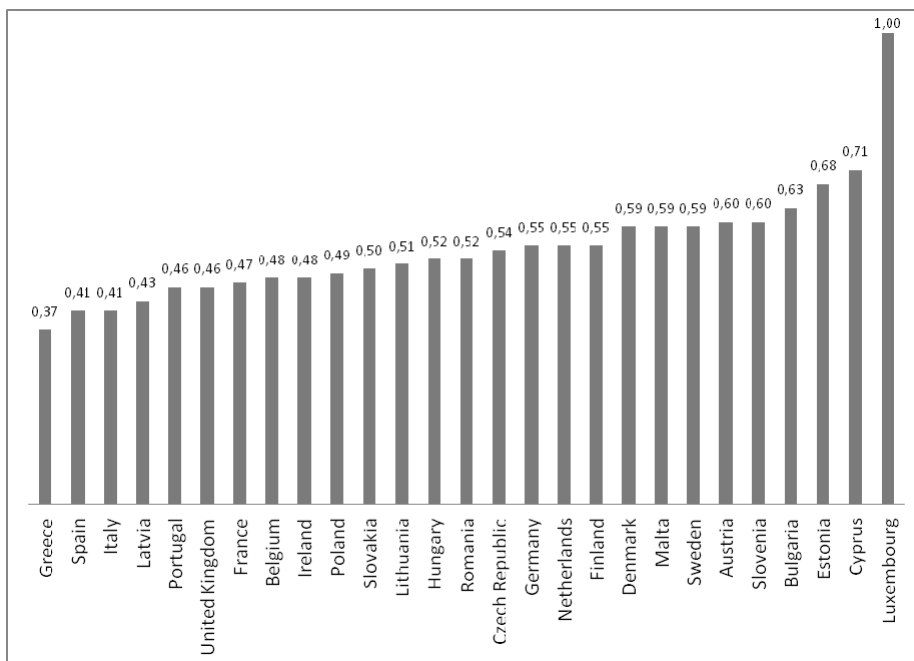
Tab. 3 and Fig. 2 show the considerable variation in the VAT Revenue Ratio across EU countries. It varies from 0,37 (Greece) to 1,00 (Luxembourg). The majority of countries (24 of 27) have a Ratio below 0,65 and 10 countries have a Ratio below 0,5. These results highlight applying the reduced VAT rates in considered countries. Comparing the countries with the same value of the Ratio, we can not see any correlation between the level of the VAT rate and the Ratio. The Ratio of Germany and FInland accounts for 0,55 but their VAT rate is 19% (Germany) and 23% (Finland).

The Ratio figures should be interpreted with caution since they result from the combination of the policy (the capacity of the tax administration to collect the tax due). In addition, a number of factors such as the evolution of consumption patterns, incomplete application of the destination principle and the tax treatment of government activities may have a significant influence on the Ratio in some countries. [7, p.17]

Súhrn

V súčasnej ekonomickej situácii členských štátov EÚ je potrebné konsolidovať ich štátne rozpočty aj prostredníctvom zvýšenia daňových príjmov. Tu sa dostávajú do popredia nepriame dane, keďže ich pôsobenie má na obyvateľstvo miernejší dopad ako v prípade priamych daní. Sadzby dane z pridanej hodnoty (DPH) zvýšilo od roku 2006 do roku 2012 17 členských štátov, pričom najväčší nárast zaznamenalo

Maďarsko. Okrem štandardnej sadzby DPH používa 26 členov EU aj znížené sadzby DPH, resp. super znížené sadzby DPH na vybrané tovary a služby. Výnimku tvorí Dánsko s jednotnou sadzbou DPH na všetky tovary a služby.

Na určenie efektivity DPH sa používa ukazovateľ „VAT Revenue Ratio", ktorý vypočítava skutočnú mieru efektivity výberu DPH v porovnaní s optimálnou mierou výberu DPH. Za optimálnu mieru považujeme zdanenie všetkej produkcie štandardnou sadzbou DPH. V takomto prípade sa spomínaný ukazovateľ blíži k hodnote 1. V roku 2011 sa hodnoty „Ratio" členských štátov EU pohybovali v rozmedzí 0,37 (Grécko) až 1 (Luxembursko). Porovnaním sadzieb DPH a „Ratio" jednotlivých štátov nebol zistený vplyv výšky sadzby DPH na hodnotu tohto ukazovateľa.

Z uvedeného vyplýva, že aj keď je ukazovateľ „VAT Revenue Ratio" vhodný nástroj na hodnotenie krajín, je ďalej potrebné identifikovať špecifické faktory ovplyvňujúce efektivitu DPH. [7]

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PERFORMANCE ANALYSIS OF THE SELECTED ENTERPRISES IN THE ENERGY INDUSTRY

ANALÝZA VÝKONNOSTI VYBRANÝCH SUBJEKTOV ENERGETICKÉHO PRIEMYSLU

Abstract: Business performance measurement has become an important phenomenon of today. To measure the performance the variety of methods are used. In addition to the traditional methods, based on the calculation of the conventional indicators of Ex Post and Ex Ante Financial Analysis, the modern indicators begin to apply. These indicators include effects and risks of surroundings, non-financial indicators and also indicators focused on the future revenues and achievements resulting from the current decisions. The aim of this paper is to point out the performance of the selected industry in the Slovak Republic with the application of all abovementioned methods of the performance evaluation, principally the modern ones. Methods applied in this contribution include for example comparative analysis and the methods of analysis and synthesis. When building a performance model the method of comparison with mean values respectively the optimum values, as well as the method of scoring and creditworthy model creating will be used. The research and measurements conducted will result in the proposal of the key performance indicators – financial and non-financial - for the given industry and the performance evaluation of the industry with regard to the EVA indicator.
Key words: Performance, Economic Value Added, Financial indicators, Sectoral indicators.

Introduction
The beginning of the business performance measurement dates back to the second half of the 20th century. In this period specifically in the Western Europe and the American continent the emphasis was placed on providing the operative and tactical performance, while among the basic performance indicators were the economic output and indicators of capital/asset profitability. Over time, however, there have been many significant changes not only in the approach to measuring performance, but also in the methods and tools of performance evaluation. In this regard, during the 70s and 80s of the 20th century the use of modern performance indicators has started. These indicators take into account the implications of current decisions and activities for the future development of corporate performance and economic profit (represented by indicators such as MVA – Market Value Added, EVA – Economic Value Added, CVA- Cash Value Added). The fundamental change in the development of performance measures has occurred in the 90s of the 20th century, when the evaluation of the performance in relation to the transformation process has

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moved to the performance expressed by the modification of the market value of the company and Free Cash Flow. In terms of the development of measures and methods of performance measurement and management, the opinions on the performance have also developed from the requirement of maximizing profit to market value maximization and ensuring the future strategic growth. Among the representatives who understand the performance as the enterprise ability to capitalize its investments embedded into business in the best way are the authors of the publications [6], [18]. Proponents of the Value Based Management indicate that the value of the company is determined by its performance and according to this theory enterprise is a tool whose task is capitalization of shareholder investments [19]. Several authors indicate the need for the comparison of performance with the target value [13]. European Foundation for Quality Management ((EFQM) defines performance as the level of results achieved by individuals, groups, organizations and processes. Enterprise performance can be evaluated differently. It depends on market participant, who is making the review [27]. Valach approaches to the definition of the performance in the same way – he points out that the participant for whom the evaluation is done is important, whether it's a customer or shareholder [32]. The enterprise is powerful when it satisfies customer product requirements. The business is powerful for the shareholder when it provides adequate return related to risk [32].

Nowadays the attention in evaluating and measuring the performance is given to formation of such methods of performance measurement which in addition to financial indicators include also non-financial ones supporting the business strategy and enabling the measurement of performance for each level of management. Such methods include for instance Balanced Scorecard, EFQM Excellence Model, techniques of determining measures for organizational management – for example CMM (Capability Maturity Matrices), performance pyramid, EP^2M (Effective Progress and Performance Measurement), Performance Management Process by authors Sink and Tuttle, who claim that business performance is a complex relationship among seven measurement categories of organizational performance: effectiveness, efficiency, quality, productivity, quality of work life, innovation, cost and prices [24]. These seven performance measurement categories in many ways remind the Balance Scorecard method of Kaplan and Norton [9]. The modern techniques of performance management and performance measurement also include the following methods: Total Quality Management, Six Sigma, Benchmarking, Kaizen, Business Process Reengineering and others.

Performance evaluation methods
The most common method of assessing the financial and economic performance of the company are methods of fundamental or technical analysis, which evaluate the enterprise in economic terms based on a detailed study and analysis of financial statements [4]. In the opinion of many Slovak and foreign authors as the most common indicators to measure the performance of companies are used the financial indicators [8], [3], [21], [29], [22]. These conventional indicators are based mainly on profit maximization – the primary goal of business. They map the main activities

of the company in the areas of profitability, ability to pay and investment area in terms of value for investors. However, these traditional performance evaluation methods are beneficial only when [22]:

- financial ratio indicators are designed according to the logic of their internal dependency, to be able to show the factors most influencing the financial performance of the company, we generally talk about a pyramid system of financial ratios,
- individual financial ratio indicators are calculated in accordance with consistent financial procedures while it is accepted that the more periods is analyzed using financial ratios the results of these indicators are more accurate and have a higher predictive value,
- Standardized financial ratio indicators can be compared with the same and similarly constructed financial ratios achieved by comparable companies in the given sector, or the market as a whole. This method is known as benchmarking. Mentioned approach is the more effective, the better access the company has to the real values of financial indicators of the largest competitors.

According to the argument that the objective is not only to measure, but in particular to improve performance [7], it must be noted that these conventional financial ratios have low predictive value in analyzing and evaluating the financial performance of the company, in terms of making tactical and strategic decisions in management. This is caused by the fact that these results are judged rather isolated. Conventional performance indicators do not answer the question why the overall results achieve such values or which areas of the company should be improved in order to meet strategic company objectives. It is therefore important to supplement conventional financial indicators with another more dynamic and more prospective indicators, which are adjusted to specific competitive conditions. It means to focus on monitoring and comparing of implementation results describing performance with the planned level of performance, monitoring the strategies direction during their implementation, identifying the accompanying problems of fundamental importance and performing the necessary changes and adjustments. [5]. Development of modern indicators of performance evaluation focused on the processing and designing of indicators most closely connected to the value of shares. These indicators should also enable to use the most of accounting information and data, include calculation of risk, take into account the range of related capital and finally should allow performance evaluation and also the enterprises valuation. [18]. The performance assessment should be approached from different perspectives, in assessing it from the position of the shareholder the evaluation is based on return on invested capital into the company while every shareholder is expecting profitability adequate to risk. [19]. Currently the best known and most utilized modern indicator of performance measurement is Economic Value Added (EVA) indicator. Reasons for applying EVA indicator are as follows:

- EVA is a synthetic indicator, which involves the impacts of analytical indicators of the other functional areas of the enterprise [10],

- is a flexible indicator being able to constantly modify and adapt to changing conditions and specific requirements [2],
- constitutes a combination of financial and market data and combination of internal and external influences [26],
- is an indicator that allows to apply the value based management [18],
- it enables to make decisions on the capital allocation, is an instrument of capital budgeting,
- is an instrument for the operative management of the enterprise performance,
- in addition to current development it makes possible to incorporate the future expected market and surroundings development in its calculation,
- is the motivating factor in the enterprise, which enables compensation in relation to the objectives of the business,
- is an indicator of future development, eliminates the shortages of conventional evaluation methods of enterprise performance [19],
- is strongly correlated with the capital market.

The aim and the methods

The aim of this paper is to assess and analyze the performance of the selected entities of the energy industry with the application of credibility model – the combination of conventional and modern methods of performance evaluation. Traditional financial measures of performance are in terms of modern approaches to performance evaluation supplemented by sectoral characteristics and measures, typical for the energy industry.

The conventional indicators of financial analysis applied in abovementioned model are selected on the basis of INFA model containing key performance indicators. [18], using factor analysis and standard mathematical formulas for assessing the impact of analytical indicators on synthetic one. [22]. It concerns the financial indicators with the greatest impact on EVA (Economic Value Added) indicator applied to meet target of the presented contribution. Selected financial indicators constitute a group of 10 indicators representing all areas of the financial situation of the enterprise according to CIMA (Chartered Association of Certified Accountants) used in international practice [22]:
- operational indicators,
- indicators evaluating the financial structure and ability to pay of the company,
- investment indicators - the group of indicators measuring the enterprise attractiveness, whether present or future, with respect to investors

Table1: Selection of financial indicators for performance assessment

Evaluated area	Indicator	Unit of measure	Rationale for the selection
Enterprise ability to pay	Current Ratio	Ratio	Indicators, which refers to financial risk
Enterprise ability to pay	Cash - to – Cash	Days	Indicators, which refers to financial risk

Operational indicators	Capital Turnover	Ratio	Key performance indicator, representative of the future performance of enterprise
Operational indicators	Average Collection Period	Days	Representative of the current performance and ability to pay of the enterprise
Operational indicators	Return on Assets, ROA	%	The core of the enterprise performance, total efficiency, representative of the future performance of the enterprise, representative of the business risk
Operational indicators	Profit Margin	%	Representative of the future enterprise performance, key performance indicator
Indicator of investment attractiveness for shareholders	Weighted Average Capital Cost, WACC	%	Representative of the current and future performance of the enterprise, indicator of attractiveness for shareholders
Indicator of investment attractiveness for shareholders	Equity Ratio	%	The representative of the risk of lower liquidity in the stock market
Indicator of investment attractiveness for shareholders	Return on Equity, ROE	%	The representative of the attractiveness for shareholders, key indicator of performance and allocation of EBIT
Attractiveness for shareholders	Interest Coverage	Ratio	The representative of attractiveness for shareholders

Source: own processing

These indicators are appropriately supplemented by sectoral indicators for a given area of the energy industry. Selected indicators are identified and elected in accordance with the theory of Balanced Scorecard, with a focus on financial and customer perspective, internal processes and potentials perspective. It regards the sectoral characteristics important for assessing and managing the performance of the energy industry.

Table 2: Selection of sectoral indicators for performance assessment

Evaluated area	Indicator	Unit of measure	Rationale for the selection
Financial perspective	Cost consumption	€/Point of supply	Key performance indicator in terms of the financial perspective
Financial perspective	Return on investment	Ratio	Key performance indicator in terms of the financial perspective
Customer perspective	Point of supply profitability	%	Key indicator of the financial perspective
Customer perspective	Tariff for electricity distribution without losses including electricity transmission - Voltage level Mv	€/MWh	Key performance indicator in terms of the customer perspective
Internal perspective of BSC	Energy efficiency of electricity distribution	%	Key performance indicator for the energy industry – distribution - in terms of the internal perspective of BSC
Internal perspective of BSC	Share of losses in the electricity distribution	%	Key performance indicator for the energy industry – distribution - in terms of the internal perspective of BSC
Internal perspective of BSC	Average interruption (unavailability) duration of electricity distribution to point of supply – Voltage level Mv	Minutes/Point of supply	Key performance indicator for the energy industry – distribution - in terms of the internal perspective of BSC

Perspective of BSC potentials	Number of failure to comply with standard of quality events to recorded events	%	Key performance indicator for the energy industry – distribution - in terms of the perspective of BSC potentials
Perspective of BSC potentials	Number of failure to comply with standard of quality events to employee	Number/Employee	Key performance indicator for the energy industry – distribution - in terms of the perspective of BSC potentials
Perspective of BSC potentials	Labor productivity	€/Employee	Key performance indicator for the energy industry – distribution - in terms of the perspective of BSC potentials

Source: own processing

In meeting the target, the standard processing techniques were used such as comparative analysis and the methods of analysis and synthesis. When creating a performance model the method of comparison with the optimum values, as well as the method of scoring was used. To eliminate the lack of conventional financial indicators - the isolated evaluation of the selected indicator – these indicators are converted into a points and the sum of these points constitute the comprehensive assessment of business performance. Within the energy industry the sample of electricity industry with a focus on electricity distribution was specified. The information for the contribution was obtained from the professional journals and internet websites of selected companies of the energy industry, which will be an anonymous.

Discussion and proposals

The values of selected financial indicators for the years 2010 and 2011 are presented in Tab. 3. They are extracted in terms of key performance measures expressed by EVA indicator. In a selected group of measures are situated financial indicators assessing enterprise liquidity or ability to pay, activity, capital structure, operational activity and also attractiveness of enterprise for shareholders. Data for the calculation of indicators were obtained from the websites of individual companies [35], [36] [37]. Furthermore the information from the statistics of National Bank of Slovakia on the evolution of interest rates and long-term loans were used in the processing and calculation of price for equity and total capital [31].

Table 3: Values of selected key financial indicators in relation to the EVA indicator

Indicator	DIS1 2010	DIS1 2011	DIS2 2010	DIS2 2011	DIS3 2010	DIS3 2011
Current Ratio	1.23	1.61	0.75	1.2	1.56	0.67
Cash - to - Cash	-28.81	-26.02	-23.57	-16.44	-19.03	-15.28
Capital Turnover	0.37	0.50	0.38	0.46	0.46	0.55
Average Collection Period	29.70	19.59	44.17	32.73	24.41	30.48
Return on Assets (ROA)	3.81	6.60	4.45	6.25	6.52	7.53
Profit Margin	13	16	14	17	18	16
Weighted Average Capital Cost (WACC)	4.063	5.21	14.17	5.43	4.063	15.21
Equity Ratio	77.53	77.46	78.59	78.97	81.50	79.03
Return on Equity (ROE)	4.71	8.35	5.62	7.89	8.00	9.15
Interest Coverage	24.95	49.33	136.62	431.12	4, 888.59	3, 786.35

Source: own processing

Transformation of values of selected financial indicators to the points is performed with the use of the method of scoring, while the points are assigned to selected indicators based on the optimal values of these parameters taking into account the specifics of given industry. The maximum score which enterprises are able to achieve is 80 points.

Table 4: The score of selected financial indicators in relation to the EVA indicator

Indicator	DIS1 2010	DIS1 2011	DIS2 2010	DIS2 2011	DIS3 2010	DIS3 2011
Current Ratio	8	8	0	8	8	0
Cash - to – Cash	0	0	2	4	2	4
Capital Turnover	8	8	8	8	8	8
Average Collection Period	4	8	2	2	6	4
Return on Assets, ROA	8	8	8	8	8	8
Profit Margin	4	6	4	8	8	7
Weighted Average Capital Cost, WACC	8	8	0	8	8	0
Equity Ratio	8	8	8	8	8	8
Return on Equity, ROE	8	8	0	8	8	0
Interest Coverage	8	8	8	8	8	8
Score	**64**	**70**	**40**	**70**	**72**	**47**

Source: own processing

As we can see in the Tab. 4 neither company achieved maximum points. When we analyze the total score we can see differences, mainly in the company DIS2. In the case of this enterprise, the significant improvement occurred in the year 2011 compared to 2010. In contrast, in the case of company DIS3 the deterioration occurred, which can be considered as a negative trend in the performance of the company. Reducing points in companies DIS2 and DIS3 is caused by current ratio since the companies didn't reach the desired value of Current Ratio and consequently the highest possible financial risk has been assigned to them. This is subsequently reflected in the score of WACC and ROE indicators. As a result of financial risk, achieved value of ROE is not sufficient to cover Rate on Equity and WACC for the same reason exceeds achieved value of the ROA indicator. Company DIS1 reports the stable performance nevertheless it doesn't achieve the maximum score. This is due to cycle cash - to - cash, in which the company achieves negative values. From the conducted analysis and scoring resulted that company DIS2 achieved negative value of the EVA indicator in 2010 and company DIS3 achieved negative value of this indicator in 2011. Tab. 5 shows values of EVA indicator and also values of individual risk factors and the alternative costs of equity, as well as WACC. The values of the EVA indicator demonstrate that company DIS2 wasn't in the year 2010 powerful as the company achieved negative value of EVA indicator, for the same reason company DIS3 wasn't powerful in the year 2011. As mentioned above, the negative value of the EVA indicator was caused by financial risk of enterprises due to low liquidity. Indirect effect on the negative value of the EVA indicator demonstrated also profitability indicators, the amount of which did not cover the price of capital.

Table 5: Values of EVA indicator and selected risks influencing this indicator

Indicator	DIS1 2010	DIS1 2011	DIS2 2010	DIS2 2011	DIS3 2010	DIS3 2011
EVA (in €)	4, 519.12	22, 828.12	-46, 452.98	13, 740.76	32, 093.28	-46, 545.98
Rate of Equity (in %)	4.063	5.21	14.063	5.45	4.063	15.21
Rate Free (in %)	4.063	5.21	4.063	5.21	4.063	5.21
Financial risk (in %)	0	0	10	0,25	0	10
Business risk (in %)	0	0	0	0	0	0
Risk of lower liquidity in the Stock market (in %)	0	0	0	0	0	0
Price of foreign capital (in %)	0	0	0.053	0.011	0	0
WACC (in %)	4.063	5.21	14.17	5.43	4.063	15.21

Source: own processing

These financial indicators are supplemented in accordance with modern methods of performance evaluation by sectoral characteristics, its values are given in Tab. 6

Table 6: Values of the selected sectoral indicators

Indicator	DIS1 2010	DIS1 2011	DIS2 2010	DIS2 2011	DIS3 2010	DIS3 2011
Cost consumption	0.42	0.56	0.29	0.36	0.13	0.16
Return on investment	0.54	0.40	0.52	0.42	0.46	0.48
Point of supply profitability	5.8	10.24	15.18	17.89	30.77	33.71
Tariff for electricity distribution without losses including electricity transmission - Voltage level Mv	13.38	13.35	17	16.91	9.49	9.31
Energy efficiency of electricity distribution	93.33	94.13	90.48	92.08	91.55	91.87
Share of losses in the electricity distribution	6.54	5.74	9.3	7.70	8.33	7.99
Average interruption (unavailability) duration of electricity distribution to point of supply – Voltage level Mv	419.57	206.57	526.71	484.57	251.98	42.21
Number of failure to comply with standard of quality events to recorded events	2.05	4.06	2.52	1.59	1.14	0.44
Number of failure to comply with standard of quality events to employee	598	522	483	251	650	148
Employee labor productivity	1, 003.83	1, 129.10	850.52	980.88	3,457.70	3,048.71

Source: own processing

With the use of method of scoring the values of these indicators are converted to the point evaluation of selected entities and overall scores are calculated.

Table 7: The score of selected sectoral indicators

Indicator	DIS1 2010	DIS1 2011	DIS2 2010	DIS2 2011	DIS3 2010	DIS3 2011
Cost consumption	2	1	5	4	7	7
Return on investment	7	8	7	8	8	8
Point of supply profitability	2	3	4	5	8	8
Tariff for electricity distribution without losses including electricity transmission - Voltage level Mv	4	4	1	1	8	8
Energy efficiency of electricity distribution	7.5	7.4	7.2	7.3	7.3	7.3
Share of losses in the electricity distribution	7.5	7.4	7.2	7.3	7.3	7.3
Average interruption (unavailability) duration of electricity distribution to point of supply – Voltage level Mv	2	4.6	1	1	3.8	8
Number of failure to comply with standard of quality events to recorded events	4	1	3	5	6	8
Number of failure to comply with standard of quality events to employee	1.6	2.6	3	5	1	8
Employee labor productivity	2.3	2.6	2	2.2	8	7
Score	**39.9**	**41.6**	**26**	**45.8**	**64.4**	**76.6**

Source: own processing

The sectoral characteristics of the individual companies failed to achieve total number of 80 points. In the total score of sectoral indicators they achieved lower number of points as in the case of financial indicators. The scope for improvement provide primarily indicators in which enterprises achieved only 1 point, for example Tariff for electricity distribution without losses including electricity transmission - Voltage level Mv, Average interruption (unavailability) duration of electricity distribution to point of supply – Voltage level Mv, Cost consumption, Number of failure to comply with standard of quality events to recorded events. The best position in successfulness expressed by sectoral indicators achieved company DIS3 in 2011.

Figure 1: Performance portfolio
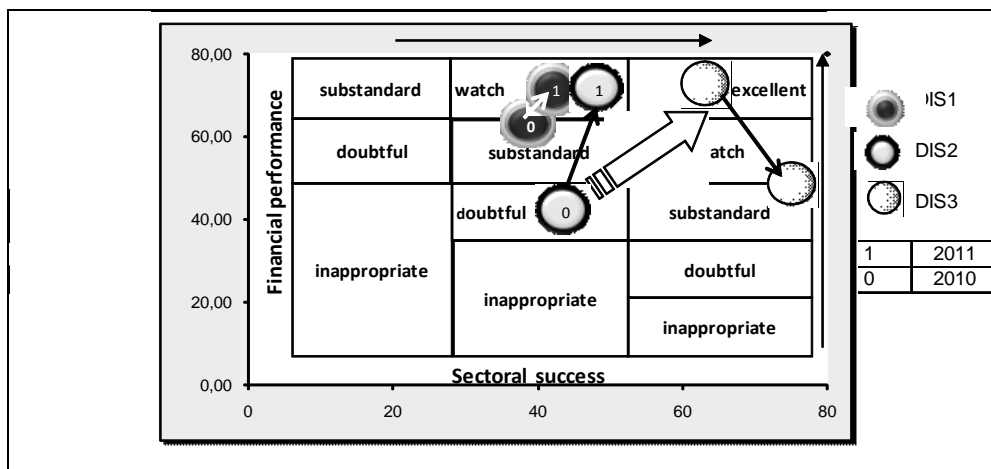
Source: own processing

Position of the selected enterprises in creditworthy model

Creditworthy model is in the field of financial and sectoral indicators divided according to number of points obtained in several areas of evaluation. The best position is excellent. Location in the watch area means that it is necessary to supervise the maintenance of given position, but it also generate a scope for performance improvement towards excellent position. Substandard position is specific for companies achieving average results in terms of performance. Among the worse locations belong positions doubtful and inappropriate creating extensive scope for the enterprise improvement in the field of financial performance and successfulness. Position of analyzed companies is in comparison with conventional performance evaluation inferior. Deterioration of performance evaluation was caused by selection of measures that are key indicators of enterprise value and business performance and are expressed by EVA indicator. The best position achieved company DIS3 in 2010, but in 2011 there occurred the deterioration. Reduction occurred in financial characteristic, concretely in liquidity and average price for capital which reflected in the negative value of the EVA indicator. However the companies DIS1 a DIS2 don't achieve the highest level, their performance development is positive and oriented to excellent position.

Súhrn

Hodnotenie výkonnosti podnikov je náročný proces. Veľkú pozornosť je potrebné venovať výberu správnych finančných ukazovateľov. Tie je potrebné vyberať v súlade s cieľom, ktorý pri výskume sledujeme. Náš výber bol zameraný na ukazovatele, ktoré sú kľúčovými vo vzťahu k tvorbe hodnoty a rastu výkonnosti podniku. V zmysle moderných metód hodnotenia výkonnosti sú finančné ukazovatele doplnené o ukazovatele, ktoré nepatria k štandardom finančnej analýzy. V prípade energetického priemyslu ide o ukazovatele, ktoré sú pre daný priemysel a jeho predmet činnosti špecifické. Iba aplikáciou týchto odvetvových ukazovateľov bude hodnotenie výkonnosti podniku objektívne, pretože zohľadní všetky funkčné oblasti podniku a ich vplyv na výkonnosť podniku. Bodové hodnotenie výkonnosti eliminuje nedostatky, ktoré vznikajú pri hodnotení výkonnosti s využitím jedného ukazovateľa. Vďaka grafickému zobrazeniu vývoja výkonnosti, získavajú podniky dokonalý pohľad na svoju doterajšiu pozíciu v portfolio výkonnosti, ale aj na pozíciu konkurentov a ďalší smer ich vývoja.

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ANALYTICAL VIEW ON UNEMPLOYMENT IN CONDITIONS OF SLOVAK REPUBLIC

ANALYTICKÝ POHĽAD NA NEZAMESTNANOSŤ V PODMIENKACH SLOVENSKEJ REPUBLIKY

Abstract: The effective workforce represents an essential condition for economic development of any state. Nowadays, we encounter much more economic evils compared to the past which determine economic processes. In recent decades, we see changes in the production factor of labor in Slovakia where there are on the one hand trends affecting real wages and on the other trends determining employment and unemployment. Sufficient forecast of employment, unemployment and active social policy of the state within the labor market can assist in a very positive influence of the labor production factor. The main objective of this paper is the analysis of unemployment as one of selected ethical issues in the Slovak Republic. The content of this paper is focused on the unemployment rate in the counties of Slovakia. The analyzed problem performs on a macro level as one of the subsystems of the overall integration system in sphere of ethics and economics.
Key words: unemployment, employment, region, county, labor force

Kľúčové slová: nezamestnanosť, zamestnanosť, kraj, pracovná sila

Introduction

Unemployment quantifies the serious economic and social phenomenon paralyzing not only the individual, but society as a whole. It is impossible to consider it as latent manifestation that sooner or later shall pass away; it is a multidimensional phenomenon, which must be addressed comprehensively, through in-depth analysis. Regional unemployment quantifies the potentially lost value in the region and the entire economy of the country. The issue of unemployment within ethics on macro level should increasingly resonate, become a subject to detailed analysis, should be talked about, and one should look for its causes and consequences, to find new ways and means to eliminate this major problem.

Unemployment in Slovakia

Unemployment is seen as a socio-pathological phenomenon and is the object of attention of many different scientific disciplines. It represents a serious problem, the solution of which directly affects productive capacity of the economy. The unemployment question has become the concomitant sign of the Slovak economy transformation after the year 1989. Unemployment was transformed into relatively new socio-economic phenomenon in the Slovak society, who had not known it before. Unemployment, however, has become a part of our society and there is an increasing need to analyze this problem in its broadest context. It dramatically changes a way of life and is an event that requires a strong adjustment effort [6, 8].Characteristic features of unemployment are mainly regional differences and a high proportion of long-term unemployed. Unemployment in Slovakia is one of the factors that traumatizes the whole society, has not only significant economic, social, and political dimensions, but as well as regional, socio-ecological and generational specificities [13]. Our society is undergoing transformation processes that affect all areas of our individual or social life. The issue of employment fundamentally determines the country's development, and the development of the regions. It determines economic development, and influences income of residents who expect sustainable environment stability.

Unemployment is a serious economic problem as it personifies lost potential benefit of the whole economy. At the same time it is also a social indicator, as it is associated with such social phenomena as the various dependencies, increased divorce rates and higher level of crime. The goal of each state is to reach full employment that is particularly crucial to maintaining social peace. It is a condition when a person who wants to work and accept wages that the employer can offer in the given circumstances, will always find a job [1, p. 99].

The effects of the economic recession on the open economy of Slovakia mainly in primary industries depending on foreign sales has reflected in rising unemployment and reduced costs in the form of wages. Employment and unemployment include two closely related, but still different views on key factors in the labor market. Therefore, they should be seen both individually according to their specific characteristics and in context of each other [7, p.59]. From the perspective of the theory of unemployment it is important not only to know the current situation, where the most important structural features include mainly frequency, age, gender, sector of the economy, level of education, but also forecast of its future development. Efforts to understand the most likely scenario is a vertex of scientific research, and also brings with it the opportunity to prepare for expected changes ahead, take them to the appropriate position, or take appropriate steps to choose a meaningful strategy to the impact of expected changes [9, 12]. The need to help the unemployed is an ethical requirement of social solidarity. It is a big challenge and the responsibility of state authorities to take care of the whole problem and guarantee anyone who is looking for work to get a reasonable position. Work helps humans to use the potential and develop their human being. Important role in that situation is played by the mass media, which allow for mass communication, defined as the process of disseminating and transferring content through testimony towards larger scale,

dispersed and socially disparate audiences [2, p.46]. Moment of numerous loss of labor due to the evolution and implementation of advanced technologies to work does not manifest itself as the most serious threat in the next fifteen years. More relevant factor is a structure of the labor force, particularly in terms of education, skills and degree of complementarity within labor market needs. On the one hand, there is a large group of people over the age of 45 who have completed their education long time ago, at a time of less interest in higher forms of education. On the other hand, there will be significantly the less numerous young workforce that managed to acquire its tertiary level of education [12].

Data and methodology
The method of analysis and comparative analysis is based on data through the apparatus of the Statistical Office of the Slovak Republic, Slovak Academy of Sciences and Eurostat. The object of research are different administrative counties of the Slovak republic - Bratislava, Trnava, Trencin, Nitra, Banská Bystrica, Žilina, Prešov and Košice regions Research hypothesis "During the reported period, the unemployment rate in the eight regions of Slovakia statistically significantly different" is tested. The analysis of variance is applied in order to verify the statistical hypothesis of equality of mean values of the unemployment rate in the observed counties of Slovakia.

Results and discussion
The selected indicators of unemployment are collected and processed in Tables 1, 2, 3 and Figures 1 and 2.

Figure 1: Evolution of unemployment rate in Slovakia in the period 1991-2011, values are in %.
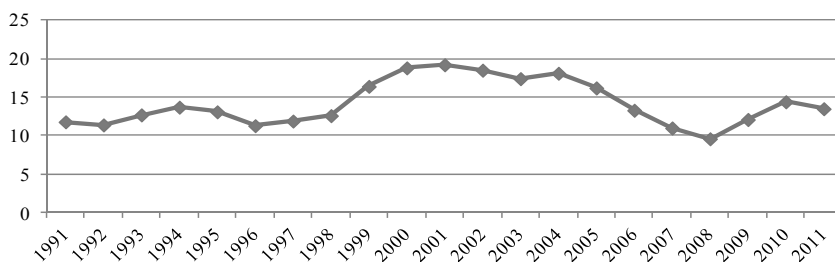
Source: self elaboration

Table 1: Indicators of unemployment in Slovakia

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Unemployment rate (%)	11.8	11.4	12.7	13.7	13.1	11.3	11.9	12.6	16.4	18.8	19.2
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Unemployment rate (%)	18.5	17.4	18.1	16.2	13.3	11	9.6	12.1	14.4	13.5	13.6

Source: statistical Office of the Slovak Republic [4, 5].

Figure 2: Prognosis of unemployment in the counties of Slovakia
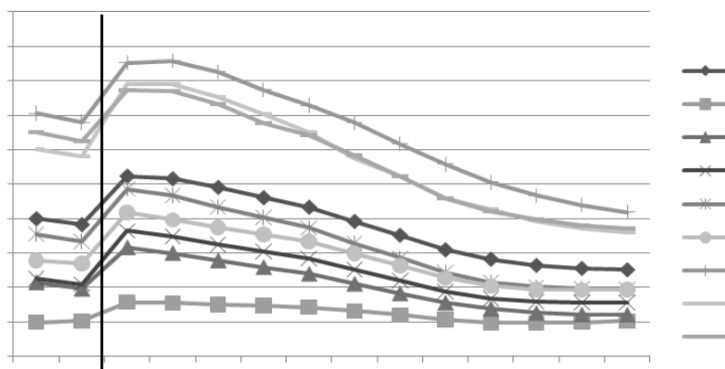
Source: [10, s.39]

In the period since 2012, there is expected a downward trend in the unemployment rate, which will be increased by the creation of new jobs as a result of starting the world economy. The lowest unemployment rate is expected to be in the county of Bratislava, where it should be, on average around 3.75%, the highest unemployment rate is expected in the county of Banská Bystrica, where it will reach on average about 15.3%. At the same time, in Banská Bystrica county is the highest expected decline in unemployment in 2020 compared to 2010 by almost 10 percentage points. The highest increase in the number of workers is expected in the Prešov county which is in 2020 almost 13% compared to 2010, further Košice and Banská Bystrica. In these regions, there is not such a rapid decline in unemployment due to demographic growth. Partial cohesion policy will have to be focused on job creation in these counties. The decrease in employment occurs only in the county of Bratislava in 2020 by almost 1% compared to 2010. Expected average annual growth in the number of employees in Slovakia will be around 0.6% in 2020 [3, p. 22].

Table 2: Development of unemployment rates by region in Slovakia, values are in %

County	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Slovakia	12.5	16.2	18.6	19.2	18.5	17.4	18.1	16.2	13.3	11.0	9.6	12.1	14.4	13.5
Bratislava	6.0	7.4	7.2	8.3	8.6	6.9	8.2	5.2	4.3	4.2	3.6	4.7	6.1	5.8
Trnava	11.8	12.3	16.4	18.0	16.1	13.2	12.5	10.4	8.8	6.5	6.2	9.1	12.0	10.6
Trenčín	7.7	11.4	15.0	13.4	11.3	9.2	8.6	8.1	7.1	5.7	4.7	7.3	10.2	8.7
Nitra	12.1	17.8	20.8	23.1	23.8	23.4	20.3	17.8	13.2	10.7	8.8	13.0	15.4	12.5
Žilina	10.5	15.9	18.5	18.9	17.3	17.2	17.5	15.2	11.8	10.1	7.7	10.6	14.5	14.3
Banská Bystrica	15.6	21.1	21.9	22.4	25,2	23.8	26.6	23.8	21.1	20.0	18.2	18.8	18.6	17.5
Prešov	16.4	19.1	22.1	22.7	20.1	20.4	22.9	21.5	18.1	13.8	13.0	16.2	18.6	17.8
Košice	18.7	23.1	25.6	24.8	24.1	23.0	25.2	24.7	20.3	15.9	13.5	15.5	18.3	19.6

Source: Statistical Office of the Slovak Republic [4,5].

Table 3: Development of the number of unemployed in thousands of people

County	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Slovakia	317.1	416.8	485.2	508.0	486.9	459.2	480.7	427.5	353.4	291.9	257.5	324.2	389.0	367.9
Bratislava	20.0	24.6	24.4	28.2	28.7	22.8	27.0	17.1	14.4	14.1	12.4	16.3	20.9	20.4
Trnava	30.7	32.8	44.7	51.5	45.7	37.1	36.0	30.1	25.4	18.7	18.3	27.5	36.6	31.7
Trenčín	23.0	32.9	44.2	39.8	33.1	27.0	25.4	23.9	21.2	16.7	13.9	21.4	30.7	25.9
Nitra	39.9	58.3	69.8	79.4	79.9	81.1	71.0	61.4	45.1	37.4	31.7	45.7	54.1	43.9
Žilina	34.8	52.6	61.4	63.3	57.8	57.1	57.9	50.3	39.4	33.6	25.9	35.4	48.7	48.6
Banská Bystrica	48.2	66.3	69.6	73.4	82.2	76.9	86.8	77.6	68.6	64.9	59.5	59.8	60.3	58.0
Prešov	56.2	68.3	80.1	83.1	73.3	74.1	85.4	80.1	68.0	51.7	48.7	62.4	72.0	68,.0
Košice	64.3	81.0	91.2	89.3	86.2	83.1	91.3	87.0	71.3	54.7	47.2	55.8	65.8	71.6

Source: Statistical Office of the Slovak Republic [4, 5].

Research hypothesis

During the reporting period, the unemployment rate in the eight counties of Slovakia was statistically significantly different. For the verification of statistical hypotheses about the equality of unemployment rates in eight districts of the Slovak Republic, we used analysis of variance. To verify the assumptions, we found inhomogeneity of variances (Leven F test = 3.43, p = 0.002).

Table 4: Shapiro-Wilk's test of normality

	Shapiro-Wilk's W test	**p**
1	0.951	0.570
2	0.962	0.763
3	0.968	0.848
4	0.928	0.291
5	0.929	0.300
6	0.983	0.989
7	0.952	0.584
8	0.911	0.161

However, due to the means across groups are not correlated with the standard deviations across groups and due to an identical number of sufficiently large numbers of measurements in the eight counties we disregarded the outcome of the test. Instead we used the Welch's F-test. The assumption of normality was satisfied in all eight counties (Table 4).Welch F test provided a significant test result (F = 59.826, p = 0.000) and therefore we can say that the unemployment rates demonstrated a statistically significant differences among the counties of the Slovak Republic in the course of 14 years. Hypothesis was confirmed. Chart of averages (Figure 3) provides an illustration of this assertion; the counties are numbered as following: 1-Bratislava, 2-Trnava, 3-Trencin, 4-Nitra, 5- Banská Bystrica, 6-Žilina, 7- Prešov and 8-Košice.

Figure 3: Chart of averages with 95% confidence intervals of unemployment rate
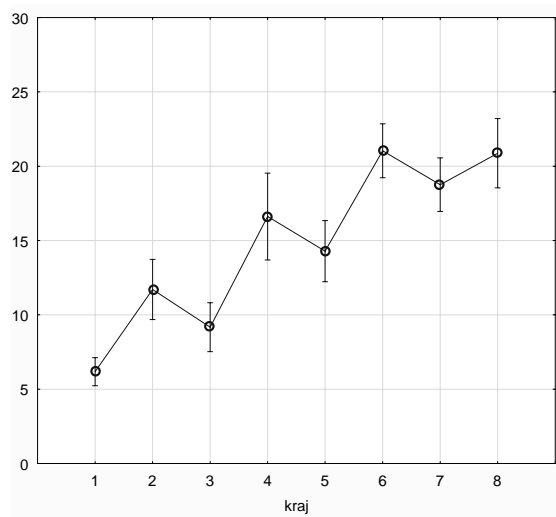
It is not only Figure 3 that confirms the significant results but also Tukey HSD test provides information on which of the pairs is statistically significantly different in the unemployment rate (Table 5).

Table 5: p-values of Tukey HSD test

| County | **Tukey HSD test; Unemployment rate** **Marked differences are significant at the significance level. p < 0,05;** **M = the average for the county** | | | | | | | |
	1 M=6.1786	**2** M=11.707	**3** M=9.1714	**4** M=16.621	**5** M=14.286	**6** M=21.043	**7** M=18.764	**8** M=20.879
1		0.001563	**0.321104**	0.000119	0.000119	0.000119	0.000119	0.000119
2	0.001563		**0.539354**	0.007496	**0.517477**	0.000119	0.000130	0.000119
3	**0.321104**	**0.539354**		0.000122	0.004549	0.000119	0.000119	0.000119
4	0.000119	0.007496	0.000122		**0.641355**	0.024078	**0.734788**	0.034572
5	0.000119	**0.517477**	0.004549	**0.641355**		0.000151	0.021166	0.000174
6	0.000119	0.000119	0.000119	0.024078	0.000151		**0.669826**	**1.000000**
7	0.000119	0.000130	0.000119	**0.734788**	0.021166	**0.669826**		**0.747838**
8	0.000119	0.000119	0.000119	0.034572	0.000174	**1.000000**	**0.747838**	

Summary

Currently, our economy is going through the time which encourages the deepening disparities between the counties of Slovakia. The article analyzed the problem of unemployment as one of the ethical problem of a large number of ethical problems at the macro level. This issue at this level of understanding has an impact on the overall economic development in the economy of Slovakia. The hypothesis confirmed the great difference in the unemployment rate among the counties of the Slovak Republic in the course of 14 years, and the testing established a statistical significant difference. Simple instructions on how to shrink the unemployment rate

is to create new jobs, good jobs. The long-term answer to unemployment policies should be the policy of employment. Public sector and private employers are saving on every step, they prefer splitting an extra work between those already employed, employees work overtime in order to keep their place, which prevents from creations of new jobs. In Europe, and in Slovakia, the state authorities should push for greater taxation of rich multinational corporations, in order to obtain funds for better social protection for citizens, but the investors are offered a variety of benefits in the form of a better tax system, and also a relatively cheap workforce. Foreign investors are driving the engine behind the development of regions and in cooperation with the government would be able to partly eliminate an impact of the economic crisis on the economy and unemployment rate. Foreign direct investments are the key for further reduction of regional unemployment, and are one of the factors that accelerate regional development [3, 8]. It is inevitable to introduce inclusive market in order to increase the employment rate and to decrease the unemployment rate, to increase the standard of living, and to promote territorial cohesion.

Súhrn

Epochou akou momentálne naša ekonomika prechádza neustále podnecuje k prehlbovaniu rozdielov medzi jednotlivými regiónmi Slovenska. V príspevku bol analyzovaný problém nezamestnanosti ako etický problém z veľkého počtu etických problémov na makroúrovni, pričom sa tento problém v kontexte tejto úrovne chápal ako určitá systematika, ktorá má dopad na celkový hospodársky vývoj v ekonomike Slovenska. Bol preukázaný štatisticky významný rozdiel v miere nezamestnanosti medzi jednotlivými krajmi Slovenskej republiky v priebehu štrnástich rokov.

Renovovaným návodom, ako nezamestnanosť zmenšovať, je vytvárať nové pracovné príležitosti, dobré pracovné miesta. Na dlhodobú nezamestnanosť odpovedať tvrdou politikou zamestnanosti. Verejný sektor aj súkromní zamestnávatelia na Slovensku šetria na každom kroku, radšej ľudí exploatujú, prerozdelia medzi nich prácu a zamestnanci pracujú nadčasy, aby si svoje miesto udržali, čím nedochádza k tvorbe nových pracovných miest. V Európe aj na Slovensku platí, že štáty by mali zatlačiť na väčšie zdaňovanie bohatých nadnárodných korporácií, aby získali finančné prostriedky na lepšiu sociálnu ochranu občanov, no investorom sú ponúkané rôzne výhody vo forme lepšieho daňového systému, a taktiež pomerne lacná pracovná sila. Zahraniční investori predstavujú hnací motor pre rozvoj regiónov a v spolupráci s vládou by mohli dopady hospodárskej krízy na ekonomiku a mieru nezamestnanosti čiastočne eliminovať. Priame zahraničné investície sú kľúčom pre ďalšie znižovanie regionálnej nezamestnanosti a zároveň sú jedným z faktorov, ktorý akceleruje regionálny rozvoj, [3,8]. Pre zvýšenie miery zamestnanosti a pokles miery nezamestnanosti, na zvýšenie životnej úrovne, podporu teritoriálnej kohézie je potrebné zavedenie tzv. *inkluzívneho trhu*.

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THE DEPENDENCY DETERMINATION OF THE SELECTED MEASURABLE INDICATORS TO THE AMOUNT OF THE AGRICULTURAL OUTPUT IN DIFFERENT REGIONS OF SLOVAKIA

URČENIE MIERY ZÁVISLOSTÍ VYBRANÝCH MERATEĽNÝCH UKAZOVATEĽOV NA VEĽKOSŤ POĽNOHOSPODÁRSKEJ PRODUKCIE V JEDNOTLIVÝCH KRAJOCH NA SLOVENSKU

Abstract: *The aim of this contribution is to determine the degree of linear dependence of selected measurable indicators to the amount of gross agricultural production in different regions of Slovakia. The selected measurable indicators are: the number of employees in each region in Slovakia and indicators of acquisition of intangible and tangible investments in each region in Slovakia from 2009 to 2011. The current state of the sector is characterized by a significant decline in production fields with high value-added. The discriminating support mechanisms for the common European market do not contribute to improving of this situation. For the development of the agricultural sector is necessary the revival of demand for domestic production, without which the agricultural sector can not create new jobs.*
*Key words***:** *agricultural production, number of employees, tangible investments, intangible investments, regression analysis.*

Kľúčové slová: poľnohospodárska produkcia, počet zamestnancov, hmotné investície, nehmotné investície, regresná analýza.

JEL: Q10

Introduction

Agricultural sector usually plays a important role in the economy of every country that exists and it is deeply interwoven with other sectors of the economy. The size and structure of agricultural production in some areas are affected by different factors, such as reached developmental level of society, natural resources, the ownership and ways of using land, traditional practices, markets, change in the pattern of consumption of foodstuffs and agricultural products, labor force in agriculture sector, greening, productivity, the investments and interventions of local, regional, subregional entities (Common Agricultural Policy), public opinion and concerns and enviromental fluctuations.

There are several scientific studies dealing with agricultural production and its efficiency as well as the factors that affect it. The economic efficiency of Slovak agriculture and its commodity sectors was analyzed by Chrastinová and Burianová (2012). [6]. The efficiency of Slovak agricultural farms in different regions were compared by Sojková, Kropková and Kováč (2008). [18].

Buchta (2011) deals with the development of agrarian employment in Slovakia after 2013. He tells that the restructuring and territorial reallocation of the production in compliance with the natural conditions of production will lead to the significant production, efficiency growth and it will be reflected in the spatial distribution of labour force within the agriculture. [1].

According to Grznár (2013), the important source of agricultural production growth are the investments. Investment processes play an important role in restoring of the manufacturing or technological equipment that is fully depreciated or morally outdated. Some investments may be resources saving of labor and labor costs, as they lead to the growth of the labor productivity. [4]

There are many foreign authors which deal with agricultural production. The agricultural industry in Poland after European Union accession analyzed Popek a Sikora (2013). [14] Kulikowski (2013) analyzes the factors, which influence the agricultural production in Poland regions. [9]. In Czech republic, this issue was analyzed by Lacina and Minařík (2002). [10].

Currently, after Slovakia's accession to the European Union and the European Monetary Union, it is important to understand of globalization and market-oriented trends and factors that can increase the success and prosperity of agricultural subjects. [8, p. 58] The accession of the Central and Eastern European countries into the European Union (EU) has been one of the main political and economic events of the last decade. This also very significantly affected the field of agriculture. The changes in this sector are particularly important because the Common Agricultural Policy (CAP) is an area of vital political importance and the EU Member States devote its approximately 45% of the total EU budget. It may be noted that the Common Agricultural Policy in the European Union countries and the question of its effectiveness become a key issue for the future of the Slovak Republic and the EU countries. [7, p. 76] The current financing system is expensive, complicated, bureaucratic and in many ways unequal among countries, regions, economies and farmers. The current CAP system does not place enough emphasis on the long-term thinking and the environmental protection and it is hardly sustainable over the long term. On these facts also highlights several scientific studies such as [5], [7], [17].

The competitiveness of Slovak agriculture in the common market of European Union is strongly influenced by economic parameters of production. The level of economic indicators is important to monitor in comparison with geographically close EU countries with similar production structures (especially the V4 countries, which had the same starting position). The inequality of this system is reflected in the comparison of value development of agricultural production in the Visegrad countries in proportion to the EU average. These countries reached (except Poland) at most half value of agricultural production compared to the EU average, over the last yars. It is important that the farmers were able to most efficient use their natural

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conditions and corresponding production structure. The effective use of production factors and production consumption is a key parameter of the competitiveness, which allows to evaluate the ability of the agricultural sector. [13].

Figure 1: The comparison of the value development of agricultural production in the V4 countries in proportion to the EU average (100 %)
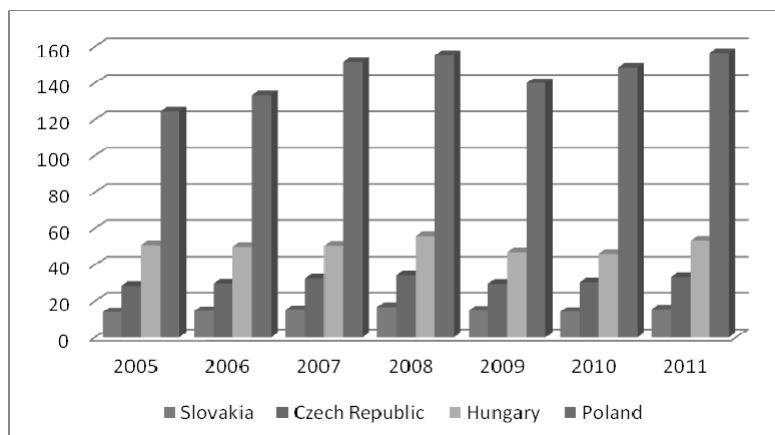
Source: Eurostat. Own processing

Materials and method

To fulfill the objective of this paper we used the secondary data published by the Statistical Office of the Slovak Republic. We used the latest available data from 2009 to 2011. We decided to use the NUTS III classification. [16]. The objective was to determine the degree of dependence of the selected measurable indicators to the amount of gross agricultural production in different regions of Slovakia. The data were taken for each region and among the measurable indicators we included the number of employees and indicators such as the volume of acquired tangible and intangible investments in these regions.

The term region has its place in different scientific disciplines, but in the opinion of many regionalists is the starting point for defining the region as the object of its regional policy the geographic significance. [16]. According to Act of National Council of Slovak Republic No 503/2011 Coll on the promotion of regional development the region is "the territorially defined area of the design and implementation regional and structural policy at the level of the second or third degree classification of territorial units for statistics."

The agricultural sector is the main employer and driver of development in rural regions and the employment impetus for regional economic development is enormous. Slovak farmers point to the continuing decline employment in this sector. For years, the number of employed in agriculture and food production decreases. We selected the indicator of number of employees with the aim to measure the impact on the volume of gross agricultural production, with emphasis on the this downward trend.

Gross agricultural production we can define as the sum of sales outside of the company, in-house turnover and the difference in stock level at the beginning and end of the year. It is calculated in quantity units and in financial terms. [19].

We selected for indicator of investments because the agricultural investments are essential to promoting agricultural growth, reducing poverty and hunger, and promoting environmental sustainability.

The term investment can be defined as expending of the capital for obtaining a specific type of property and this process may have different time duration. According to the type of property that is obtained, investments can be divided into:

➢ Tangible investments that result in tangible fixed assets or current assets (mostly stocks).
➢ Intangible investments, that result in intangible assets, as valuable rights such as patents, licenses, trade marks, software, etc. [20, p. 218-219].

The data, which we used are listed in the following table:

Table 1: Volume of gross agricultural production and selected measurable indicators for Slovakia regions

	2011				2010				2009			
	1	2	3	4	1	2	3	4	1	2	3	4
Bratislava region	138 185	1765	182,34	28 209,037	109 015	1791	1115,816	14 770,844	101356	2109	49,803	32267,518
Trnava region	464 800	5834	26,788	75 951,831	375 330	6305	39,389	60 006,805	321405	6726	180,347	71415,468
Trenčín region	182 689	3295	10,174	32 815,764	148 874	3409	10,685	21 828,179	165339	3890	8,762	27297,246
Nitra region	630 763	6963	21,336	64 430,159	481 816	7512	55,266	53 377,875	455944	8321	48,395	63550,642
Žilina region	119 019	3020	13,968	28 066,083	104 557	3144	22,422	24 726,354	100120	3348	27,281	31690,218
Banská Bystrica region	220 342	3128	23,142	48 942,783	168 870	3457	56,739	39 840,995	155669	3907	45,196	36241,164
Prešov region	141 847	2944	0,763	25 568,121	114 376	3038	145,814	30 799,381	119322	3510	189,008	35120,972
Košice region	193 254	2391	7,154	22 950,155	153 005	2643	13,415	25 985,802	170636	2948	15,975	30697,148
Total	2 090 899	29340	285,665	326933,933	1 655 843	31298	1459,546	271336,235	1589791	34759	564,767	328280,376

Gross agricultural production in thous.euros (1), number of employees (2), acquisition of intangible (3) and tangible (4) investments in thous.euros

Source: Statistical Office of the Slovak Republic. Own processing.

We defined the following hypotheses:
➢ H_1: There is a statistically significant dependence between the amount of gross agricultural production in different regions of Slovakia and the number of employees.
➢ H_2: There is a statistically significant dependence between the amount of gross agricultural production in different regions of Slovakia and the volume of acquired intangible investments.
➢ H_3: There is a statistically significant dependence between the amount of gross agricultural production in different regions of Slovakia and the volume of acquired tangible investments.

In this paper was used the simple regression analysis, which describes the linear relationship between a pair of numerical variables and this dependence is shown by

a regression line. The intensity of the dependence were determined by correlation analysis. For the calculation we used the Pearson correlation coefficient, which determines the direction and rate of force statistical dependence of two numeric variables. Pearson correlation coefficient is located in the interval from -1 to 1. We also used a method of the analysis and the synthesis.

The correlation coefficient (R) will be interpreted according to the following table:[15]

      0.1 > R   trivial correlation
      0.1 to 0.29 Small correlation
      0.3 to 0.49 mean correlation
      0.5 to 0.69 strong correlation
      0.7 to 0.89 very strong correlation
      0.9 < R   almost perfect correlation

Pearson correlation coefficient also determines the direction of the linear dependence as follows: [15]

      R > 1 there is a direct linear relationship between variables
      R < 1 there is a undirect linear relationship between the variables
      R = 0 the variables are not linearly dependent.

Results and discussion

The agriculture of the Slovak Republic reached a negative profit before tax of EUR 41.7 million, in 2010. After 2009 it was the second most losing and most difficult year in agriculture since the accession of Slovakia to the EU. [12, p.3]. The decreasing trend of revenues was caused by lower production, that was replacing by increasing imports not only in the complementary range of products but also by commodities such as pork or poultry meat. In 2010, from the European Union resources and national resources have been disbursed to farmers the direct payments totaling up to 90 % of the EU-15, exactly 70 % of the EU-15 and 20 % of the state budget as a national compensatory direct payment. The level of direct payments in 2010 paid from European sources remained below the support level of the old member states (EU-15) and together with the breakdown of EU payments between the different areas of the Slovak Republic has an impact on the competitiveness of Slovak farmers in the European market. [12, p.5].

The agriculture in Slovakia has undergone significant changes, not only in terms of its position in the national economy, but also in terms of its importance to the regional level. There is still a persistence of differences between the better and worse natural conditions as well as the persistence of the economic and social differences with possible impact on the amount of gross agricultural production in different regions of Slovakia. The highest volume of gross agricultural production achieves long-term Nitra region, followed by Trnava region and Banská Bytrica region. On the other hand, the lowest volume of gross agricultural production achieves Žilina region, followed by Bratislava region and Prešov region in the long-term perspective.

Figure 2: The gross agricultural production in Slovakia regions from 2009 to 2011 (in thous.euros)
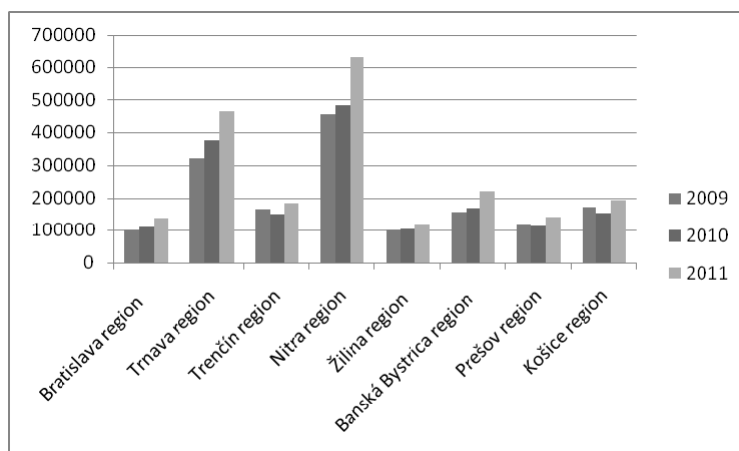
Source: Statistical Office of the Slovak Republic. Own processing.

There were processed three models during the verification the hypotheses relating to the amount of gross agricultural production. During the verification of the first hypothesis which was: *"there is a statistically significant dependence between the amount of gross agricultural production in different regions of Slovakia and the number of employees"* we identified the following facts. There is almost perfect correlation (Multiple R = 0,92389568) between the amount of gross agricultural production and the number of employees and between variables was recorded direct linear relationship. The variability in the values of dependent variable was explained on 85 %. This model is statistically significant (significance F = 1,19844E-10) and this hypothesis can be accepted.

Figure 3: Impact of the number of employees on the amount of agricultural production
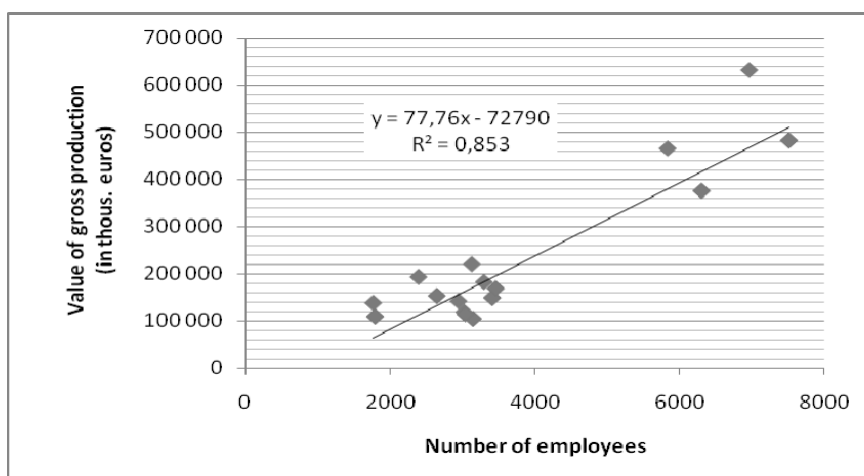
Source: Statistical Office of the Slovak Republic. Own processing.

Table 2: Impact of the number of employees on the amount of agricultural production

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,92389568
R Square	0,85358322
Adjusted R Square	0,84692791
Standard Error	59749,1988
Observations	24

ANOVA

	df	SS	MS	F	SignificanceF
Regression	1	4,5787E+11	4,58E+11	128,256	1,19844E-10
Residual	22	78539268648	3,57E+09		
Total	23	5,36409E+11			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	-72790,238	28994,32534	-2,5105	0,019905	-132920,788	-12659,688	132920,788	-12659,688
X variable 1	77,7649145	6,866649021	11,32502	1,2E-10	63,5243561	92,0054729	63,5243561	92,0054729

Source: Statistical Office of the Slovak Republic. Own processing.

During the verification of the second hypothesis which was: *"there is a statistically significant dependence between the amount of gross agricultural production in different regions of Slovakia and the volume of acquired intangible investments"* we identified the following facts. There is a small correlation (Multiple R = 0,166019424) and between variables was recorded indirect linear relationship. The variability in the values of dependent variable was explained on 2 %. This model is statistically insignificant (significance F = 0,43815583) and we refuse this hypothesis.

Figure 4: The impact of the volume of acquired intangible investments on the amount of agricultural production
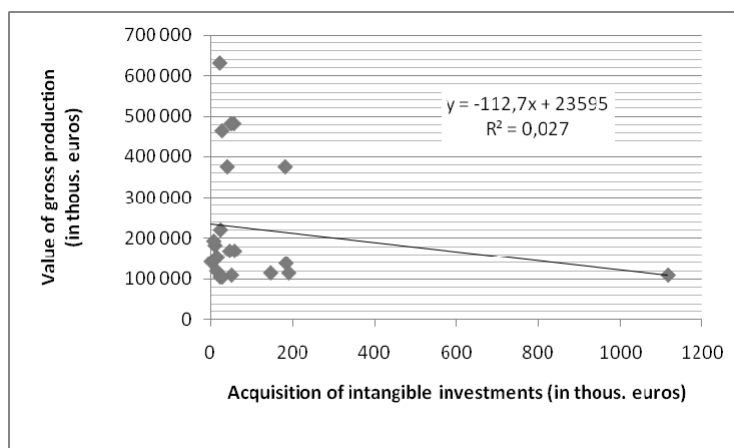
Source: Statistical Office of the Slovak Republic. Own processing.

Table 3: The impact of the volume of acquired intangible investments on the amount of agricultural production

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,16601942
R Square	0,02756245
Adjusted R Square	- 0,01663926
Standard Error	153981,137
Observations	24

ANOVA

	df	SS	MS	F	Significance F
Regression	1	14784743977	1,48E+10	0,623561	0,43815583
Residual	22	5,21624E+11	2,37E+10		
Total	23	5,36409E+11			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	235954,71	34301,76401	6,878792	6,58E-07	164817,2056	307092,21	164817,2056	307092,214
X variable 1	-112,697192	142,7163446	-0,78966	0,438156	-408,6727746	183,27839	-408,672775	183,27839

Source: Statistical Office of the Slovak Republic. Own processing.

During the verification of the third hypothesis, which was defined as follows: *"there is a statistically significant dependence between the amount of gross agricultural production in different regions of Slovakia and the volume of acquired tangible investments"* we achieved the following results. There is a very strong correlation (Multiple R = 0. 0,871344061) between the amount of gross agricultural production and the volume of acquired tangible investments and between variables was recorded direct linear relationship. The variability in the values of dependent variable was explained on 76 %. This model is statistically significant (significance F = 3,00226E-08) and this hypothesis can be accepted.

Figure 5: The impact of the volume of acquired tangible investments on the amount of agricultural production
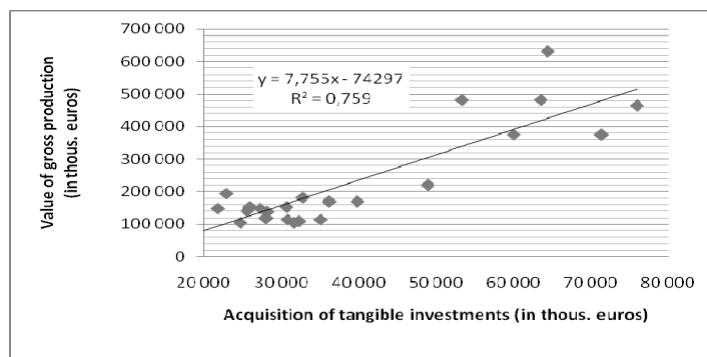
Source: Statistical Office of the Slovak Republic. Own processing.

Table 5: The impact of the volume of acquired tangible investments on the amount of agricultural production

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,87134406
R Square	0,75924047
Adjusted R Square	0,74829686
Standard Error	76617,5749
Observations	24

ANOVA

	df	SS	MS	F	Significance F
Regression	1	4,07263E+11	4,07E+11	69,37748	3,00226E-08
Residual	22	1,29146E+11	5,87E+09		
Total	23	5,36409E+11			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	-74297,081	39200,79368	-1,8953	0,071269	155594,5506	7000,3891	-155594,5506	7000,38913
X variable 1	7,75534048	0,931089855	8,329315	3E-08	5,824378313	9,6863026	5,824378313	9,68630264

Source: Statistical Office of the Slovak Republic. Own processing.

It is a known fact that the value of total gross agricultural production in Slovakia is less than the value of the EU average in the long term. The analytical result confirmed the dependence between the amount of gross agricultural production in Slovakia regions and by the number of employees. The analysis showed that the number of employees affected the volume of gross agricultural production to 85%. It follows that the downward trend of the agricultural employment can seriously affect the production ability. The fact remains that employment in agriculture has a long-term downward trend, primarily resulting from technological progress and the increasing labor productivity. In the case of Slovakia, the fall in the volume of the labor force was also influenced by other factors. Primarily it was a significant attenuation of agricultural production, related to the crisis of sales on the domestic market, as well as the low proportion of diversification activities and nonattractiveness of the wage and undoubtedly the financial crisis during the last years.

The analysis showed that the volume of acquired tangible investments affected the volume of gross agricultural production to 76 %. Investments are significant factor that determines to the competitive success of agricultural sector, especially its technical and technological level of production. The analysis showed very strong correlation, but the capital equipment of Slovak agricultural sector in comparison with the EU developed countries represents a reserve of competitiveness growth of Slovak agriculture on the EU markets.   On the other hand, the volume of acquired intangible investment has on the value of gross agricultural production in Slovakia regions very small almost insignificant impact.

Summary

Cieľom príspevku je určenie miery lineárnej závislosti vybraných merateľných ukazovateľov na výšku hrubej poľnohospodárskej produkcie v jednotlivých krajoch na Slovensku. Medzi vybrané merateľné ukazovatele sme zaradili počet zamestnancov za každý kraj a ukazovatele obstarania nehmotných ako aj hmotných investícií v každom kraji na Slovensku v období rokov 2009 -2011. Súčasný stav odvetvia je charakteristický výrazným poklesom produkcie vo výrobných odboroch s vyššou pridanou hodnotou. K zlepšeniu danej situácie neprispievajú ani diskriminačne nastavené podporné mechanizmy na spoločnom európskom trhu, ktorými sa znížila konkurenčná schopnosť nášho poľnohospodárstva a následne aj jeho spracovateľskej sféry. Pre rozvoj poľnohospodárskeho odvetvia je potrebné aj oživenie dopytu po domácej produkcii, bez ktorého by v agrosektore nebolo možné vytvárať nové pracovné miesta.

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ANALYSIS OF HUMAN RESOURCE MANAGEMENT PRACTICES IN COMPARISON OF MNCS SUBSIDIARIES AND LOCAL COMPANIES IN SLOVAKIA

ANALÝZA PRAKTÍK RIADENIA ĽUDSKÝCH ZDROJOV V KOMPARÁCII DCÉRSKYCH SPOLOČNOSTÍ NADNÁRODNÝCH FIRIEM S FIRMAMI LOKÁLNYMI V PODMIENKACH SLOVENSKEJ REPUBLIKY

Abstract (summary): Human resource management is the most frequent concept in management literature. There is no doubt that organizations pay attention to the effective management of human resources because that issue is still more important. The general objective of the human resource management is attracting and retaining highly motivated and productive employees, by using an appropriate policies and practices, which should be approached strategically. The claim that human resources are the organization′s costs is no longer relevant. At present, the concept is rather presented in the context of achieving competitive advantage, or as a means of ensuring organization′s prosperity and finally as a tool to achieve business objectives. The aim of this contribution is to point out the differences in policies, practices respectively trends of human resource management in comparison of MNCs subsidiaries in Slovakia and Slovak local companies.
Key words: Human resource management, multinational companies, multinational subsidiaries, practices, policies

Kľúčové slová: Riadenie ľudských zdrojov, nadnárodné spoločnosti, dcérske spoločnosti, praktiky, politiky

Transfer of human resource management practices in MNC companies
Globalization has created new conditions for the operation of companies associated with the ability to enter into new markets beyond the national borders. Gupta and Govindarajan (2001, in Friedman, 2007) consider that an important condition for the acquisition of the international competitive advantage is that companies entering into new markets integrate local business differences and effectively transfer knowledge and technology across to other countries. However, it should be noted that due to cultural and institutional differences is not always possible to transfer

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human resource management (HRM) practices in other countries, since the way of implementation of HRM practices is strongly influenced by the characteristics of the culture in which the organization operates (Ferner, 1997).

In relatively recent times research carried out has begun to indicate that organizations in different countries are different also in their policies and practices of HRM (Ferner, 1997). He noted, as well as other authors, that the transfer of personnel policies and practices to different countries can be quite difficult (Bae et al, 1997; Hofstede, 1980; Kovach 1994; in Mylonite - Harzing - Mirza, 2004). The main obstacles are associated with the host country culture and the institutional environment.

Poustma et al. (2006) argue that multinational companies (MNC) are often trying to find a balance between the need to standardize its own HRM practices beyond national borders and to adapt them to local practices and customs. Kostova and Roth (2002) have identified this phenomenon as "institutional duality (dualism)." Friedman (2007) has pointed that just an appropriate balance between these two requirements will positively influence the performance of the organization. One of the dominant theories in this field is American management theory. Although this management theory led mainly to the faith of universal HRM practices that can be used anywhere, research shows that managerial attitudes, values and behavior are different with regard to the national culture. There is not the one universal way of managing because the ethnic differences and variations in addition to other factors require different management practices (Mylonite - Harzing - Mirza, 2004).

Cultural values and cultural differences are not the only factors that affect the management and behavior of individuals. Human behavior is also partly dependent on the internal social structures that affect people either as a support or a restriction through their roles and positions in various institutions. (Fay, 1996; Lukes, 1973, In: Mylonite – Harzing - Mirza, 2004). The institutional theory and research in the last 20 years have focused primarily on the influence of social forces in the organizational structure. The main idea is that social institutions systematically affect business practices in the structures and processes that reflect the national pattern. The research attempted to give an empirical answer to how an organization creates an institutional system to be functional for their local environment. (Scott, 1995; In: Mylonite - Harzing - Mirza, 2004). Regarding the transfer of management practices in the host country the question is, what extent are companies able to transfer practices because it largely depends also on the national business environment of the host country and its institutions, which can either facilitate or preclude the transmission. The laws of host countries have also the strong pressures on the environment in which MNCs can significantly reduce the embedded transmission of HRM practices from a parent company. (Beechler - Yang, 1994).

This leads to the question what happens when MNCs try to transfer some of their management practices overseas, especially if the assumptions and values that reflect the culture do not correspond to the receiving host. Failure to adapt the practices of the host country's culture can lead to significant negative consequences that adversely affect the performance of the subsidiary and ultimately the entire company.

Material and Methods
In order to analyse the transfer of HRM practices in the Slovakia the survey was conducted in which we have investigated whether MNC subsidiaries in Slovakia and local companies use the same HRM practices and in which HRM practices these samples differ. Our data collection process took place over a three-month period between August and October 2012. The research was conducted on two research samples. One research sample consisted of subsidiaries of multinational companies (MNCs) operating in Slovakia, kind research sample consisted of Slovak local companies. In the first research sample were polled 1,000 companies (subsidiaries of MNCs) and 320 questionnaires were returned (32% response rate), while in the second research sample were polled 1,000 Slovak companies and 270 questionnaires were returned (27% response rate). Questionnaires were sent by electronic mail.
Individual items of the questionnaire investigated the characteristics and methods of implementation of selected HRM practices. Since the implementation of certain personnel actions may vary depending on the type of job position, the questionnaire items were developed specifically to managerial positions.

Results and Discussion
Planning and filling managerial positions.
Within the analysis of this personnel practice were observed differences between local companies and MNCs subsidiaries. Filling of management positions is formally planned more often by subsidiaries (49, 06%) than local companies (17, 02%). As for the methods that companies use to plan of filling the managerial positions, all of companies in both samples reported as the most commonly used method for the analysis of trends.
In the case of filling managerial positions, both research samples use mostly internal corporate resources (100% of local companies, 74,06% of MNCs subsidiaries) and 22,96% of local companies and 25% of MNCs subsidiaries use also the external sources (candidates on the external labour market).
Significant differences were found for methods that these companies use to occupy managerial positions. Among Slovak companies are the most commonly used methods recommendation by its employees (personal recommendation) (41.85%), well-known recommendations (30%) and evidence of random applicants (21.85%). Subsidiaries the most frequently use methods as online advertising (71.87%) in filling managerial positions, working with personnel - consulting companies (30%) and the evidence of random applicants (24.37%).

Figure 1: Comparison of methods used for occupying managerial positions
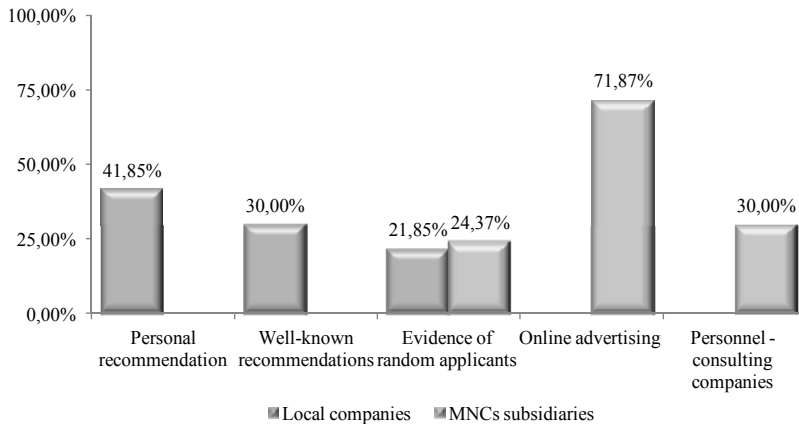
Source: Self elaboration

Another item in the questionnaire asked them what documents are required from applicants for a vacant position significant differences haven´t been detected. In both research samples is the most frequently required CV (91.85% of local companies and 75% of the subsidiaries). Another most frequently requiring documents in a recruitment process are qualification documents and employment history evidences in the case of local companies (74.07%) and reference letters in the case of MNCs subsidiaries (50.31%).

Figure 2: Comparison of documents required from applicants for a vacant position
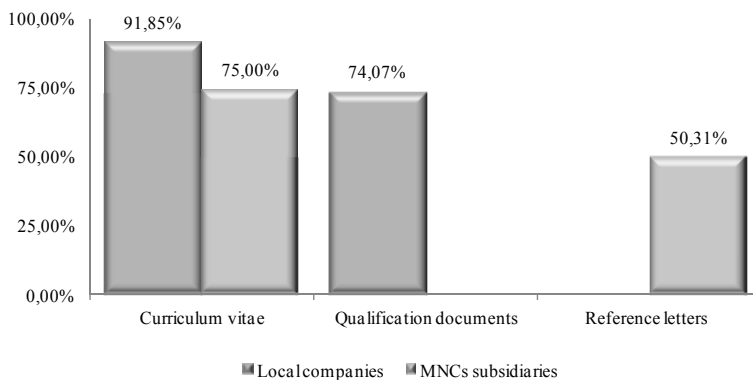
Source: Self elaboration

Training of managers

When analysing this HR practice significant differences between the research samples have been found out. In the case of MNCs subsidiaries 49.06% of the research sample plans training of managers as opposed to local companies where only 17.03% of them plans this personal practice, while 48.12% of subsidiaries plans training of managers on a regular basis. Certain differences have been also found in methods that companies use in training of managers. Among the local companies 71.11% of them use instruction, 60% of them use consultation, 28.88% use coaching and 20% of local companies use assessment centers. In the case of subsidiaries are most frequently used methods coaching (68.12%) and lectures (56.87%) and in contrast to local companies 25% of them filled e-learning as one of the training methods. It is undeniable that training aimed at improving the ability of managers use information technologies and effective methods of training such as e-learning. (Mudrík, 2012)
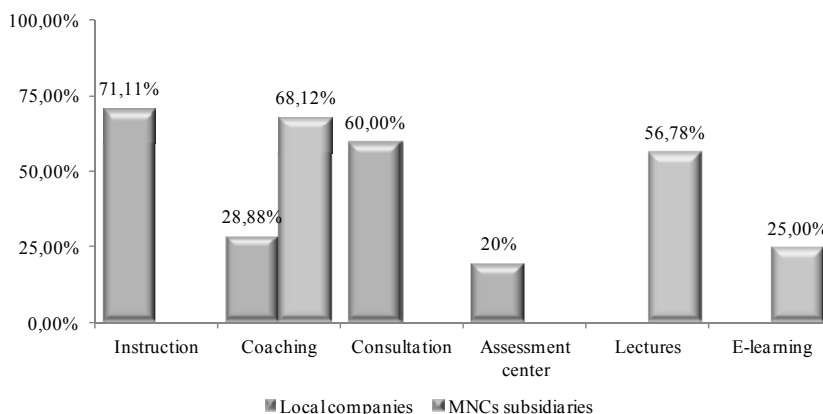
Figure 3: Comparison of training methods

Source: Self elaboration

Employee care programs.

When analysing the employees care practice we have surveyed as workers in managerial job positions have the opportunity to participate in decision-making and management processes in the organization. The results showed significant differences between the two samples. While in subsidiaries 74.05 % of them (53.12% no and 20.93% rather no) have expressed in the negative, in the second survey sample any respondent did not mark an answer not or rather not, 58.14% of them filled yes and 41.85% of them filled rather yes.

On the issue whether the companies make a satisfaction survey of its employees in managerial job positions there were no significant differences, whereas only 32.96% of local companies and 25% of the MNCs subsidiaries have expressed positively and therefore we can say the most of companies from the both of research samples does not perform any employee satisfaction survey.

Figure 4: Participating in decision-making Local companies vs. MNCs subsidiaries
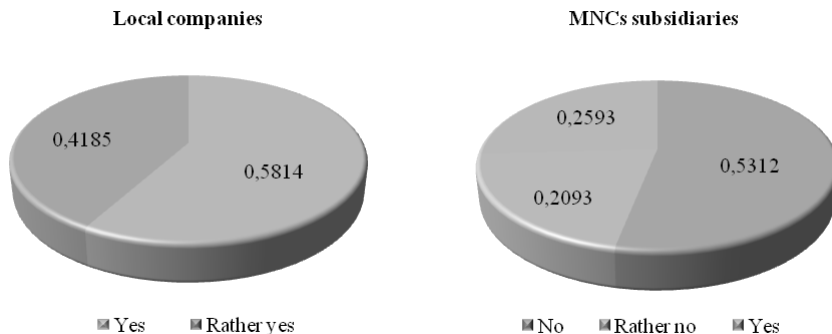
Source: Self elaboration

Analysis of job position

In analysing of this HR practice was found that the majority of subsidiaries (74.06%) does not analyse job positions at all, only 25.93% of MNCs subsidiaries perform the analyse of job positions, 23.43% of them analyse only certain job positions and 2.50% performs the analyse of all job positions.

In the case of local companies, 17,03 % conducted an analysis of all job positions , 32.96% of them performs analysis only for certain job position, 50% of the sample doesn´t perform any job analysis.

As the most used source of information for the analysis of job position in the case of the both of research samples is a job-holder himself. For those methods that are used in the analysis of job positions some differences were found. Whereas in the case of MNCs subsidiaries was listed as the most common used method a questionnaire, in the case of local companies as the most frequently used method is an interview with the holder of job position.

Figure 5: Analysis of job position Local companies vs. MNCs subsidiaries
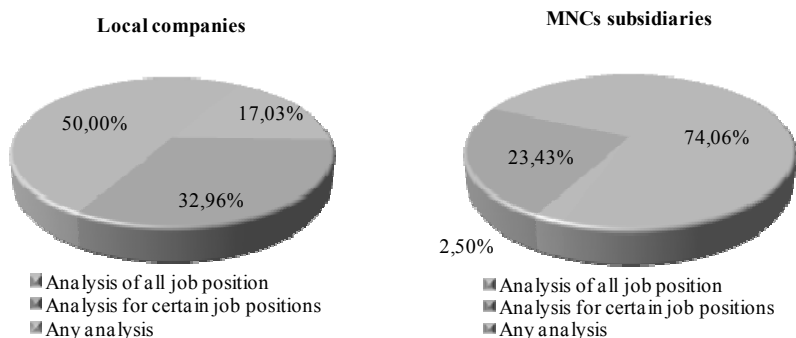
Source: Self elaboration

Performance appraisal

For performance appraisal of managers most of the companies in the both of research samples perform this personnel practice irregularly according to actual needs.

In identifying the methods used in evaluating managers have been founded differences between the research samples. In the case of local companies all respondents stated that evaluation is carried out on the basis of meeting stated goals (100%), while in the case of MNCs subsidiaries is the most commonly used method a rating scale (66.87%).

In the case of the provision of feedback to workers on the evaluation results, 91.11% of local companies said they inform their staff of the evaluation results, while in the case of MNCs subsidiaries was positively expressed only 51.87%.

Differences have been also found in a person who carries out the performance appraisal. In the most of MNCs subsidiaries it is an immediate superior (66.87%) as well as a HR worker (33.12%), in the case of local companies, 82.96 % said that the evaluation is performed by a director, 17.04% said it is done by a superior.

Figure 6: Performance appraisal
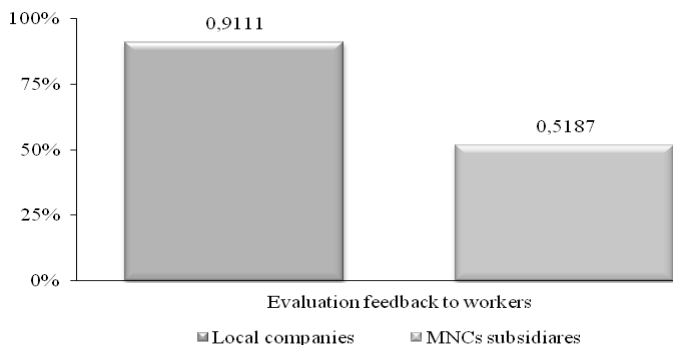
Source: Self elaboration

Rewarding system

In the case of the employee rewarding in managerial job positions have been found some differences between MNCs subsidiaries and local companies in the provision of benefits. In local companies the most often provided benefits are flexible working hours (88.88%), mobile phones (42.96%) and laptop (38.14%), while in the case of subsidiaries the most of benefits are provided in the form of mobile phones (73.12%), the increased number of vacation days (48.12%) and laptop (35.93%). Another item of questionnaire investigated what forms of reward are used in the rewarding of managers, where no significant differences have been detected because the both types of companies use a time payroll as the most often provided reward. (98.14% - local companies, 88.75% - MNCs subsidiaries).

Figure 7: Rewarding system
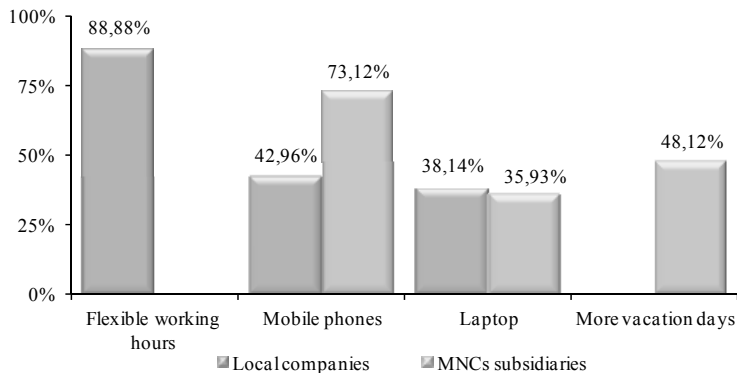
Career planning and development system

For career planning, the most of companies in the both of research samples (91.85% of local companies, 75% MNCs subsidiaries) does not handle the career plans of employees in managerial job positions. Significant differences haven´t been found even in the case of the criteria that companies take into account when shifting employees to a higher position, both companies accept for promotion of workers the same criteria the overall results of the work and exceptional skill.

Figure 8: Career planning and development system (no handling career plans)
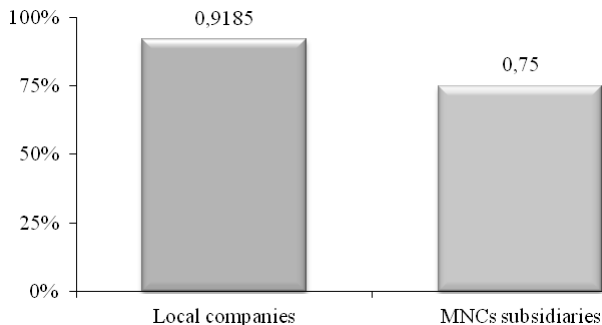
Summary

Zastúpenie nadnárodných spoločností v celosvetovom meradle sa s plynúcim časom proporcionálne zvyšuje, v nadväznosti čoho narastá aj dôraz kladený na optimálny transfer praktík riadenia ľudských zdrojov. Predmetný transfer praktík je charakteristický tak kultúrnymi, ako aj inštitucionálnymi rozdielmi, ktoré sú s procesom transformácie nesporne spojené. Predložený článok poukazuje na zistenia v oblasti rozmanitosti praktík a trendov riadenia ľudských zdrojov a to v

komparácii dcérskych spoločností pôsobiacich na Slovensku, ktorých materská spoločnosť sídli v inej krajine a domácich respektíve tuzemských spoločností sídliacich priamo na území Slovenska. V rámci analýzy boli posudzované nasledujúce praktiky a to je obsadzovanie pracovných pozícií, vzdelávanie, starostlivosť o zamestnancov, analýza pracovných miest, hodnotenie, odmeňovanie a riadenie kariérneho rozvoja. Zistenia majú výpovednú hodnotu o vysokej miera rozmanitosti v praktikách riadenia ľudských zdrojov v komparácia spoločností nadnárodných a tuzemských respektíve domácich. Preto na mieste je konštatovanie, že predmetná problematika vymedzuje nelimitovaný priestor pre nové kreatívne riešenia, no zároveň predstavuje výzvu pre kompetentných preukázať svoje schopnosti, ako efektívneho odovzdávať a etablovať praktiky materských spoločností na spoločnosti dcérske s dôrazom na ich adaptáciu v duchu miestnych podmienok.

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MODEL SAMOHODNOTENIA KVALITY EDUKAČNÉHO PROCESU NAVRHNUTÝ PRE FAKULTU MANAŽMENTU

SELF-EVALUATION MODEL OF THE QUALITY OF EDUCATIONAL PROCESS DESIGNED FOR THE FACULTY OF MANAGEMENT

Abstract: *Self-evaluation is an important and valuable tool in ensuring the quality of education. The main aim of self-evaluation of the higher education institutions (HEIs) is to determine whether the institution meet the defined quality standards. It also allows constantly evaluate and assess the extent to which the educational institution fulfill the quality objectives for the educational process. In the research project (GAMA 11/8) we evaluated the quality of university educational process. The main objective of the project was the implementation of the educational process quality evaluation at the Faculty of Management, University of Prešov and proposal of the self-evaluation model of the quality of educational process. Our assessment of the educational process quality is based on perception of the educational process as a system. Therefore, the actual quality assessment was carried out in the context of a system approach.*
Key words*: Education, evaluation, quality, self-evaluation*

Kľúčové slová: *Vzdelávanie, hodnotenie, kvalita, samohodnotenie*

JEL: A23

Introduction

In assessing the quality of the educational process in practice there are used several methods of evaluation. Methodology for evaluating the quality of higher education is diverse and the use of each method depends on the purpose for which the assessment will be used. They are used both qualitative methods (most surveys), as well as quantitative methods. Each of the used methods must necessarily satisfy two conditions - validity and reliability.

Since some of the evaluation methods have already been used at the Faculty of Management, University of Presov in Presov recent years (e.g. feedback questionnaires), the attention was focused on the evaluation of the quality of educational process from the students perspective. They are key faculty "customers" respectively stakeholders and greatly determine the success and image of the faculty. In addition, they are direct beneficiaries and recipients of university (faculty) services. Another argument for using this method of the evaluation of educational quality is the easy feasibility as well as its time and financial undemandingness.

Material and methods

Specification and determination of criteria for assessing the quality

Based on the study of literature (especially from foreign sources) was created a list of the most important determinants of the quality of education with emphasis on the teaching process itself. The survey results carried out among students allow us to verify the significance of formulated determinants. The aim of survey was to identify and specify the key factors of the quality of education from the perspective of Faculty of Management students. Students were asked to indicate which attributes of the educational process are (from their perspective) crucial in terms of quality and what conditions should be met and provided in order to education process to be considered superior.

Development of a model

The proposed self-evaluation model of the quality of educational process is based on popular quality of higher education concepts. In the following text we would like to justify the definition and selection of quality indicators and criteria.

Quality in higher education has a multidimensional character that complicates the possibility of its measurement and evaluation. Individual researchers have used different methods to measure the quality and use the different quality criteria. Munasinghe & Rathnasir (2011) set five main dimensions of quality when assessing the quality of higher education:

- resources availability,
- information and responsiveness,
- competence of academic staff,
- assessment and monitoring,
- corporate collaboration.

Key stakeholders of university are students and this is the reason why higher education institutions are very interested in student satisfaction. Our evaluation was based on student assessment of quality dimensions of the offered services in order to identify significant areas and consequently improve the quality of services offered. Sophisticated methodology of student satisfaction analysis used Dimas, Goula and Pierrakos (2011). Their analysis was based on a multi-criteria preference disaggregation method (MUSA). The authors defined five criteria of student satisfaction, which were used to quality assessment:

1. Program Study. Within this criterion, the authors define six sub-criteria: adequacy, organization, workload, profession-contiguity, course update, module variety.
2. Academic Staff. This criteria is sub criteria: friendly behavior, preparation adequacy, communication, education methodology, objectivity, informing, availability.

3. <u>Tangibles (equipment)</u>. This includes nine sub-criteria: building adequacy, other facilities, education material, labs adequacy, labs timing, library timing, library's reading room, lending procedures, library's electronic system.
4. <u>Administrative Services</u>. Under this criterion are these sub-criteria: correspondence, friendly behavior, clear informing, service speed.
5. <u>Image-Fame</u>. It consists of five sub-criteria: expectations, recognition, representation-promotion, quality, interdisciplinary.

The creation of a model under which was implemented the assessment of the educational process quality at the Faculty of Management, University of Presov in Presov, has been explicitly ***defined five subsystems*** (main quality dimensions) (Figure 1):

1. Academic staff and their competences,

2. Teaching techniques and practices,

3. Learning outcomes assessment,

4. Assurance, arrangement and effectiveness of teaching

5. Course's importance for practice.

Figure 1 Criteria and sub criteria for evaluation of the quality of educational process

EDUCATIONAL PROCESS
Quality criteria

ACADEMIC STAFF (COMPETENCIES)
- professional knowledge, expertise
- preparedness to teach
- communication skills
- the adequacy of the lecturer's communication to the level of students' knowledge
- quality, timeliness and relevance of the knowledge and information provided by teacher/lecturer
- ability of clearly provide and disclose information
- providing information contently related to the topic
- readiness of response to students' questions
- patience in responding to students' suggestions
- using different methods and techniques of teaching

TEACHING TECHNIQUES AND PRACTICES
- support of independent and active involvement of students in learning
- conduct and encourage students to actively search information
- providing enough space for discussion
- use of activating forms of learning (case studies, problem situations, role playing, brainstorming)
- use teaching methods that develop students' creativity
- acceptance of students' ideas and promoting their creativity
- creation of sufficient interactivity between teacher/lecturer and students
- creating space for critical and independent thinking

LEARNING OUTCOMES ASSESSMENT
- explicitly and clearly defined requirements and evaluation criteria at the beginning of semester
- compliance with the requirements and evaluation criteria formulated at the beginning of semester
- fair and objective evaluation of student performance
- evaluation of students' results and performance based on pre-defined criteria
- criteria for assessing students are measurable and performance
- possibility of re-writing tests or pass the exams
- timely provision of students performance assessment results (results of test or exam)

TEACHING ASSURANCE, ARRANGEMENT & EFFECTIVENESS
- good organization (curriculum layout and time mastering) of lectures and seminars
- proportional distribution of the contentual and time schedule of the curriculum for the entire semester
- compliance with the established teaching schedule
- adequacy of learning tempo
- adequate load respectively total severity of the course
- using a variety of tools, including ICT
- optimal number of students per group
- sufficient learning resources (for the course)
- high quality learning resources

COURSE'S SIGNIFICANCE FOR PRACTICE
- use of practical examples, demonstration of the interconnection between the theory and practice
- meaningfulness and significance of courses for future practice
- solving practical and application tasks (problems) from practice

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The following part is devoted to detailed description of the subsystems and reasoning the sub-criteria that are part of them. For each subsystem and its criteria are indicated the models (or parts of them) that were the basis for the development of our model. The mentioned concepts point out the relevance of selected criteria and sub-criteria (in proposed model).

1. The first area (subsystem) which is necessary to be considered in assessing the quality of the educational process is **academic staff and its competences**. In formulating the list of criteria evaluated within this subsystem we were based on several methodologies published in professional resources. Teacher/lecturer is the most important element of the quality of education. The teacher/lecturer provides a significant part of the higher education "service" and not excluding teaching process itself. For this reason the assessment of competences of academic staff is an integral part of the quality of educational process evaluation.

   In the development of criteria if this subsystem we were inspired by the work of Seldin (1997, in Chen - Yeager, 2011) who defines the characteristics of an effective teacher as follows:
   - treats students with respect and caring;
   - provides the relevance of information to be learned;
   - uses active, hands-on student learning;
   - varies his/her instructional modes;
   - provides frequent feedback to students on their performance;
   - offers real-world, practical examples;
   - draws inferences from models and uses analogies;
   - provides clear expectations for assignments;
   - creates a class environment which is comfortable for students;
   - communicates at the level of his/her students;
   - presents himself/herself in class as "real people";
   - uses feedback from students and others to assess and improve his/her teaching; and
   - reflects on his/her own classroom performance in order to improve it.

   Another methodology for assessing the efficiency of teacher used Hallinger (2010). On a five-point scale were considered inter alia the following aspects (listed only some of them):
   - rate the instructor's ability to communicate clearly (in English),
   - rate the helpfulness of the instructor outside of class,
   - rate the information provided by the instructor in the course outline,
   - rate the instructor's knowledge of the subject taught in this class,
   - rate the instructor's preparation for classes,
   - rate the instructor's punctuality – starting and ending classes on time,

- rate the instructor's feedback on assignments,
- rate the organization of presentations and exercises by the instructor,
- rate the level of reading materials used in the class,
- rate the instructor's patience and clarity in responding to student questions,
- rate the effectiveness of handouts provided by the instructor,
- rate the ability of the instructor to make the course content practical,
- rate the instructor's ability to actively involve students in learning.

Finally Tsinidou, Gerogiannis & Fitsilis (2010) within the criterion "academic staff" indicate six sub-criteria:
- academic qualifications,
- professional experience,
- communication skills,
- friendliness/approachability,
- links with enterprises,
- research activity.

2. The involvement of subsystem **"teaching techniques and practices"** into the proposed model of quality evaluation is related to the fact that currently is the enormous attention paid to the quality of human capital generated by the universities. In this context, the emphasis is given on the development of key skills, especially critical thinking and creativity. They can be developed through using appropriate methods, techniques and practices of teaching.

According to Prabhu a Ramarapu (1994, in Venkatraman, 2007), in many colleges and universities *the quality of instruction in teaching* have been used in measuring and evaluating the quality. Today, higher education institutions intend to provide the students with life-long skills (like communication and thinking) and promote independent learning and creativity. It is possible to implement the principles of TQM in education. TQM addresses mainly the quality of the core processes of higher education. Beaver (1994, in Venkatraman, 2007) states that there are various criteria for classroom teaching and these predominantly include the following with regard to teaching excellence:
- active learning to enhance student involvement;
- mastery of content and the ability to communicate it;
- assessment and other means of feedback about student learning; and
- concern for students' learning and progress.

3. The part of proposed model is the subsystem **"learning outcomes assessment".** Australian Learning and Teaching Council (2008, in Devlin & Samarawickrema, 2010) created criteria for assessing effective teaching.

Criterion 3 of this model is „approaches to assessment and feedback that foster independent learning". This criterion involves also some sub-criteria used in proposed model (under the subsystem learning outcomes assessment).

- integrating assessment strategies with the specific aims and objectives for student learning,
- providing timely, worthwhile feedback to students of their learning,
- using a variety of assessment and feedback strategies,
- implementing both formative and summative assessment,
- adapting assessment methods to different contexts and diverse student needs.

For example (Marsh & Roche, 1994, in Devlin & Samarawickrema, 2010) elaborated SEEQ dimensions which inter alia involve:

- Examinations/grading: Feedback and perceptions of fairness and relevance of assessment tasks (SEEQ Dimension 7),
- Assignments/reading: Consideration that the prescribed readings are valuable and meaningful (SEEQ Dimension 8).

4. Important part of the quality evaluation is **teaching assurance, arrangement and effectiveness**. Curriculum falls into this subsystem. Tsinidou, Gerogiannis & Fitsilis (2010) set seven criteria for evaluation of the factors that determine quality of higher education. One of this criteria is curriculum structure which consists of seven subcriteria:
   - interesting module content/books,
   - educational material of high quality,
   - efficient structure of modules,
   - availability of information on the module structure,
   - variety of elective modules/modules on specialization areas,
   - laboratories (connection with market demands),
   - weekly timetable.

5. It is hard to separate the area "assurance, arrangement and effectiveness of teaching" and **course's importance for practice**. Some authors, for example Venkatraman (2007) do not isolate these two areas (subsystems). As the author sets: the typical terms of reference pre-defined for course evaluations provide:
   - course aims and objectives,
   - the overall breadth and depth of the syllabus,
   - topic sequencing;
   - horizontal and vertical integration in relation to other courses in the course,

- relevance in relation to the needs of industry and students' vocational needs,
- how current the course is in relation to technological developments and practices in industry,
- course documentation,
- the potential for developing creative thinking/critical reasoning/practical problem-solving and promoting life-long learning,
- opportunities for independent study or self-directed learning,
- relevance and effectiveness of instructional materials and instructional methods/ process,
- appropriateness and effectiveness of assessment methods,
- student performance (in terms of knowledge gains, thinking process, skills
- acquired),
- student learning attitudes, motivation, approaches and difficulties,
- resources (library resources, space, equipment, staff expertise, etc.),
- overall effectiveness in achieving the aims/objectives set out for the program,
- course and the graduate profile.

Results and discussion
Self-evaluation model of the quality of educational process
Following existing (domestic and foreign) methodologies for evaluating the quality of the educational process at universities we have created the self-evaluation model of the quality of educational process in the context of quality assessment CAF which is currently implemented at the University of Presov in Presov (and the Faculty of Management as its part). Based on the established model was implemented partial evaluation (student evaluation) of the quality of educational process at the Faculty of Management. Self-evaluation model represents a reliable, objective, efficient, compatible and potentially accepted measurement tool for the educational process quality (and its attributes) assessment at Faculty of Management. Its periodic and continuous using enables to measure progress and monitor changes over time. Self-assessment done via student evaluation (questionnaires) made it possible to identify the problem areas and revealed a number of shortcomings which would be eliminated to improve the education quality at the Faculty of Management. Figure 2 graphically illustrates the individual phases and areas of assessing the educational process quality at the Faculty of Management. Table 1 provides the characteristics and description of the different phases of the evaluation process including responsibilities for each phase.
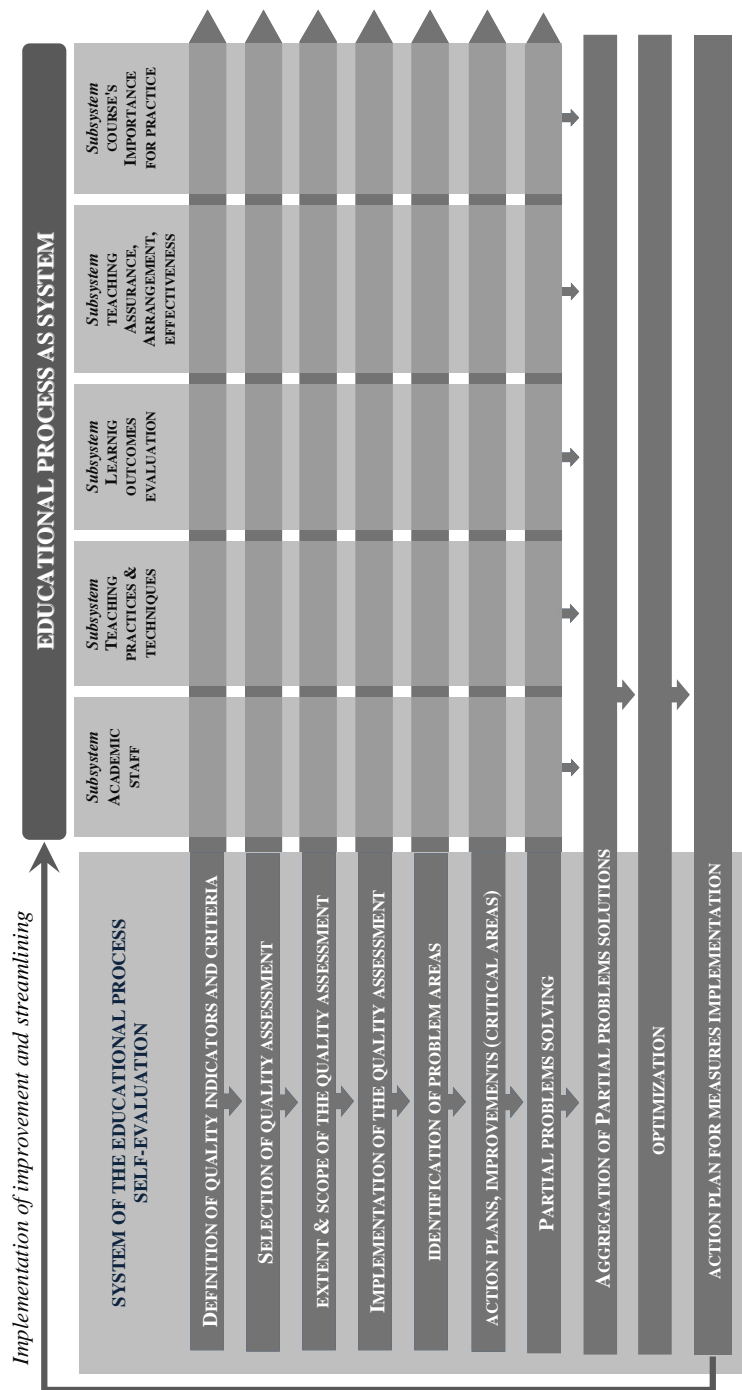
Table 1 Characteristics of individual phases of evaluation process

PHASE	CHARACTERISTICS, DESCRIPTION	RESPONSIBILITY
Definition of quality indicators and criteria	⬩ Definition of quality indicators and criteria which will be the basis for evaluation. ⬩ Part of this phase can be a prioritization of quality indicators (scoring method or paired comparisons).	This phase carried out the evaluation team after the approval of the HEI's management
Selection of quality assessment	⬩ The choice of one or a combination of more methods of evaluation (external / internal independent evaluation / self-evaluation, etc.). ⬩ Selected methods must be valid and reliable.	This decision made on the HEI's management upon recommendation of the evaluation team
Extent and scope of the quality assessment	⬩ Selection of courses that will be included in the evaluation (what field of study, year of study, form of study, etc.). ⬩ It is important to identify a set of key courses affecting the graduate profile. Evaluated should be primarily "essential" courses.	The decision about the evaluation scope and extent as well as selection of courses covered by the assessment made the HEI's management upon recommendation of the evaluation team
Implementation of the quality assessment	⬩ The execution, realization of the evaluation process based on the selected methods.	This phase implements an independent evaluation team (due to the objectivity the team members would not be a person - teacher who is affected by the evaluation (e.g. teacher whose course is assessed)
Identification of problem areas	⬩ An integral part of the identification of problem areas is a decision which problem areas requiring immediate improvement and which areas will be addressed later. ⬩ The outcome of this phase is the creation of an assessment report that summarizes the key findings and recommendations.	The evaluation team determines prior problem areas and prepares assessment report. The report should be submitted to the HEI's management or leaders.
Working out an Action Plan containing improvement measures in the critical areas	⬩ The Action Plan sets out areas for improvement and includes specific actions and steps. ⬩ The part of action plan is a list of the necessary (needed) resources and time frame of implementation steps. ⬩ Desired outcomes are expected improvements and these results must be observable, measurable, and time-realistic.	This activity carried out HEI's management based on documents and recommendations of the evaluation team.

Partial problem solving	⧫ Troubleshooting and removal of shortcomings in the problem areas (that were considered and recognized as areas requiring immediate improvement)	For solving partial problems are responsible all persons concerned - management of the HEI or college, academic staff, other staff.
Aggregation of partial problems solutions	⧫ The basis for aggregation is modeling. ⧫ This involves an assessment of the overall impact of the sub-problems (partial problems) solving.	This activity carried out HEI's management based on documents and recommendations of the evaluation team.
Optimization	⧫ In this phase there is implementation of the proposed improvements and rationalization changes that result in the quality improvements of the educational process.	This activity carried out HEI's management in collaboration with the evaluation team.
Working out an Action Plan for measures implementation	⧫ The Action Plan sets out all areas for improvement and includes specific actions and steps. ⧫ The part of action plan is a list of the needed resources and time frame of implementation steps. ⧫ Desired outcomes are expected improvements and these results must be observable, measurable, and time-realistic.	This activity carried out HEI's management based on documents and recommendations of the evaluation team.

Source: authors (own processing)

Figure 2 Evaluation model of the quality of educational process

Implementation of improvement and streamlining

EDUCATIONAL PROCESS AS SYSTEM

| *Subsystem* ACADEMIC STAFF | *Subsystem* TEACHING PRACTICES & TECHNIQUES | *Subsystem* LEARNIG OUTCOMES EVALUATION | *Subsystem* TEACHING ASSURANCE, ARRANGEMENT, EFFECTIVENESS | *Subsystem* COURSE'S IMPORTANCE FOR PRACTICE |

SYSTEM OF THE EDUCATIONAL PROCESS SELF-EVALUATION

- **DEFINITION OF QUALITY INDICATORS AND CRITERIA**
- **SELECTION OF QUALITY ASSESSMENT**
- **EXTENT & SCOPE OF THE QUALITY ASSESSMENT**
- **IMPLEMENTATION OF THE QUALITY ASSESSMENT**
- **IDENTIFICATION OF PROBLEM AREAS**
- **ACTION PLANS, IMPROVEMENTS (CRITICAL AREAS)**
- **PARTIAL PROBLEMS SOLVING**
- **AGGREGATION OF PARTIAL PROBLEMS SOLUTIONS**
- **OPTIMIZATION**
- **ACTION PLAN FOR MEASURES IMPLEMENTATION**

Source: authors (own processing)

Theoretical background of the quality in higher education is very broad. Proposed model is based on several concepts of quality of education and has been adapted to the specific conditions of the Faculty of Management. Based on the proposed model has been carried out the initial assessment of the educational process at the Faculty of Management. Evaluation results yielded some surprising results and helped reveal critical areas of education quality (those are not the subject of this contribution). The implementation of the model in real conditions helped clarify some phenomena and facts and revealed the possibilities of its enhancement.

Súhrn

Samohodnotenie predstavuje dôležitý a cenný nástroj zabezpečovania kvality výučby. Hlavným cieľom samohodnotenia vysokých škôl je zistiť, či spĺňajú stanovené normy kvality. Umožňuje im taktiež neustále hodnotiť a posudzovať, do akej miery sa im darí plniť ciele v oblasti kvality edukačného procesu. V rámci vedeckého projektu GAMA 11/8 sme hodnotili kvalitu edukačného procesu na vysokých školách manažérskeho zamerania. Hlavným cieľom aj výsledkom projektu bola realizácia hodnotenia kvality edukačného procesu na Fakulte manažmentu Prešovskej univerzity v Prešove a tvorba modelu samohodnotenia kvality edukačného procesu. Pri hodnotení kvality edukačného procesu sme vychádzali z ponímania edukačného procesu ako systému. Z toho dôvodu sa samotné hodnotenie kvality uskutočnilo v kontexte systémového prístupu.

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