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THE RELEVANCE BETWEEN PRODUCT LIFE CYCLE AND BUSINESS MODELS: FIELD WORK IN THE ELECTRONICS INDUSTRY

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Abstract

Companies with superior technology do not often succeed in market entry. Various preceding studies have found that the choice of business model has a close relation to the success or failure of market entry. However, in many past cases, companies that chose a similar business model included both successful and failed entries. In this research, case studies on electronic products, such as a liquid crystal display television and a digital camera, were analysed. The results showed relevance between various stages of the product life cycle and business models. In particular, changes in the following two elements during each stage of the product life cycle were related. The first element was the degree of vertical integration or horizontal specialisation of the companies in the industry. The second element was the degree of product standardisation or customisation. In conclusion, choosing the most suitable business model for market entry is possible by focusing on the above-mentioned factors.

Key words: *product life cycle, business model, field work, electronics industry*

1. INTRODUCTION

The purpose of this research is to study the relationship of the market environment of the company, the business model and the competitive advantages. Companies with superior technology do not often succeed in market entry. Various preceding studies found that the choice of business model has a close relation to the success or failure of market entry (i.e., Amit and Zott, 2001; Chesbrough and Rosenbloom, 2002; Porter, 2001). However, in many previous cases, companies that chose a similar business model included both successful and failed entries. In other words, a specific business model does not always have a competitive advantage.

According to the SCP (Structure, Conduct, and Performance) paradigm (Mason, 1939; Bain, 1956) in the theory of industrial organisation, the performance of the company depends on the industry structure as well as on the activity of the company. Even if the business model of a given company is similar to that of another, it is thought that the superiority and inferiority of the business model might change due to differences regarding the external environment surrounding said company. The external environment comprises an industrial structure, the competition and the positioning of the product within the market. Also, the external environment may not be a static state determined by the industry or by the product uniquely. There are both succeeding companies and companies that do not succeed, although the industries, the products, and the business models are similar. The external environment is dynamic, meaning that it can change at any time. If the external environment changes, the appropriate business model of a company might change in response.

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Many previous research studies explain factors that change an external environment using the product life cycle, e.g., the change of a market represented by the Diffusion of Innovations theory of Rogers (Rogers, 1962) and/or the change of a technique represented by the S-Curve theory of Foster (Foster, 1986). This research is based on a viewpoint that the external environment surrounding a company is dynamic, and changes in the external environment can influence the superiority and inferiority of the business model. Particularly, this research uses a case study of some companies from the electronics industry. The electronics industry has a tendency for intense market and technological changes, and a product life cycle within this industry is comparatively short. In recent years, many Japanese companies in the electronics industry have experienced great achievements and great disappointments, all in one fell swoop. This research analyses those differences.

2. THE REVIEW OF PRECEDENT RESEARCH

2.1 SCP paradigm

Pioneer industrial organization theories include the theory by the Harvard school and a theory by the Chicago school. E.H.Chamberlin and E.S.Mason in the 1930s were pioneers in deriving industrial organisation theories (Chamberlin, 1933; Mason, 1939). J.S.Bain and R.E.Caves created a scheme during the 1950s and 1960s (Bain, 1956; Caves, 1964), and C.Kaysen, D.F.Turner, and F.M.Scherer further developed said scheme (Kaysen, 1556; Turner, 1969; Scherer, 1965). The scheme was basically an SCP paradigm and intensity - profit ratio hypothesis. They hypothesised industrial organisation as a type by Structure, Conduct, and Performance leading to an intensity-profit ration hypothesis. Structure is a characteristic of market organisation that affects the competition and the pricing. Conduct is the action that each company performs in consideration of the supply and demand conditions of the market, along with the strategies of other companies. Performance is resource allocation effectiveness and diversification of the economic power. These three constructs might have the following causal association:

Structure(S) => Conduct(C) => Performance (P)

The Intensity - profit ratio hypothesis posits that a high profit ratio in the competitive market will exist where high market intensity exists. Conspiracy and the cooperative behaviour between companies can easily occur in an oligopolistic firm and in a monopolistic industry. In addition, by the act of a competitive restriction protected by high entry barriers, excess profitability is easy to attain and increase.

2.2 Business model choice and a company border

The business model is the keyword of this study, and there are various definitions of this keyword. For example, Porter explained the business model using a value chain and a concept called the trade-off (Porter, 1996). In this definition, the business model is determined by the choices (trade-offs) made by the activity group, which then constitute a value chain. Porter notes that the combination of trade-offs of activities is determined by the fit of the strategy. In other words, the choice of activity, which constitutes a value chain, decides the border of the company.

Traditional arguments about the borders of the companies include a theory posited by Coase. Coase noted that the border of a company was determined by the choice of market transactions and/or the internal organisation of the company (Coase, 1937). Williamson further developed this thought as a theory of the transaction cost and noted that the border of the company was determined by a

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comparison between internalisation costs and various transaction costs with the external environment (Williamson, 1981).

Porter explains the choices of activities, which constitute a value chain, by taking into consideration the cost and the performance (Porter, 1980b). For example, Porter uses a decision-making problem looking at the vertical integration of a finished product from raw materials in the whole industry. The range of the vertical integration is judged from the degree of the reduction in cost by scale merit and the economies of scope by internalising the activity. Alternatively, the migration barrier height could be the main challenge. The migration barrier is the cost for other companies to switch their strategies and business models. If the migration cost is high, the market moves closer to either a monopoly or an oligopoly state.

2.3 A company border and innovation

The above-mentioned arguments could almost be based from a cost point of view or the cost performance in relation to the border of the company. On the other hand, judging from a viewpoint of innovation, some believe that the traditional Chandler type thought (i.e., Langlois, 2003; Lamoreaux et al., 2003; Sabel and Zeitlin, 2004) becomes the tacit premise for the above mentioned arguments. The important industry technologies up until the mid-20th century were led by the closed innovation of European and American vertical integration type companies. This vertical-integration type corporate model suppressed the technical dissipation risk and maintained mass production through high throughput technology. The vertical-integration type company realised a global scale of economies and evolved (Chandler, 1977, 1990; Lamoreaux et al., 2003; Buckley and Casson, 1976).

However, cases such as the strategic alliance on a global scale increased rapidly from the late 1980s. Furthermore, the vertical-integration type structure does not necessarily apply to industries such as the computer industry, which employs horizontal specialisation or outsourcing. The utility of closed innovation seems to decrease. Industrial development cannot be explained only by a model in which a multidirectional vertical-integration type company leads (Langlois and Robertson, 1992, 1995; Sturgeon, 2002; Aoki and Ando, 2002). For example, Badaracco already notes the end of the vertical integration paradigm in his book "The Knowledge Link" from the early 1990s and accuses the creation of strategic alliances as a means to grow business (Badaracco, 1991). The closed innovation Chandler type thought all the necessary financial resources were developed and owned internally, but managing this has faded.

Various types of previous research studies have analysed a given company's relationship with outside organisations, such as a corporate group, network organisation, strategic alliance, and industrial clusters (Chesbrough, 2003). Chesbrough notes the fluidity of the knowledge and the appearance of venture capitalism as a backdrop for the opening innovation (Chesbrough, 2003; Chesbrough et al., 2006). The complementary goods of two companies, which constituted a system, became easily produced by standardising interfaces according to Hagel and Singer (Hagel and Singer, 1999). As a result, company networks in which specialist companies cooperated were formed. The company network model became competitive with the huge company of the vertical integration type.

Gawer and Cusmano coined the term "industrial ecosystem" to describe these types of company networks (Gawer and Cusmano, 2002). Gawer and Cusmano defined "platform leadership" as the ability to encourage other companies to innovate complimentarily around a given, specialised fundamental technology on a widespread industrial level. The platform is only a core component in a product or service produced by various companies. However, a platform and complementary components and services together as a whole are more valuable than the sum of their parts.

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2.4 Innovation and product design (the product architecture)

Baldwin and Clark emphasised the importance of the concept of modularisation (Baldwin and Clark, 2000). They suggested a module as a concept to simplify a complex system through an analysis of the computer industry. The module is a subsystem that can be designed independently and functions in total integration. The complex system is broken down into each module based on a design rule, and there is no interdependence between the modules. Because each module can be researched and developed independently, business processes become more effective. In addition, a complex system becomes easier to manage, parallel work becomes easier to coordinate, and influence of the uncertainty of other components becomes easier to remove. Because the design rule is open, the technical acquisition and technology transfer are easy to be performed. A venture company can be specialised in the research and development only for specific modules and thus more easily enters the market.

On the other hand, Clark and Fujimoto suggested the concept of the integral type as a converse of the modular type, based on a research of the auto industry (Clark and Fujimoto, 1991). The concept of the integral type means that the designs of subsystems depend on each other and that adjustments between subsystems are necessary. Fujimoto discussed the relationship of a product's design and the organisational design as a business architecture using the concept of the integral type. Fujimoto clarified the competitive advantages of integrating the making of a product and a process. The design of the whole product and process is optimised by designing a product and the process in an integral format, which improves the cost performance. In addition, a product and a process become the black box by making the design of a product and the process a complicated integral model; therefore, the inimitability rises (Fujimoto et al., 2001).

2.5 Modularity and standardisation

The concept of the modularity (becoming a modular) is related to standardisation. The theoretical research of standardisation began with a research of network externality (Katz and Shapiro, 1985). When the actions of other users influence the utility of a certain user, it is said that externality is strong. In the network industry, externality is observed frequently (Yoda, 1999). The utility of joining a network is higher in a communicative network with many participants. Furthermore, the number of supplemental suppliers providing applications and services for the network increases if the number of participants in a certain network increases.

Network externality strongly functions within many industries, including the electronics industry. According to Katz and Shapiro, network externality regarding interface standards works in the case of a system that is comprised of hardware and software (Katz and Shapiro, 1994). By the digitisation of the product, a new and competitive pattern through this network externality is born. With the product of the modular architecture containing many interface standards between components, competition over the definitive interface standard occurs frequently.

According to Rohlfs, the following phenomena are caused by positive feedback from the network externality (Rohlfs, 1974). When the number of users of a certain technical standard exceeds a certain scale called the critical mass, the standards spread automatically. However, the network may decline when the number of initial members is not beyond critical mass. When critical mass is surpassed, the lock-in effect for the standard then functions and becomes an entry barrier for a competing company. Various strategic behaviours, such as the strategic pricing in the industry that a network externality strongly influences, can be explained. When critical mass is accomplished, a certain technique is

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established as a standard. Multiple standards may finally coexist, or one standard may survive exclusively.

When compatibility is important, a large profit is easy to realise if a certain technique is established as a mainstream technical standard; otherwise, profit becomes hard to obtain. Therefore, fierce standardisation competitions are often performed, though standards may also be unified before production between companies to avoid such competition. In the process that a technical standard establishes, cooperation and competition between companies occur frequently. If a market is enlarged, a given company takes an opening strategy in cooperation with other companies. If a company aims for the exclusive possession of the profits, a closed strategy to compete with other companies is taken (Brandenburger and Nalebuff, 1996).

2.6 The product architecture and the border of the organisation

As stated above, there is fitness between the product architecture and the inter-organisational relation. If the interface between each part constituting a product becomes modular, the need for and the frequency of communication in an associated development of products and processes decrease. The inevitability to internalise and assimilate developers of different modules at the same organisation decreases. Sanchez and Mahoney discussed modularity concerning an organisation (Sanchez and Mahoney, 1996). The development tasks are divided by modularity. The divided tasks are performed by a loosely coupling the structure of the development organisation autonomously and concurrently.

On the other hand, Han shows the following based on the research of the development process of motor parts suppliers (Han, 2000). It is necessary to build strong cooperation between companies because the components being built have high interdependence. In today's auto industry, removing the interdependence problem by controlling the interface between the components beforehand is difficult. It is necessary for the adjustment between sections to be strengthened and to raise the speed of the formation and implementation of the solution to this problem. Internalising development and production organisation to perform development and the production of an integral product having high interdependence are desirable.

2.7 Horizontal specialisation in the recent electronics industry

In recent years, horizontal specialisation has advanced rapidly in the electronics industry. Nobeoka notes the areas in which horizontal specialisation have advanced (Nobeoka, 2006). There has also been a decline in the cost of integration. Through the computerisation and the digitisation of many products, modularisation has also advanced. Like a CPU (Central Processing Unit) and the hard disk of the PC (Personal Computer), the function of the PC was realised by putting components of separate companies together. If the assembling of components is difficult, internalising the component will lower the integration cost. If assembling is simple, it is easy to assign components to an outside company.

In addition, the rise of the specialised company is included. If the integration cost is low, the merit of a company that specialises in specific components is high. A competitive advantage is easy to attain through a narrow technical concentration. In addition, large economies of scale are enjoyed by an increasing number of customers. As a result, there are many cases in which a specialised company of a component and/or software leads in the standardisation of its industry. On the other hand, in rising nations such as China, manufacturing capacity rises faster than the ability for fundamental research and product development to be conducted can. In rising nations, the companies that have specialised production increase their viability, and the horizontal specialisation advances further (Nobeoka et al., 2006).

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Furthermore, the mass customisation model is one type of business model that fits such changes of industrial structures (Pine, 1993). Porter proposed differentiation and cost leadership as a competition strategy (Porter, 1980a). According to Porter, it is important to choose either strategy. The mass customisation model is placed within the strategy that put both differentiation and cost leadership together well. A product is modularised and standardised and produces it in large quantities and realises low cost. At the same time, a product is matched with the demand presented by each customer as closely as possible, which raises its value.

2.8 Product life cycle

An S bend model of the technological changes explains the relationship between a product's life cycle and the Change in Technology (Foster, 1986). The time and resources spent on a given technology development are represented on the X axis. When the Y-axis plots a development, a technological change is displayed in an S bend. An early technological change advances at a slow pace and gradually accelerates. Progress slows down eventually as it approaches its ceiling. The speed of the technical development and the functional improvements decreases in the latter half of the S-Curve. A further injection of resources does not necessarily bring about a large improvement in results when the breakpoint of the function improvement is approached via a technical characteristic. In addition, customer needs affect the slowdown of the technical development. In other words, the technical level exceeds the customer needs level sometimes by continuing to improve functions with technical development. Further function improvement beyond this point is unnecessary. The technology race continues until the functional level of the product reaches parity with the customer needs level, and a technical leader wins. When the level of the function arrives at the level that a customer is satisfied with, the companies enter into excessive competition, and price competition intensifies. The technological change then shifts to a new S-Curve discontinuously when a new technique and customer value are created. Christiansen and many other researchers develop this theory further.

Regarding product life cycle and the action change in property of consumers, an argument posited by Rogers is included. The innovator theory concerns the diffusion of innovation, which Everett Rogers proposed (Rogers, 1962). Rogers classified consumers purchasing a new product into five types: Innovator, Opinion leader (Early adapter), Early majority, Late majority, and Laggard. The distribution of consumers among these five types follows a Bell Curve. Rogers expressed this Bell Curve in the S bend, a cumulative frequency distribution curve of the product diffusion. He discovered that the S bend suddenly increased by 16% for those products that added innovators and opinion leaders to their consumer base. Furthermore, Rogers insisted that the tipping point of product diffusion was the inclusion of an opinion leader. Rogers' innovator theory considers the cognitive limits of the utility of innovation.

On the other hand, Geoffrey Moore opposed the common view of innovation diffusion through his belief of how an opinion leader holds the key to product diffusion (Moore, 1991). Similar to Rogers, Moore focuses on the utility of the innovation but makes a new claim that there is a split in how the utility of the innovation is valued. Moore described a large gap (chasm) of product diffusion into the market pertaining to the hi-tech industry in the frequency distribution curve of the innovator theory. Lying between an early adapter (the initial market) and the early majority (the mainstream market), there is a "chasm" (a deep ditch) that is not easily crossed. If a new product does not cross this chasm produced by the different preferences of the customer segment, the product disappears without entering the mainstream market. One cause of the chasm is that the utility of the product after adoption by the early majority is different from the utility before adoption by the early adapter. The early adapter wants to be the first to use the product before anyone else. The early majority does not

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want to purchase the product after the majority of consumers have adopted the product. For the early majority, when other people use the product, it is a validation of their own decision to purchase the product. If a product is adopted only by few early adapters, the early majority does not follow the early adapters in purchasing the product. Thus, creating utilities for the early majority, unlike those of the early adapter (an opinion leader), is necessary for the product to cross the chasm and enter the mainstream market.

In addition, Moore discusses the relationship between the product life cycle and the business model of the company (Moore, 2005). In a complex-system business model, the consulting-like individual solution for a complicated problem is provided. In a complex-system business model, the customers are mainly large companies. On the other hand, a company employing a volume operation business model adopts a standardised product and business process intended only for mass market producing. The intention of this business model is not to serve corporate clients, but it is basically a business model for consumers. The volume operation model is interdependent with a complex system model. The volume operation commoditises the market category created by a complex system. The complex system creates a new level of complexity. Because the characteristics of both are unique, realising both business models at the same time is a difficult task. Moore notes that it is important for a strategy to fit the choice of the business model.

2.9 Product architecture and product life cycle

Regarding the above-mentioned product architecture and the relationship of the organisation, previous research exists based on a dynamic viewpoint. For example, Kusunoki and Chesbrough posit a theory called the trap of the modularity (Kusunoki and Chesbrough, 2001). An organisational structure has a close relation with the product architecture. According to Kusunoki and Chesbrough, the product architecture has the dynamics of the cycle model. The product architecture varies from an integral to a modular and then returns to an integral again. For example, by accumulation of knowledge regarding the interaction of components, the interface between the components becomes clear. Then, the architecture becomes modular. On the other hand, the interdependence between the components can increase when the basic technique of the product changes. Conversely, a company may strategically change the architecture, and the product architecture may shift from a modular to an integral or vice versa. In this way, the product architecture changes in industrial competition. The company that fit the former product architecture may lose competitiveness. For example, a company that changes its organisational structure to adapt to a modular type cannot cope when innovation is occurring, thus the architecture shifts to an integral type. The change of the architecture might change the specialisation structure between companies remarkably.

3. RESEARCH QUESTION

The above-mentioned theories in influencing the choice of the business model are summarised below. The choice of the product architecture and the architecture of the process become the key concepts. Externalisation of an organisation is desirable if the integration cost of the component is low is, and internalisation is desirable if integration cost is high. The degree of the standardisation is chosen by the technical level and has a relationship with the customer value.

In addition, it is thought that the above-mentioned point changes according to the stage of the product life cycle.

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Therefore, to study the research question of this article, the business model is dynamically analysed in conjunction with the life cycle of the product.

The following are the hypotheses: In the first stage of the product life cycle, some believe that a given organisational structure does not begin as a horizontal specialisation structure. The interface is not standardised, and it is thought that the integration cost is high. In addition, it is thought that a specialised company with a horizontal specialisation is hard to find because the market size of the product is relatively small at this point in time. Generally, a market of a new product is a small niche market first. Creation of the finished product requires the use of custom components. The finished product is designed as a high value-added product, and the organisational structure is of the vertical integration type. The professional makers of the component, the OEM (Original Equipment Manufacturer) company and the ODM (Original Design Manufacturer) company, make their presence and involvement known when a market spreads, also known as the period of growth within the product life cycle. At this point, the organisational structure evolves into a horizontal specialisation model. When a company with a horizontal specialisation model obtains a competitive advantage, the component switches from being labelled as a custom component to a standard component. When a standard component obtains a competitive advantage, the company supplying a standard component begins integrating in a vertical direction. In other words, it is thought that the supply chain of the finished product or at least some of the processes become integral.

In other words, the product architecture of the finished product (module / integral), the integration degree of the organisation (vertical integration / horizontal specialisation), and the standardisation degree of the component (standard component / custom component) vary with the product life cycle of the finished product (the maturation value of the market). These are arranged in the product life cycle order as follows:

(1) A vertical integration (internalisation) = custom component

(2) A horizontal specialisation (externalisation) = custom component

(3) A horizontal specialisation (externalisation) = standard component

(4) A vertical integration (internalisation) = standard component

These were schematised (figure 1.).

4. CASE STUDIES

Based on the aforementioned research question, two case studies in the electronics industry are presented.

4.1 The change to liquid crystal television and the peculiar part

4.1.1 The creation of the liquid crystal television (introduction)

Japanese companies led the development of the liquid crystal television and the liquid crystal panel, and the market share of the Japanese companies was initially high. Japanese companies accounted for more than 50% of the global market share of the liquid crystal panel sector in 1999 (Deloitte Touche Tohmatsu LLC eds., 2008). The market share of Korean companies, such as Samsun and LG, was the second highest. The major Japanese companies producing liquid crystal televisions, such as Sharp and Hitachi, Ltd., Toshiba, and Panasonic, adopted a vertical-integration organisational structure type. Image processing LSI (large Scale Integration circuit) and all of the main components such as the

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liquid crystal panel were manufactured internally. The T-CON (Timing Controller), which was one of the main components used in liquid crystal panels, was an exclusive custom component made by ASIC (Application Specific Integrated Circuits).

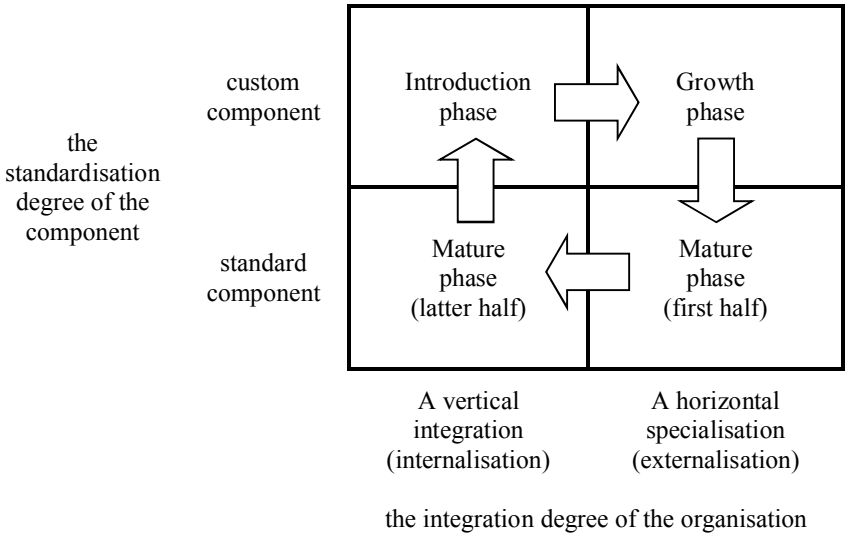

Figure 1: The product life cycle and business models

4.1.2 The period of growth of the liquid crystal television

During the growth period of this product, specialised makers of the liquid crystal panel gained power; these were Taiwanese companies mainly, and AuO Corporation, CMO Corporation, CPT Corporation evolved (Shintaku et al., 2006). Famous makers such as American Vizio Corporation appeared. These makers purchased liquid crystal panels and other main components such as the image processing LSI from specialised makers. They then placed orders externally to EMS (Electronic Manufacturing Service) companies, such as Taiwanese Hon Hai Precision Industry Corporation, to manufacture the final product. Companies using a vertical integration model, such as the aforementioned Japanese and Korean companies, came to purchase less complex or pricey components from specialty makers as well. In other words, vertical integration companies began to shift to a horizontal specialisation model. The performance of the liquid crystal panel, such as high accuracy or the high speed, evolved during this period. Additionally, the T-CON, which was the main component that controlled the performance of the liquid crystal panel, was a custom component made by ASIC (the peculiar part). Liquid crystal panels with superior pictures were made by further developing the T-CON, which was most suitable for all liquid crystal panel products. In other words, the liquid crystal panel was still a product of the integral type. The resources of the competitive advantages of the ASIC maker at this stage were high technology, an original patent, and high quality.

4.1.3 The mature phase of the liquid crystal television (the first half)

The Japanese makers that had targeted high price ranges and high added value mainly adopted the vertical integration business model. However, low-priced TVs created by the organisational structure

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of the horizontal specialisation type became more prevalent within the market (Shintaku et al., 2007). The increasingly high picture quality level was beyond the level of customer needs, as customers could no longer distinguish between the highest quality pictures and those of lesser quality. Additionally, the price competition of the TV maker intensified in rising markets, such as China. The main component changed from the ASIC made component, which was a custom component, to ASSP (Application Specific Standard Produce), which was a standardised component. In other words, the integral nature of the component to the panel decreased and the modularity advanced. The competitive advantages of the component producer in this stage include cost competitiveness, development power of ASSP, and marketing power.

4.1.4 The mature phase of liquid crystal televisions (the latter half)

The competitive focus in the TV market shifted from quality to price. On a company level, the integration of the supply chain began as well as the reduction in cost of the component. In the PC industry, DELL Corporation reorganised a supply chain and realised a price reduction. The reorganisation of the supply chain at Dell Corporation was an example of vertical integration in that it was different from the old vertical integration in the industry, which had evolved into a horizontal specialisation model. A similar reorganisation of the supply chain began in the liquid crystal television industry. The TV maker purchased liquid crystal panels up until this point but began showing a stronger tendency to purchase the liquid crystal cell, which was a component of the liquid crystal panel. According to the survey by Tanaka, the shipment ratios of the liquid crystalline cell increased rapidly to 30% of the number of whole panel shipments by the end of 2011(Tanaka, 2011).

The TV maker purchases each part of the liquid crystal televisions, such as a liquid crystalline cell, a backlight, a driver, a T-CON, an image engine (LSI for image processing), and a tuner and builds them into a complete set. In this model, the liquid crystal panel maker becomes the supply maker of the liquid crystalline cell. The integral nature of the liquid crystal panel makers decreases, and the modularity of the liquid crystal panel advances. The competitive advantages of the liquid crystal panel are noted by their cost competitiveness. Therefore, similar vertical integration begins in the liquid crystal panel maker. For example, a liquid crystal panel maker makes LEDs for the backlight in-house.

4.1.5 The future of the competition of the liquid crystal television

The differentiation in the simple substance of the liquid crystal television becomes difficult. The companies are going to differentiate the product by the addition of functions, such as Blu-ray incorporation or Internet connections (Cianci, 2012). However, other companies can follow such a function improvement easily, and the differentiation according to function becomes difficult. The new innovation in the S-Curve theory will be necessary to differentiate a product for the mature phase of the product life cycle. Therefore, it is thought that the business model might shift to a vertical integration type using the custom component.

4.2 The digital camera market

This is a case study of the change of the product life cycle of the digital camera. It was considered whether ASIC for digital cameras changed similarly in this scenario. There are makers that send an assembling process out to the ODM company, while there are makers performing an assembling process in-house (Inuzuka, 2009). Compact conventional-film camera makers entered the digital camera market when the market size increased. Because of market development and intensification of the competition, horizontal specialisation advanced as it did in the liquid crystal television industry. The differentiation of the competitors by through picture element number improvement, function

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improvement, and the small light model was performed until the early 2000s. The industry fell into excessive competition, and the reduction in cost competition intensified even further. Some makers send their assembling processes out to ODM companies, while others perform an assembling process in-house. Many large ODM companies exist, and they begin vertical integration for a reduction in cost. A change of the business model in the life cycle such as the liquid crystal television industry was almost confirmed for digital cameras as well.

5. CONCLUSION

The purpose of this research was to clarify a relationship of an industry structure with the most suitable business model. As a result, it was confirmed that the most suitable solution varied according to the maturation value of the product life cycle. The product architecture (integral / modular), product specification (standard specifications / custom specification) and form of organisation (vertical integration / horizontal specialisation) change based on the stage of the product life cycle. For example, the previous research has noted that a modular type is suitable for a low-cost strategy, and an integral type is suitable for a high value-added strategy. In this research, industry structures and business models were analysed in a dynamic viewpoint along a product life cycle in more detail. As a result of the two case studies of the electronic products, the transformation demanded with the transition of the product life cycle had many intersections. The limit of this research is that it is qualitative in nature. Future research would benefit from a quantitative approach.

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FUZZY SETS AND FUZZY LINEAR PROGRAMMING

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Abstract

The aim of this paper is to introduce the notion of fuzzy sets and to show their use in linear programming. Fuzzy logic, which uses the whole interval $< 0,1>$ for the degree of membership to the set, where the certainty of belonging to the set is only a special case of the membership degree, gives wider opportunities to precise methods of solving a problem given on the base of vague perception with respect to formulation of the problem. Mathematical processing of this subjective uncertainty opens a wide application sphere for fuzzy sets and systems. Data coming out of fuzzy systems are general, with not precisely set boundaries. Examples of such systems are social and economic systems, diagnostic systems and human perception.

Key words: *fuzzy set, fuzzy set representation, operations with fuzzy sets, fuzzy interval, fuzzy number, fuzzy linear programming.*

1. INTRODUCTION

Motto:

So far the laws of mathematics refer to reality, they are not certain. And so far as they are certain, they do not refer to reality. (Albert Einstein)

Fuzzy modelling, which is also called fuzzy logic, (though it is something a little bit different from the conventional Boolean logic), is becoming one of the most successful device for developing sofisticated control systems, see [1], [2], [3]. The reason is quite simple. Fuzzy logic processes situations coming out with people's decisions and is able to precise solutions from both precise and vague information.

It fills an unnegligible gap in engineering methods, which have processed either only precise or only stochastic information so far, because it formulates uncertainty and inaccuracy with a purely mathematical and logical alghoritmic approach.

While the other approaches need precise equations for modelling of the real behaviour, fuzzy logic operates with formulations that are not amenable to precise definition or precise measurement. It provides both intuitive methods for describing systems with vague common words and transforming these specifications into effective models.

Some examples of fuzzy systems in daily life are for instance fuzzy washing machine, fuzzy camera and fuzzy microwave oven.

Let us have a „fuzzy" washing-machine for example. It is a product which declares fuzzy logic in its monitoring system. You fill it up, switch it on, and the washing-machine starts to choose the best

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regime by itself. There is a system inside which evaluates the amount of linen and its dirtiness instead of the man and chooses the right amount of detergent and the time of washing in appropriate regimes.

„Fuzzy“ microwave oven – you switch on one button and it works at the right temperature for the right time. The built-in system evaluates the filling similarly to human evaluation and then it chooses an appropriate regime and the right operation time.

„Fuzzy“ camera focuses automatically – the system reacts to the amount of light and evaluates it in the same way as photographers do – then it sets the time of light exposure properly.

And there are many other examples, see [7], [8].

Last but not least it is necessary to stress that the uncertainty modelled by fuzzy sets is different from uncertainty modelled by probability. Probability describes objective uncertainty obtained on the base of a high number of observations. Fuzzy logic describes subjective uncertainty without any possibility of repeating events. Fuzzy attributes deal with the rate of existence of the property.

Conventional logic which works with only two values 0 and 1 is very often not adequate for describing human perception and decisions. Fuzzy logic uses the whole interval $< 0,1 >$ to describe this process. Therefore fuzzy set is a set with no precise boundary – the membership to the set is given by a certain rate which can vary, see also [3].

The fuzzy set theory was originated by L.A.Zadeh in 1965 and has rapidly grown since.

2. FUZZY SETS AND THEIR PROPERTIES

Set $A \subset X$, where X is a universe, may be described in various ways. One of them is description by characteristic function, see [1], [2], [3].

$\mu_A : \quad X \to \{0,1\}$, where $\mu_A(X) = \begin{cases} 1 \ for \ x \in A \\ 0 \ for \ x \notin A \end{cases}$.

.The set is unique and there is

$A = \{x \in X; \mu(A) = 1\}$ or $A = \{ \ x \in X; \mu(A) > 0 \ \}$.

Sets are represented this way in computers as well.

We can also introduce a symbol for inversion μ_A^{-1} where set of values M

$M \subseteq \{0,1\}$ corresponds with the elements of the domain A.

The characteristic function defined this way can be generalized to a function which will have more values in the interval $< 0,1 >$.

Fuzzy set $A \subset X$ is then described by characteristic function

$\mu_A : X \to < 0,1 >$ .This function is called **a membership function.**

For every element $x \in X$, values of $\mu_A((x) \in <0,1>$ determine

the membership degrees of the elements in fuzzy set *A,* (it says to which extent a single element has the property which determines its membership in the set).

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A set, where the range of $\mu(A)$ consists only of values 0 and 1 is then a special case of fuzzy sets – a set with the crisp boundary – a normal set, where we can decide about any element whether it lies in the set or not.. These sets are called **crisp fuzzy sets.**

All fuzzy sets on X will be denoted $F(X)$.

The range of fuzzy set A is

$Range(A) = \{\alpha \in <0,1> : \exists x \in X;\ \mu(A) = \alpha \ \}$ and

The height is $h(A) = \sup Range(A)$.

If the height of A is 1, it means there exists an element in A for which is $\mu(A) = 1$ (the element belongs to A for 100%), the set is called **normal.** On the contrary it is called **subnormal.**

The support is a crisp set

$Supp(A) = \{x \in X;\ \mu_A(X) > 0\ \}$, and so $Supp(A) = \mu_A^{-1}((0,1>)$.

The core is a crisp set

$core(A) = \{x \in X; \mu(A) = 1\ \}$.

It is obvious that *core (A)* with subnormal sets is an empty set.

Every fuzzy set can be described by its membership function.

Let us have for instance

the real number „approximately eight“. Its membership function can be

$$\mu_A(x) = \{\ \frac{x-5}{3}\ for\ x \in <5,8>, \frac{11-x}{3}\ for\ x \in <8,11>,\ 0\ otherwise\ \}$$

Fuzzy sets can be described with the help of cuts.

Let us define $\alpha -$ level of fuzzy set A as

$\mu_A^{-1}(x) = \{x \in X\ ;\ \mu_A(x) \geq \alpha\ \}$.

then α - cut is

$$A_\alpha = \mu_A^{-1}(<\alpha,1>) = \{x \in X\ ;\ \mu_A(x) \geq \alpha\ \} \qquad (1)$$

If the inequality in relation (1) is sharp, the cut is also called sharp.

Description of fuzzy sets by cuts is called **horizontal representation** and description by a membership function is called

vertical representation of a fuzzy set, see [3].

For instance the real number „approximately eight“ is in the horizontal representation

$A_\alpha = \{R\ for\ \alpha = 0; <5+3\alpha, 11-3\alpha>\ for\ \alpha \in (0,1>\ \}$

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For fuzzy sets we define ordinary logic and set operations – it is necessary to emphasize that the membership degree of the point $x \in X$ in the operation result depends only on membership degrees of operands.

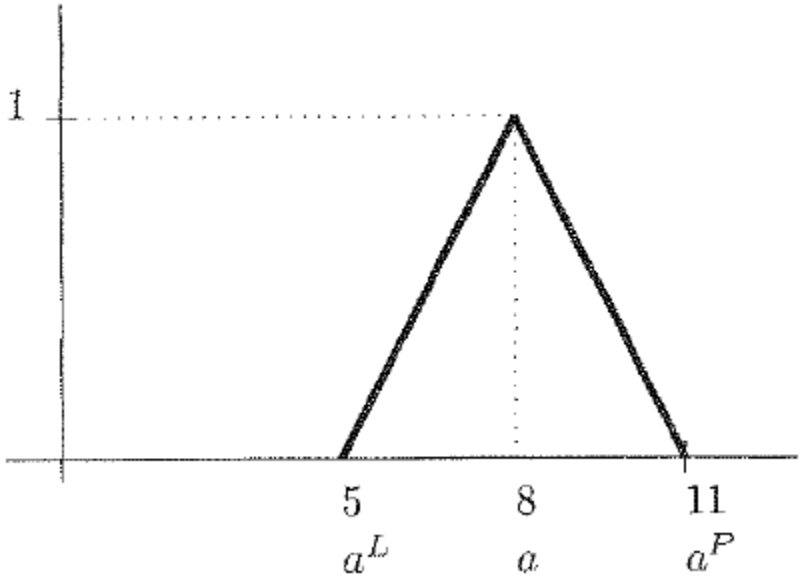

Figure 1: The membership function of fuzzy number „approximately eight“

Here are some examples, see [3], [8]:

Equality of fuzzy sets: $A = B$, je-li pro $\forall x \in X$; $\mu_A(x) = \mu_B(x)$

Innclusion of fuzzy sets: $A \subseteq B$, je-li pro $\forall x \in X$; $\mu_A(x) \leq \mu_B(x)$.

It is possible to show that $A \leq B$ is equivalent to $\forall \alpha \in <0,1>$ je $A_\alpha \leq B_\alpha$.

Fuzzy Sets Intersection $A \cap B \Leftrightarrow \mu_{A \cap B}(x) = \min\{\mu_A(x), \mu_B(x); x \in X\}$

Fuzzy Sets Union: $A \cup B \Leftrightarrow \mu_{A \cup B}(x) = \max\{\mu_A(x), \mu_B(x); x \in X\}$

Fuzzy Sets complement: $CA \Leftrightarrow \mu_{CA}(x) = 1 - \mu_A(x)$.

Other important notions are fuzzy intervals and fuzzy numbers.

Let us have fuzzy set $A \subset R$.

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If A_α are convex and closed (closed intervals) for $\forall \alpha \in <0,1>$, and further they are normal (there exists at least one $x_0 \in R$ that $\mu(x_0) = 1$), then A is called **fuzzy interval.**

If there exists only one $x_0 \in R$, for which is $\mu_A(x_0) = 1$, then A is called **fuzzy number.**

Membership functions of fuzzy numbers can have graphs of different shapes. The fuzzy set in Figure 1 is a fuzzy number, which is called **triangular fuzzy number**.

With operations for fuzzy numbers we use so called the principle of fuzzification which enables to extend

1) algebraic operations to fuzzy sets,

2) real functions of real variables to fuzzy functions with fuzzy variables,

3) crisp notions to fuzzy notions (limit, derivative, integral, etc.) see [3], [5].

The typical example can be adition and multiplication of fuzzy numbers, where we also obtain fuzzy numbers as a result of the operation. (It is not true with division).

It is defined as follows:

Let us have fuzzy numbers M and N, $\alpha \in <0,1>$, $M_\alpha = <a_\alpha, b_\alpha>$,

$N_\alpha = <c_\alpha, d_\alpha>$ are $\alpha-$cuts. Then S is defined by its cuts as $S_\alpha = <a_\alpha + c_\alpha, b_\alpha + d_\alpha>$ and

multiplication $P = M \cdot N$ is

$P_\alpha = <a_\alpha \cdot c_\alpha , b_\alpha \cdot d_\alpha>$.

3. FUZZY SETS IN LINEAR PROGRAMMING

Now let us introduce the concept of interval and fuzzy linear programming, where profit or technological coefficients, resp. coefficients of right sides, are uncertain or inaccurate values which we are going to model with the help of intervals or fuzzy numbers, see [5], [7]. As a model example we will have one-phase LP task, where we consider two products A a B to be manufactured by two processes *P1* and *P2*. The unit processing resources for manufacturing a batch of product A we denote a_{1A}, a_{2A}, and moreover a_{1B}, a_{2B} are the unit processsing resources for manufacturing a batch of product B. Let b_1, b_2 be total resources for *P1, P2* and c_A, c_B be profit rates of A and B respectively.

Then we can formulate the given problem as follows:

Maximize $z = c_A x_1 + c_B x_2$ - (objective function of total profit),

subject to

$a_{1A} x_1 + a_{2A} x_2 \leq b_1$ (constraints – restrictions of resources)

$a_{1B} x_1 + a_{2B} x_2 \leq b_2$

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$x_j \geq 0, j = 1,2.$ (conditions of nonnegativity)

For demonstration we will consider such a problem with concrete numbers:

Maximize $z = 3x_1 + 4x_2$

subject to $x_1 + x_2 \leq 11$

$3x_1 + x_2 \leq 21$

$x_j \geq 0,\ j = 1,2$

Let optimal solution be denoted z^*.

We can easily obtain both grafically and by simplex alghoritm $x_1^* = 5, \quad x_2^* = 6 \quad a \quad z^* = 39.$

As the coefficients in LP problems are often more or less approximate

(they depend on many changeable factors which are usually not included in the formulation of the problem), we try to make lower and upper estimates of the coefficients and thus we obtain the coefficients in the form of intervals. If a coefficient is known exactly, then the interval is a singleton, e.g. [3;3] = 3. Then the modification of the LP problem is:

$$z = <2, 4> \cdot x_1 + <3, 5> \cdot x_2$$

subject to $<1, 3> \cdot x_1 + <1, 1> \cdot x_2 \leq <9, 13>$

$<3, 9> \cdot x_1 + <1, 1> \cdot x_2 \leq <20, 22>.$

Using the natural arithmetic operations with intervals, e.g.

$. <2, 4> \cdot x_1 + <3,5> \cdot x_2 = <2x_1 + 3x_2, 4x_1 + 5x_2>$

the problem can be formulated as follows:

Maximize $z = <2x_1 + 3x_2, 4x_1 + 5x_2>$

subject to $<x_1 + x_2, 3x_1 + x_2> \leq <9, 13>$

$<3x_1 + x_2, 9x_1 + x_2> \leq <20, 22>, \quad x_j \geq 0,\ j = 1,2.$

There is a question how to interpret maximization of the interval and how to understand inequality relation between two intervals.

The question can be answered from two different perspectives – pessimistic or optimistic.

Optimistic maximization (o-maximization) of an interval function

$z(x) = <z^L(x), z^P(x)>,$

where for $z^L(x), z^P(x)$ is $z^L(x) \leq z^P(x)$ for all $x \in R,$ means

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maximizing $z^P(x)$ and **pessimistic maximization (p-maximization)** of an interval function means maximizing $z^L(x)$.

Let $<a^L, a^P>, <b^L, b^P>$ be intervals..

We say that $<a^L, a^P>$ is pessimistically less-or-equal $<b^L, b^P>$

if for every $t \in <a^L, a^P>$ and for every $s \in <b^L, b^P> : t \le s$.

We write $<a^L, a^P> \le_p <b^L, b^P>$.

We say that $<a^L, a^P>$ is optimistically less-or-equal $<b^L, b^P>$ if there exists $t \in <a^L, a^P>$ and $s \in <b^L, b^P> : t \le s$.

We write $<a^L, a^P> \le_o <b^L, b^P>$.

We can obviously derive from above that $<a^L, a^P> \le_p <b^L, b^P>$ if and only if $a^P \le b^L$ and

$<a^L, a^P> \le_o <b^L, b^P>$ if and only if $a^L \le b^P$.

By applying these results we obtain two versions of the LP problem – pessimistic and optimistic one.

Pessimistic version: maximize $z = 2x_1 + 3x_2$

subject to $\begin{array}{l} 3x_1 + x_2 \le 9 \\ 9x_1 + x_2 \le 20 \end{array} \quad x_j \ge 0,\ j = 1,2$.

Optimistic version: maximize $z = 4x_1 + 5x_2$

subject to $\begin{array}{l} x_1 + x_2 \le 13 \\ 3x_1 + x_2 \le 22 \end{array} \quad x_j \ge 0,\ j = 1,2$.

The results of both versions obtained by simplex algorithm are dramatically different..

The results of pessimistic version: $x^*_{1\,p} = 1.8 \qquad x^*_{2\,p} = 4.5 \qquad z^*_p = 17.4$.

The results of optimistic version: $x^*_{1\,o} = 4.5 \qquad x^*_{2\,o} = 8.5 \qquad z^*_o = 60.5$.

An alternative approach is based on introducing fuzzy intervals and fuzzy numbers and taking expert understanding of the parameters nature into account.

Let us have the same LP problem with fuzzy numbers.

Maximize $\tilde{z} = \tilde{c}_A x_1 \tilde{+} \tilde{c}_B x_2$, (function of total fuzzy profit)

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suject to fuzzy restrictions $\begin{matrix} \widetilde{a}_{1A}x_1 \mathbin{\tilde{+}} \widetilde{a}_{2A}x_2 \mathbin{\tilde{\leq}} \widetilde{b}_1 \\ \widetilde{a}_{1B}x_1 \mathbin{\tilde{+}} \widetilde{a}_{2B}x_2 \mathbin{\tilde{\leq}} \widetilde{b}_2 \end{matrix}$, (2)

where $x_j \geq 0$ *and*

coefficients $\widetilde{c}_A, \widetilde{c}_B, \widetilde{a}_{jA}, \widetilde{b}_{jB}, \widetilde{b}_j$ are fuzzy sets, $j = 1,2$.

Inequality relation can be defined both in a pessimistic and optimistic way again, as follows:

Let $\sigma, \rho \in <0,1>$.

Fuzzy interval $\widetilde{x}$ is pessimistically less-or-equal than fuzzy interval $\widetilde{y}$ with membership degree ρ if

$\mu_p(\widetilde{x}, \widetilde{y}) = 1 - \inf\{\alpha \in <0,1>; \inf \widetilde{x}_\alpha \leq \sup \widetilde{y}_\alpha \} = \rho$

Fuzzy interval $\widetilde{x}$ is optimistically less-or-equal than interval $\widetilde{y}$

with membership degree σ if

$\mu_o(\widetilde{x}, \widetilde{y}) = \sup\{\alpha \in <0,1>; \sup \widetilde{x}_\alpha \leq \inf \widetilde{y}_\alpha \} = \sigma$.

As the fuzzy intervals are triangular fuzzy numbers, it is obvious that for $\widetilde{a} = (a^L, a, a^P)$ is

$\mu_a(x) = \dfrac{x - a^L}{a - a^L}$ *for* $a^L \leq x \leq a$, see Fig.1

$\eta_a(x) = \dfrac{a^P - x}{a^P - a}$ *for* $a \leq x \leq a^P$

For triangular fuzzy numbers $\widetilde{x} = (x^L, x, x^P)$, $\widetilde{y} = (y^L, y, y^P)$,

the formula of the optimistic and pessimistic inequality can be simplified as follows:

$\widetilde{x} \leq_p \widetilde{y}$ with membership degree ρ if

$\rho = \max\{0, \min\{1, \dfrac{x - y}{x - y + y^P - x^L}\}\}$ and

$\widetilde{x} \leq_o \widetilde{y}$ with membership degree σ if

$\sigma = \max\{0, \min\left\{1, \dfrac{x^P - y^L}{x^P - y^L + y - x}\right\}\}$.

The set of feasible solutions of LP problem is a fuzzy set of nonnegative vectors again. The aim is to find such a feasible solution which satisfies given constraints in a high degree. Thus we obtain a concept of

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α - feasible solution of the problem (either optimistic or pessimistic).

Let us define:

Let $\alpha \in <0,1>$. α - feasible optimistic solution of fuzzy LP is a vector

$\tilde{x} = (x_1, x_2) \geq 0$ satisfying the following inequality:

$$\min\{\mu_o(\tilde{a}_{1A}x_1 \tilde{+} \tilde{a}_{2A}x_2; \tilde{b}_1), \mu_o(\tilde{a}_{1B}x_1 \tilde{+} \tilde{a}_{2B}x_2; \tilde{b}_2)\} \geq \alpha$$

and α - feasible pessimistic solution of fuzzy LP is a vector $\tilde{x} = (x_1, x_2) \geq 0$ satisfying the inequality

$$\min\{\mu_p(\tilde{a}_{1A}x_1 \tilde{+} \tilde{a}_{2A}x_2; \tilde{b}_1), \mu_p(\tilde{a}_{1B}x_1 \tilde{+} \tilde{a}_{2B}x_2; \tilde{b}_2)\} \geq \alpha$$

α - optimal optimistic solution of fuzzy LP is then such a vector from the feasible optimistic solutions which maximizes optimistic objective function

$$\sup(\tilde{c}_A)_\alpha x_1 + \sup(\tilde{c}_B)_\alpha x_2$$

and α - optimal pessimistic solution of fuzzy LP is such a vector from the feasible pessimistic solutions which maximizes pessimistic objective function

$$\inf(\tilde{c}_A)_\alpha x_1 + \inf(\tilde{c}_B)_\alpha x_2 \quad .$$

For triangular fuzzy numbers it is possible to prove that instead of task (2) the following two tasks can be solved:

$$\text{maximize } [\alpha c_A + (1-\alpha)c_{A1}^P]x_1 + [\alpha c_B + (1-\alpha)c_B^P]x_2$$

subject to (3)

$$[\alpha a_{1A} + (1-\alpha)a_{1A}^L]x_1 + [\alpha a_{2A} + (1-\alpha)a_{2A}^L]x_2 \leq \alpha b_1 + (1-\alpha)b_1^P$$

$$[\alpha a_{1B} + (1-\alpha)a_{1B}^L]x_1 + [\alpha a_{2B} + (1-\alpha)a_{2B}^L]x_2 \leq \alpha b_2 + (1-\alpha)b_2^P$$

$$x_1, x_2 \geq 0 \quad .$$

where optimal solution of task (3) is α - optimal optimistic solution of task (2)

and : maximize $[\alpha c_A + (1-\alpha)c_A^L]x_1 + [\alpha c_B + (1-\alpha)c_B^L]x_2$

subject to (4)

$$[\alpha a_{1A}^P + (1-\alpha)a_{1A}]x_1 + [\alpha a_{2A}^P + (1-\alpha)a_{2A}]x_2 \leq \alpha b_1^L + (1-\alpha)b_1$$

$$[\alpha a_{1B}^P + (1-\alpha)a_{1B}]x_1 + [\alpha a_{2B}^P + (1-\alpha)a_{2B}]x_2 \leq a b_2^L + (1-\alpha)b_2$$

$$x_1, x_2 \geq 0 \,,$$

where optimal solution of task (4) is α -optimal pessimistic solution of task (2).

Let us consider our example again.

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We want to maximize

$\tilde{z} = (2,3,4)x_1 \tilde{+} (3,4,5)x_2$ subject to

$(1,2,3)x_1 + (1,1,1)x_2 \tilde{\leq}_o (9,11,13)$

$(3,6,9)x_1 + (1,1,1)x_2 \tilde{\leq}_o (20,21,22)$, $x_1, x_2 \geq 0$ and let $\alpha = 0.5$.

We get according to (3)

$z = 3.5x_1 + 4.5x_2$ subject to $1.5x_1 + x_2 \leq 12$

$7.5x_1 + x_2 \leq 21.5$

and 0.5 -optimal optimistic solution is $x_1^* = 1.6$, $x_2^* = 9.6$

and $z^* = 48.8$.

Similarly with (4) maximize

$z = 2.5x_1 + 3.5x_2$

subject to $2.5x_1 + x_2 \leq 10$
$7.5x_1 + x_2 \leq 20.5$

and we get 0.5- optimal pessimistic solution

$x_1^* = 2.1$ $x_2^* = 4.8$ and $z^* = 22.1$.

At the end it is necessary to mention the fact that for the dual problem to fuzzy LP problem we get: α -optimal optimistic solution of the primal problem is equal to (1- α) –optimal pessimistic solution of the dual problem and similarly α - optimal pessimistic solution of the primal problem is equal to (1- α) – optimal optimistic solution of the dual problem, see [5].

4. CONCLUSIONS

This article introduces fuzzy sets and basic operations with them and then it shows their use in LP problems. It gives fundamentals of interval LP together with definitions of optimistic and pessimistic solutions. Further it shows possible generalization of fuzzy intervals and fuzzy numbers. Everything was illustrated on a simple LP problem of two variables with two restrictive conditions - constraints. It is necessary to mention that this acces to fuzzy linear programming is not unique. Some others can be found for instance in [5].

The major advantage of this access is the fact that information expressed by a fuzzy number is more accurate than information expressed with the help of an interval. For each degree of satisfaction α , the level of feasible solutions is limited. The whole process of solving the problem can be made for different degrees of satisfaction (values α) and thus we can get a survey over different solutions and their stability. On the base of such a survey it is possible to decide how to formulate the problem in the most suitable way.

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UNEMPLOYMENT – LIMITING FACTOR OF SOCIETY AND ENTREPRENEURSHIP DEVELOPMENT

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Abstract

Unemployment, both as a social and an economic phenomenon, has always been represented in a higher or a lower amount worldwide, as well as in certain national economies. It is a reflection of some historical stages of society in which certain social weaknesses have manifested, which implicate disturbances in the world of entrepreneurship. In the context of the current and ever-present economic crisis the unemployment rates have reached alarming proportions. It is a result of inadaptability of the society, primarily its management, what is especially confirmed in countries in transition which cannot define, as much as they cannot, with measures and development programs, confirm the corresponding "modus operandi" and rehabilitate situation of unemployment in conditions of crisis. Republic of Croatia also has, some serious and currently unsolvable problems of resolving unemployment , what significantly degrades all previous efforts for encouraging entrepreneurship development.

Key words: *world, countries in transition, Republic of Croatia, crisis, unemployment, entrepreneurship*

1. INTRODUCTION

The global situation regarding employment every day becomes more severe and alarming, and furthermore, the predictions about the same seem hopeless, since this acute problem of the modern society is not going to improve in the near future, especially because a new "wave" of this troubling scenario is yet to be expected. We are warned about that by the International Labor Organization (ILO) as well, which critically questions and claims that the unemployment problem is constant, absolutely unresolved, that is, the rates of unemployment are raising as fast, or they are held on a constant level, but are not decreasing at all. The phenomenon of high unemployment is present in almost all countries worldwide with a higher or a lower intensity. However, the proportion and consequences that the global unemployment shows nowadays are a confirmation of one unquestionable fact, in the sense of finding the true cause – the society of today, as well as some national economies (confirmed by all members of OECD), is not successful at adapting to changes. Regardless of the fact that it is often emphasized that the society of today is a "society of change", the same insists that it should be run by a management of change. Unfortunately, modern managers are very often reluctant to manifest their knowledge and skills, since their education and expertise, as well as their business practice is not able to successfully and with a high enough level of quality answer to the question of satisfying the ever growing requirements and needs of the technologically sophisticated and advanced market economy. On the other hand, with that, the businesses have not

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increased their productivity enough, and the employees are still not sufficiently educated. Namely, the processes on the labor markets of various, especially transition countries, are in the focus of interest of professional and public policies, because these countries are still going through the very though period of adapting to the market economy. This process is very demanding and exhausting for all countries, of which every one of them has its specificities. Even many surrounding countries in transition manifest a phenomenon of massive unemployment, whether in an open, or a hidden form. Some environments were unfortunately imminent war zones; some others were, however, too dependent of a single enterprise or a single economic activity – with no alternative employment possibilities; while other areas are rural and mostly demographically devastated. Countless reasons of unemployment in transition countries, including Croatia, are in mutual interaction, and the "link" is found in different social and economic planning with regard to socialism, failed companies, corrupt privatization, and inefficient private sector, as well as grey economy. Besides that, bad macroeconomic policies, delaying and/or insufficient implementation of structural reforms decrease the positive perspectives of change. A special impact nowadays brings the unemployment problem of highly educated young people, what caused some highly negative implications – depression, apathy, crime, violence, defeatism. Regardless, the fact is that the unemployment problem of youth was present even before the crisis, but the same was never so drastically prominent, or this "infinitely" slowly been dealt with – regardless of the fact that young people are willing to work at underpaid jobs, no matter what their qualifications are. Regardless of the proportions and the form of the economic crisis, on the labor market and within civilized societies there is always the obligation of employing the less employable people. Globally, as well as in Croatia, the less employable people are most often these social categories:

- The long-term unemployed
- Young people with no work experience
- Older people
- People with lower education levels
- Unqualified workers
- People with poorer socioeconomic status
- People with reduced work ability (psychological aspects of unemployment)

Some authors (*Lubyova. M., van Ours, J., 1999; Frey, 1997)* treat a few social groups specially, such as those that make the "foundation" of expanding long-term unemployment and/or inactivity and pacification. These are people with reduced work ability, minorities, women with small children, former prisoners, people with lower qualifications or obsolete knowledge and skills, and also older people. Since all countries, especially the ones in transition, are implementing measures for encouraging their employment, results in some countries are, unfortunately, confirming that these people are a lot less caught in the active policy of employment than other potential employees. With that, the social community is socially responsible and obligated to give an overall and maximum help to the long-term unemployed seekers of employment with inclusion into programs of the labor market, and through that potentially ensure their employment.

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2. HISTORY-TIME DIMENSION OF UNEMPLOYMENT

Even though according to the current definition of the International Labor Organization an unemployed person is a person which is without a job, but is actively seeking for one and is ready to start working in the next two weeks, the problem of unemployment should be looked upon more complexly, since this period of the present economic crisis opened many sinkholes of "hopelessness". It is a fact that the unemployment problem marked every epoch of society and social evolution, just for the same to manifest in various intensities in the frameworks of certain national economies, rehabilitated in shorter or longer timeframes, but the consequences are various and very often stated in a few specific levels (multilayered, more of them "accumulated"). It is especially alarming with young people, what results with more than 6 million people worldwide so desperate they stopped searching for a job. On the other hand, those educated (young) people who "get lucky" and find employment accept the work model with features like shortened work hours (part-time jobs) and/or jobs not in accordance with their qualifications – and accordingly they are not adequately paid for their work. Shocking is also the data of the implications of unemployment, which, according to the International Labor Organization, manifests in such proportion that every third person in the World is either unemployed or lives below poverty line (Every third person in the World lives below poverty line or is unemployed). Unemployment is a guidepost to poverty, since the number of poor workers in the World who earn less than $2 a day is at an alarming level of 1.4 billion, the highest level in history (1.4 billion workers in the World earn $2 a day). International Labor Organization is concerned about the slow diminishing of poverty. In 2003 there were 2.8 billion employed people in the World, while the no. of unemployed was 185.9 million. But, that number should be considered "double" since a significant part of the employed people, whose numbers are several times higher than the unemployed, still live in poverty. Around 550 million workers earn less than $1 a day. Nevertheless, looking at the share in the total work population, number of poor workers decreased in the last few years: from 57.2% in 1990 to 49.7% in 2003, and in 2015, according to the International Labor Organization in their "Report of employment in the World from 2004-2005", it could possibly fall to only 40%.

2.1. Time dimension of unemployment in World and national frameworks

The unemployment problem marked almost every history-time epochs, and as such is present through all of history. Through time it was assessed that the rate of unemployment in the World was 30% *(CIA, 2001)*, but there were some indications that the real rate of unemployment could have been a lot higher. Namely, because of different methods of collecting data, the same sets of data could not be compared between different countries. In their paper, the data of unemployment is presented according to the CIA World Factbook and the UN Statistics Department. Depending on the source, the data varies more or less accordingly to the methodology and the year of gathering the data, and they are also based on different definitions of what unemployment is.

The differences in assessing the unemployment rate (official and non-official) in certain countries are evident, so the possibility of further comparison and defining certain conclusions is unfounded. But, the given data can still be used as approximate assessment of unemployment in some groups of countries. More recent data of the 1997 ILO assessment speaks in favor of the claim that there are around 1 billion work-capable, but unemployed people. Such conditions on the labor market of certain in some countries dated since the 70s, which was marked by two big oil crises, whose consequences left a trace on the World economy. In Europe and America, in the 1980s and 90s many companies were abolishing positions what resulted in thousands of employees getting laid off. In that manner Siemens laid off 15.000 employees, British Ford 10.000, Citroen 3.000, and IBM a dreadful 100.000 employees. Unemployment in the OECD zone from 1950 – 1974 was between 7 and 11 million

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people, only to rise in 1992 to almost 30 million unemployed people (Psychological aspects of unemployment).

Table 1. Unemployment in countries in transition, developed European countries and other continents

	According to CIA data		According to UN data	
COUNTRY	Rate (%) of unemployment	Year of data gathering	Rate (%) of unemployment	Year of data gathering
Unemployment in countries in transition				
Albania	35-40	2000.	9,1	1991 (official estimate)
Bosnia	16	1999.	-	-
Croatia	22	2000.	16,1	2000.
Macedonia	32	2000.	38,8	1996. (according to employment bureau
Poland	12	1999.	16,1	2000.
Russia	10,5	2000	13,4	1999. (people between 15-72)
Romania	11,5	1999.	7,1	2000.
Slovenia	7,1	1997.	7,4	1999. (May)
Yugoslavia	30	2000.	-	-
Unemployment in developed European countries				
Greece	11,3	2000.	11,1	2000. (second half)
Ireland	4,1	2000.	5,7	1999. (April-May)
Netherlands	2,6	2000.	3,3	2000.
Portugal	4,3	2000.	4,0	2000.
Spain	14	2000.	14,1	2000. (16 and older)
Germany	9,4	2001.	7,9	2000.
Italy	10	2001.	10,5	2000.
UK	5,5	2000.	5,5	2000. (16 and older)
Unemployment on other continents				
Japan	4,7	2000.	4,7	2000.
Mexico	2,2	2000.	1,6	2000.
New Zealand	6,3	2000.	6	1999.
Nigeria	28	1992.	-	-
SAD	4	2000.	4	2000.
Australia	6,4	2000.	6,6	2000.

Source: Adapted by author, according to CIA data, 2001; UN, 2002; (Downloaded from *Psychological aspects of unemployment, 2002*)

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2.2. Unemployment as a consequence of the processes in transition countries

In the first years of the 1990s, in the counties of Central and Eastern Europe, there was a breakdown of the socialistic and a transition to the capitalistic economic structure. The consequences which marked these transition processes were most striking in the field of mass layoffs as the most dominant negative implication, and these are based, before all, on changes in the employment structure, in almost all transition countries. With the introductions of economic reforms, in all transition countries open unemployment drastically increased. However, not long after, a clear difference between two groups of transition countries formed. In Central and Eastern Europe the rate of unemployment in the first three years of the economic metamorphosis reached a double-digit number (aside from Czech Republic) (Employment and labor market policies in economies in transition). Primarily because of restrictions in the system of material and legal protection of unemployed people, and less because of a higher labor demand, the rate of unemployment later in the Central Europe decreased and mostly stabilized on the level a bit higher than 10%. Number of work places rapidly decreased, especially in the industrial sector of all countries, and the employment conditions became a lot more demanding. Analogously, the specificities of the crisis, such as economic pressures, and also uncertainty and inconsistency of the market, conditioned many companies to become more flexible in employment:

- Newly employed people are offered time-limited contracts
- An increase in part-time jobs, what isn't a personal choice of workers, but rather a necessity for those who cannot find a full-time job
- There was a change in the former very rigid national labor legislation which prevented layoffs

But, with all those entrepreneurial measures it is obvious that the rates of registered unemployment in some transition countries increased, what confirms the fact that these same countries did not find the right "modus operandi" for stopping these negative trends.

Table 2. Rates of registered unemployment in some transition countries (%)

Country	1991.	1993.	1995.	1997.	September 1998.
Azerbaijan	unknown	0,7	1,1	1,3	1,4
Bulgaria	11,5	16,4	11,1	13,7	10,7
Croatia	Unknown	16,6	17,6	17,6	17,5
Czech R.	4,1	3,5	2,9	5,2	6,8
Estonia	Unknown	5,0	5,0	4,6	4,5
Hungary	7,4	12,1	10,4	10,5	8,9
Kazakhstan	Unknown	0,6	2,1	3,9	4,0
Poland	11,8	16,4	14,9	10,5	9,6
Russia	0,0	1,0	3,2	2,8	2,4
Ukraine	0,0	0,3	0,6	2,8	3,9

Source: UN ECE: Economic survey of Europe, Geneva, 1996, 1998 (according to Employment and policy of the labor market in transition countries)

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Going from a system of limited resources to a system of limited demand many employees became "over-numbered", since the new possibilities and needs for certain work positions could not be compensated with the number of employees who became redundant. Some consequences of unemployment occurred because of institutional changes (reforms in the legal system), privatization and measures of macroeconomic stability. All of these changes in many countries benefited the imbalance in various segments. Liberalization and privatization were done insufficiently enough throughout the system, without a clear strategy and meticulous groundwork and preparation, through which an unfulfilled or insufficient progress in development of institutions necessary for operating an efficient market economy prospered.

In such manner, many problems occurred: corruption, problems in structure of functioning of enterprises, financial, political and social institutions, as well as a bad legal system which enabled inefficient implementation of regulations and financial indiscipline. In many transition countries tax systems were insufficiently designed, markets and financial systems were relatively undeveloped, legal framework of financial business is insufficiently developed, and corruption is connected with weaknesses in management. Unfortunately, nowadays a present practice in some transition countries current companies are supported, but new are discouraged, what not only slows down structural changes, but also undertakes government finances necessary for supporting social programs. Because of all the above, a decrease in unemployment in the government sector is not in a sufficient manner compensated with opening new work places in the private sector nor with an increase in self-employment, so in most transition countries there is a significant spike in unemployment in comparison to the pre-transition era (Psychological aspects of unemployment).

2.3. Genesis of unemployment in Republic of Croatia

As in other socialistic countries, in Croatia as well, the former administrative services were oversized, the value of innovations tiny, and companies had social functions uncommon for companies in a capitalistic economy (surplus of workers was not fired, but there was an increase in the rates of hidden unemployment). From that came basic problems connected with transition which were only exacerbated during the war in which the whole socialistic Yugoslavia fell apart.

In the year 1990 in Croatia a war was started during which all economic tethers with other Yugoslavian republics were severed, there is an ubiquitous crisis in other socialistic countries as well, and a domination of financial chaos in the Croatian economy. In 1991 in Croatia socialistic companies were nationalized, and then through the Croatian fund for privatization sold. Then many companies came in the hands of people who did not know, nor had the intention of continuing the production, but rather, their newly bought companies were supposed to serve in the purpose of speculative short-term enrichment. This significantly helped in decreasing former production and firing 700.000 employees. The consequence of the privatization process was additional depletion of companies so the new owners would pay off, or more often, use it for further speculative transactions. During the war companies were financially exhausted, new "pseudo entrepreneurs" were to in too much debt, and the tax burden became too heavy. With all that the legal system was inefficient.

From these "inputs" came two dangerous consequences: bank crisis and overall insolvency. Not paying bills and mutual debts reached drastic proportions, since that on the list of debtors was half of the companies which were actively in business. Because of the stagnation of resources and a continuous rise in import, there was a sudden increase in the deficiency of trade. The government fiscal policy sets too high of a tax burden and brings bad assessments of the possibility of making budget. It is evident that the private sector could not have compensated the loss of work places in the state sector: it absorbed only a sixth of the workers which lost their jobs. While in other transition

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countries most of the unemployed were absorbed through self-employment, in Croatia, because of a too high price of capital and labor as well as tax burdens, self-employment did not work. The structure of entrepreneurs' liabilities proves that the fiscal and financial burdens were, or are such that they do not allow further expanding the production in a form of expenses for inputs, merchandise and services. In the structure of entrepreneurs' liabilities, on fiscal expenses (VAT, profit tax, taxes and income fees) and financial expenses (returning debts, interests) goes a high 15%, while on the expenses for labor force goes only 5.2%. In between such "forces", the entrepreneurs take it as a goal to ensure some sort of a reproductive cycle, without thinking of an additional expansion of production and employment (Psychological aspects of unemployment). However, this was confirmed on the "score" of unemployment in Croatia. According to data regarding February 2012, in Croatia there were, unfortunately, 343.000 unemployed, and the rate of registered unemployment of 20.1% (Rate of unemployment in Greece 21.8%, in Croatia 20.1%).

2.4. The problem of unemployment - as the problem of "today"

UNs specialized agency in their annual report about the trends of employment assessed that last year the number of unemployed was around 197 million, which brought the World unemployment rate to 6%. So, the number of unemployed in 2011 was higher for about 27 million than at the beginning of the crisis 4 year ago. According to Eurostat, the rate of unemployment in 17 member countries of the Eurozone in December reached 10.4%, which means that around 16.5 million people were unemployed or 751.000 people more than the year before. The number of unemployed continued to grow during the year before, simultaneously with the continuation of the debt crisis. In December, 2010 the rate of unemployment in the Eurozone totaled at 10%. The rate of unemployment in the European Union in December was 9.9%. 23.8 million people were without work, the biggest annual increase of this infamous number was reported in Greece, Cyprus and Spain (Eurozone shook record breaking unemployment rates). Situation in Russia also morphed to alarming proportions (in December a million Russians lost their jobs).

Russia has, in the last few years, had an average economic growth of 7%, but the situation has worsened with the fall in oil prices, an "epidemic" of the global financial crisis, after which the investors stepped down from the so called new market countries. The number of unemployed Russians grew from November to December, from 5 to 6 million. On the other hand, according to the Report of the International Labor organization (ILO), which was prepared in co-operation with the Organization for Economic Co-operation and Development (OECD) during a meeting in Paris, on which the attendees were Ministers of Labor of the "G20" - group of the 20 most developed economies and those in transition, claims that after the 2008 financial crisis 20 million people lost their jobs (Leading economies late in opening new jobs). The rate of unemployment in Greece rose to a 21.8% in January, almost double than in January 2010, when it was just 11.3%. In Greece in January 1.084.000 people were unemployed, of which most of them were younger than 24 (50.8 %). Furthermore, 3.34 million people was classified as "inactive" - those without a job or not looking for one (Rate of unemployment in Greece 21.8 %, in Croatia 20.1%). Rate of unemployment in Spain reached a record breaking 24.4 % at the end of March of this year. Unemployment rate in France in March this year rose for the 11th month in a row.

However, in the transition countries the situation was better. International Labor Organization states that the unemployment rates in the transition countries outweighed those from the period before the financial crisis. According to their data, more than 40% of people in the developed economies lost their jobs for over a year, which means that the unemployed need more and more time to find a job (Eurozone shook by record breaking unemployment.

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3. CAUSES OF UNEMPLOYMENT AND THE MEASURES AND POLICIES OF EMPLOYMENT

The main cause of unemployment is the shortage of work places on which individuals could be employed, and the unemployment manifests in such relations when the supply of labor is greater than the demand. The question is what the background of such relations is, or rather, what are the basic causes or factors of such relations. According to some studies they are contained in the following (Psychological factors of unemployment):

- Institutional and other structural changes in the labor market - one of the main factors of high unemployment in Europe lies in the high standard of Europeans with which high taxes, high costs of labor, social help programs, and an overall inflexibility of the European labor market are tied;
- High standard pay - employers will employ workers if the profit of their labor overcomes the costs of their employment, that is the size of their pay. The higher the costs of employment, the higher are the employees' pay, as well as labor costs. In conditions of high labor costs employers are redundant to hire new workers;
- Trade unions - the pressures of trade unions open processes of negotiating the minimum wage. In their intentions to protect the employed, trade unions try, through collective bargaining, increase the minimum wage. This way they create a situation where employers are redundant to employ new workers, since the new conditions have made that relation unprofitable for them;
- employers - which can make the decisions of future non-employment of new workers, because the less employees they have, the lower are the costs of pays, bonuses, social security and insurance, professional selection and training, what means a higher profit for them;
- Social policy - since the social policy on the labor market indirectly sets the supply and demand for certain carriers, that is, individuals with certain skill sets. Through its mechanism of supply and demand, the labor market creates an inequality in distributing pays between certain groups of people. One of the possible consequences of different pays is the poverty of a certain group of people.
- Inflexibility of the labor supply - can be explained with the decreasing geographical mobility of the labor force. It is becoming a common situation where workers, for various reasons, are not willing to work outside their place of residence, what often results in higher rates of unemployment of certain regions of a country;
- Process of globalization - affects the mobility in changing the labor supply. With the increasing globalization of the market certain cases of international companies, which intentionally put the headquarters of their production in the geographical areas with cheaper labor force, are surfacing. In such areas they employ a lower percentage of workers than their maximum capacity. The result is closing the industries and increase in unemployment;
- Automation and mechanization of production activities - modern technologies shorten the time and lower the expenses of designing a product, lower the need for physical labor, raise the productivity, eliminate spoilage, shorten the time needed for production, enable quick modifications without high costs, and individualization of products. So this begs the question, does the use of technology in production processes endanger work places;

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- "Unemployment trap" - this term is related with the users of welfare due to unemployment. If they get a job the welfare is discontinued, which means the help from employment is little or non-existent, especially if it is a low paid job. That is why the users will try to keep the welfare, and eventual additional incomes make by working in the "grey economy". Accordingly, there are a lot of unemployed people which do not receive any welfare, but still earn through the "grey economy". It is a fact that the grey economy has very bad consequences on legal economy and economic policy: unfair competition of employers who illegally employ workers in companies which are doing business legally, omit the tax income, because of what there is additional tax pressure on legal employers, the incomes of social and retirement insurance are lower, and their huge deficit is even more increased. Besides, in perspective, there will be an increase of social cases, people without health and social insurance;
- Questionable employment quality - an employment which drives the growth of the gross domestic product (GDP) bust be preferred. If in the system are employed people whose employment will generate technological development, then it is a case of employment which will potentially drive the growth of GDP.

Given the above, OECD has also identified the causes of unemployment in: too restrictive policy and legislative for protecting the employed workers, collective centralized union bargaining, extending the collective contracts, high rates of minimal wages, too high level of welfare for the unemployed, too high level of taxes, and the lacking of the education system and professional training, in which the "genetics" of the state of unemployment in the member countries was diagnosed.

Given the named causes, in the context of resolving all of the consequences of the global unemployment, as well as unemployment in certain national economies, it is unquestionable that employment must become the leading macroeconomic priority, mostly because the forecast of future global unemployment are not encouraging. On the contrary, they are calling for general mobility, corrective and, above all, effective treatment. This automatically premiums that the governments of the Worlds' biggest economies must change their policies and that they must consolidate through strengthening the coordination of global policies. Unless there are changes in leading the policies, the labor market will capitulate by the end of 2016, and the economic growth will decrease even further. For creating new jobs, and also new work places, the real sector of economy must become absolutely dominant, and to that, a significant increase in inventions in the private sector will contribute.

It is obvious that financing the public sector through state budget debt cannot maintain the economy. On the other hand, narrow focus of many countries on fiscal austerity only furthers the crisis, which generates new debates. Focused measures are necessary to stimulate employment as well as the welfare for the unemployed, subsidies on wages, and other various initiatives of small and medium sized entrepreneurship development. On the other side, it is a fact that the measures of saving, which were pushed by certain national economies, significantly affect the work places, especially within the developed economies, but unfortunately in the negative sense of the word. Namely, the saving measures which were enforced by governments of the European countries, not just that they were not able to decrease the deficit, but damaged the economic growth and indirectly influenced the labor market (Saving measures bring record breaking unemployment rates). Following the above, it is obvious the governments of countries should concentrate more on defining and implementation of programs for stimulating employment in regions of mass unemployment, as well as more engagingly deal with redefining certain programs that showed in action as the appropriate ones. For example, the

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programs of self-employment are the most successful in the sense of mediation in employment and assuring permanent employment. However, they are appropriate only for a very limited number of potential employees who have the potential to start their own business. If a higher number of potential entrepreneurs are included in the program, then the program must be carefully thought through and accompanied by a wide network of support institutions. Before all, with the candidates for self-employment, the ability to run a business must be tested, then it is necessary to organize courses for learning the legislation, accounting and finance, marketing, management, and placement of products and services. Also, the help in making a business plan is necessary. Financial help to "self-employees" is given in the form of grant subsidies or, more often, in the form of preferential loans from the employment fund. Criticism are given from the entrepreneurs to the governments saying it would be more purposeful to, instead of subsidizing, lower the incomes of the state from fees and the VAT. With that, the labor costs would lower, and even the chances for employment of all participants and potential employees on the labor market. They assume that giving tax exemptions to groups which have the lowest income would have its appropriateness.

Special attention deserves the question of crediting entrepreneurs, which should be a motivation for the entrepreneurs, especially small and medium entrepreneurs, and more socially sensitive for the "special" categories of loan fund users, but also non-discriminating when it is about some "sensitive" user categories. Overall, through programs, investing into new technologies and educating the employees whose expertise would be balanced and compatible with the needs of the market should be encouraged. Education, retraining and additional training programs should be directed towards professions and abilities that will be needed in the future. On the other hand, the education programs of high school and college students in the framework of the curriculum should be designed in a way that they really fit the needs of the real sector. Education and profiling of professions which, in perspective, will not be able to find a job in the labor market, because it simply is not accepted by the needs and practice of the society, is absolutely in vain.

Hiring young people is a problem to itself. The International Labor Organization has published that almost 13% of young people worldwide do not have a job, and an even worst fact is that, according to the same source, the situation will not get any better in the next four years. Since 2007 the number of unemployed young people rose to 4 million. Also, it is irresponsible and unjustified that any of the programs and/or measures of competent government institutions are made without an agreement and approval of relevant factors from the sphere of economic life (employers, trade unions, local units of governments and regional self-government) or that the measures are not compatible on the level of certain Ministries. Programs for employment must be coordinated by the Commission for tracking the employment policies, what will ensure its enforceability through neutralizing all the overlaps or diametric interpretations.

Since for the resolving of unemployment an economic growth is necessary, attracting investors is obligatory - foreign or domestic. For a final solution of unemployment the key are investment and export, since the growth of employment cannot be achieved only in the domestic market. For export, an increase in production of quality and recognizable goods is important, and searching for external markets to which it will be distributed. For creating quality goods, it is usually necessary to invest in new technologies, because in these times new technological solutions are reached daily. So, in order to decrease unemployment, production and export must increase. For export, quality products and new technologies are required. We can conclude that only growth in export can ensure the decrease of unemployment, because it will stimulate further production and the need for new work places.

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4. JUDGEMENTS OF GLOBAL UNEMPLOYMENT

The global unemployment is "currently" the most acute problem of the society, a problem of all national economies, which focuses on and converges all relevant factors to complete mobility. The goal is to, no matter what and in the shortest timeframe, stop these wild unemployment rates. But, wishes are one thing, and possibilities are another, and so unemployment is still dominating, leaving unforeseeable consequences.

It is a consequence of a "negative continuous loop", which means that the growing unemployment and lower wages decrease the demand for goods and services, what brings to a decline in business. The question is what are the maximum consequences of the current global economic crisis, and what is the price of this crisis that we all must suffer and pay, since the expectations are that the number of unemployed people will continue to grow, primarily because of the uncertainty which marks various business sectors. On the other hand, a minority of entrepreneurs, which still manage to make somewhat of a profit, prolonged the question of employment for the eventually better coming times, while others, the majority of entrepreneurs, which are fighting not to go under, see layoffs as one of the key factors of their own self-maintenance.

In a situation like that many entrepreneurs stopped even their investment projects, although they are aware that without investment, no progress will be made. If we, however, talk about certain national economies, we can clearly see that, because of the debt crisis, many of the biggest economies of the Eurozone were forced to correct (cut) their budget. All of the above brings us to negative and potentially harmful social implications in the sense of an increase in social affairs, riots, apathy, depression, defeatism etc. Cloudy forecasts speak in favor of the unemployed becoming permanently unemployed, and with that, become/stay a permanent burden for a society that devalued them. So, towards this problem, we must pay attention as it was a strategic priority of all national economies, overlook it in a longer timeframe, since in the short timeframe we simply cannot compress and compensate the consequences of unemployment, and systematically stop the rise of unemployment, mostly because of the open danger and a "threat" of the current crisis that the number of lost work places will double by the end of this year. Namely, the International Labor Organization predicted another recession in developed countries in the first half of this year, of which we are all witnesses, and expresses doubt that the trend of unemployment will not start to decrease before 2016. The next few statements are ILOs judgments regarding the question of unemployment in the future, which suggest the need of an intervention of the widest range of society in the sense of rehabilitating the given world phenomenon:

- Situation will most likely get worse because the global growth is slowing down, and more and more people are entering the labor market. High unemployment which is now a problem in the USA and many other great economies threatens to hurt the global economic recovery. It is unlikely that the world economy will rise in the next few years and in that way decrease the existing deficit of workplaces and ensure the employment of over 80 million people, for which it is expected to enter the labor market in that period.
- Expects that the unemployment will stay at 6% until 2016, what means that the unemployment of young people who are just entering the job market will rise to 206 million unemployed people. If the economic development continues to decrease - only last year it fell by 4% - it is expected that the unemployment will in 2013 grow to 209 million people. It will be most damaging to young people. According to data, the global unemployment of young people is 12.7%. For example, in Spain, every other young person is unemployed (A World Disaster: without jobs 75 million young people).

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- In the next 10 years it is necessary to open 600 million new work places in order to create sustainable growth and keep the social cohesion. Out of those 600 million new workplaces, 400 million is needed just to stop the further growth of unemployment and the absorbing of 40 million people who, for the first time, enter the job market (Every third person in the world lives below the poverty line or is unemployed).
- The fact that cannot be neglected is that it is necessary to create dignifying work conditions for another 900 million workers who, together with their families, live for less than 2 dollars a day, what is below the poverty line. Most of these workers lives and works in countries whose economies are still developing. When we add up all this data, and without the comparison with the data about the uneven allocation of wealth, it is obvious that the current global situation is an absolute disaster (Every third person in the world lives below the poverty line or is unemployed).
- The number of unemployed in the G20 group grew 1% in 2010, and it should have risen by 1.3%, so the rate of unemployment would, by 2015, go to a level before the crisis. We cannot oversee that the rise of employment was less than 1%, with regard to the slowing down the world economy and the anemic growth that is predicted in some G20 countries. If the employment by the end of 2012 continues to grow at a rate of 0.8%, for which there is a good chance, the number of lost jobs in the G20 countries will grow for about 20 million, and a total of 40 million (Leading economies late in opening new jobs)

5. CONCLUSION

The problem of unemployment is the cancer of todays' society as a whole, and also some national economies. It seems so hopeless that despite all the initiatives, measures and programs, national economies cannot, on the right way or separately, nor integrally confront, nor stop these negative trends. Unfortunately, this problem is metastasizing from month to month and it is a dominant question - what is the level of tolerance, or the possibility of utmost exertion, since the pressure on the society becomes/is unsustainable. Long-term unemployment became, in the framework of this global problem, a problem for itself, as well as is the problem of unemployment of youth. The nature of this universally massive scale in the sense of unemployment, some socially sensitive categories are also assuming: people with lower work ability, national minorities, women with children, what for a result has a "vector" directed conversion into apathy, disbelief, loss of self-confidence, distrust, isolation, crime, defeatism.

All countries strive to, through adequate measures and programs, confront and fight this problem. However, the impression is that the relevant factors, primarily governments of countries, are not committed to this problem consistently, meticulously and deeply enough, but rather declaratively on the rhetorical level, unsystematically, rashly, sporadic, without the proper development, with insufficient funds. Unemployment must, before all, catch the attention of all, become a priority, solving it a social commitment, it should be nominated as a leading macroeconomic priority and addressed accordingly, especially because the judgments of the future global unemployment are not encouraging. Republic of Croatia, in the framework of this problem, must also recognize its initiatives and chances, according to its own possibilities. Measures which did not contribute with the expected results should be redefined or even discarded, programs should be newly generated, expanded, further innovate, entrepreneurs' doubts should be softened or completely neutralized, procedures sped up, the factors of mobility activated. This degree of social urgency insists on general mobility and corrective

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and, before all, effective action. It, before all, demands a complete consensus on the this topic, what means that all the controversy, seeking, attempts, attitudes, dialogs, animosities must crystalize as a result of a joint project of all relevant factors and all nations.

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THE EFFECTIVENESS OF INTELLECTUAL CAPITAL OF COMPANIES ORIENTED AT VALUE CREATION (AN EXAMPLE OF WARSAW STOCK EXCHANGE COMPANIES IN POLAND – WIG 20)

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Abstract

The development of knowledge-based economy determines the need to change the perception of the factors determining the value of companies. Currently, increasing importance of intellectual capital in the process of building this value is emphasized, especially in knowledge-based sectors.

The growing role of intellectual capital not only determines the need to identify its components, measurement, or appropriate management, but also requires continuous verification paying special attention to the assessment of the effectiveness of creating value in companies from intangible assets. The practical application, however, requires the use of new measures of the effectiveness such as the VAIC ™ index, whose essence can be come down to the measurement of the effectiveness of added value creation from intellectual capital.

Key words: *intellectual capital, value creation, VAIC™ index, business performance indicators, effectiveness*

1. INTRODUCTION

Value creation in modern enterprises is determined to a higher degree by components of intellectual capital (human capital, organizational capital and customer capital). They constitute stimulators of value creation of an enterprise. However, it should be emphasized that creating value from intellectual capital is different from the value creation of tangible assets. The components of intellectual capital rarely have a direct impact on financial results (they have an influence by the complex chain of cause – effect relations), they also rarely create the value on their own (they have to be combined with other assets) (Surma, 2006). Yet, they contribute to increasing the value of the company by creating new products, new business processes and creating new forms of organizations. They determine the economic efficiency of enterprises and should be the primary criterion to assess the achievements of modern organizations.

Taking the above mentioned into consideration, assessment of the effectiveness at the level of the company, gains a new meaning. This is particularly true for knowledge-based sectors, in which companies are focused on creating value. This determines the need for the development and use in their practice systems of effectiveness measurement, which take into account not only the impact of material resources, but first of all intangible assets constituting artifacts of intellectual capital. Only the use of such constructed systems of effectiveness measurement allows comprehensive evaluation of

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companies within creating value and constitutes a criterion to assess the level of change (Szczepankowski, 2007).

The aim of the article is to present the problems of assessing the effectiveness, in the context of the growing importance of intellectual capital. Taking into consideration the complexity of the issue in question, the main attention will be focused on:

1) presentation of the limitations in measuring the effectiveness using traditional measures, especially in relation to companies oriented at creating value;
2) showing the scope of VAIC™ ;
3) practical application of the VAIC™ index in terms of measuring the effectiveness of intellectual capital of WIG20 companies oriented at value creation on the Warsaw Stock Exchange in Poland.

2. INTELLECTUAL CAPITAL AS A FACTOR IN DETERMINING THE VALUE OF THE COMPANY

At the current stage of economic development, which is often referred to as the knowledge-based economy, the perception of companies has significantly changed in terms of their functioning and development. This aspect is considered increasingly from the perspective of achieving their objective which is value creation. The value is becoming a basis to evaluate companies' activity, which determines the need for continuous research on value creators. As A. Damodaran states, "the key to success (...) lies not so much in understanding what the value is, but primarily in the discovery of its sources" (Damodaran, 2002). Therefore, understanding the sources of company value is the basis for making rational decisions, since they are the primary cause of existence and creation of company value.

Currently, achieving economic success by enterprises does not depend only on traditional resources. The era of knowledge has changed the essence of understanding the term "wealth of an organization" and manner of its creation. Although material resources are still essential for the functioning of a company, intangible assets of intellectual capital are increasingly gaining importance. Enterprises with unique intangible assets difficult to imitate and substitute are becoming more competitive in the market.

Companies focused on creating value should establish a portfolio of assets based on their unique combination, where components of intellectual capital are important – human capital, organizational capital and customer capital. The portfolio of assets designed in this way determines the economic success of the company, because intellectual capital reveals synergistic integration of enterprise resources as a factor of market value. Obtaining a synergistic effect occurs through a complex combination of intangible assets which enable the generation of future benefits and create a realistic chance of achieving a sustainable competitive advantage.

Intellectual capital is a complex economic category, about which there is no consensus in terms of its definition. H. Itami argued that IC is an intangible asset which includes technology, customer loyalty, brand name, goodwill and copy rights etc. Intellectual Capital is a knowledge and information which create the value added efficiency to create wealth of corporations argued by Stewart. A. Pulic concludes IC as employees and their abilities to create value added efficiency (……).L. Edvinsson, the first director of the intellectual capital in the world, describes intellectual capital as a possessed

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knowledge, experience, organizational technology, relations with the customers and professional skills which will give the company a competitive advantage. (Edinsson, Malone, 2001). B. Lev describes the none-material assets (incommensurable assets) as rights to prospective gains, which have no physical or financial dimension and include such positions as : patent, trademark, unique organizational structure, generating savings in the expenses. (Lev, 2001).

Intellectual capital reflects the firm's ability to transfer knowledge and its practical application in order to create value. Its level and structure determine the future potential of the organization. Undoubtedly, human capital is a component that connects all the elements of intellectual capital. It represents "a catalyst which activates intangible, passive forms of intellectual capital as well as passive forms of physical capital, so the efficiency of the organization is improving " (Fitz-enz, 2001). By integrating the knowledge and skills, it has the ability to use resources in a different and unique manner. It includes all characteristics and properties inherent in people that contribute to the creation of value (Pocztowski, 2003). It is a combination of knowledge, skills, experience and capacity of individual employees who have an economic value to the enterprise. Its essence is focused on the value of people in the economic sense and relates to the accumulated value of the investment in training of employees, their competencies, and future. Human capital is a set of individual characteristics of employees and corresponds to the creative, thinking part of intellectual capital. It is the capital of particular value for the enterprise, because it participates actively in the current process of its creation.

The second component - organizational capital (i.e. internal structural capital) is the product of intentionally directed activity of people. It reflects human capital transformed into the permanent values and as the effect of intellectual activities includes such assets as trademarks, patents, copyrights, licenses, franchises, brands, know-how of the organization, databases (e.g. market or customers databases), IT systems, software, etc. The organizational capital determines the efficient creation of added value and its growth of other components of intellectual capital as well as physical capital (Lev, 2001).

The last of the above mentioned components of intellectual capital is relational capital (i.e. external structural capital). It includes the potential that the organization has in relation to intangible assets associated with the market, such as customers and their loyalty, customer relationships, distribution channels, concession contracts, relationships with other companies, suppliers network, and others. The level of the relational capital is now considered as one of the most important means of company value, since it determines involvement of a given organization in the creation, use and dissemination of knowledge of strategic importance (Bratnicki, 2001). Relational capital is not only a direct source of cash flows, but also is one of the most important sources of competitive advantage.

The growing role of intellectual capital determines the necessity to identify its components, their measurements, and appropriate management. It also requires verification paying special attention to assessment of the effectiveness of creating value in companies with intangible assets (artifacts of intellectual capital).

3. EVALUATION OF THE USEFULNESS OF TRADITIONAL INDICATORS TO MEASURE THE EFFECTIVENESS OF INTELLECTUAL CAPITAL

Effectiveness reflects the positive characteristic of activities undertaken by enterprises, and its measurement is a key element of a model of value management in a company. However, measurement of effectiveness is a complex issue, which is mainly determined by (Dyduch, Bratnicki 2006):

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- the lack of a developed universal set of criteria to enable precise measurement of effectiveness,
- the search for better and better systems for measuring effectiveness, largely based on non-financial measures, which would allow to predict future financial results,
- an excess of instruments measuring effectiveness, as a result of continuous adjustment of existing systems for measuring effectiveness to the changing conditions of the functioning of enterprises,
- arbitrary selection of measures, resulting from the difficulty of choice which method is better,
- the lack of correlation between the measures of effectiveness,
- difficulties in evaluating some economic and financial results.

An important factor is also the growing importance of intangibles in value creation of modern enterprises.

In practice, many indicators were developed that allow measurement and evaluation of the effectiveness of the business activity in a multi-faceted manner, indicating the diversity of factors affecting its level. Some of them are based on financial performance and take the form of relative measures (value indicators) that allow measurement of the level of value created by the company. Other measures are absolute (return indicators) which enable the measurement of the effectiveness of the company by reference to the value of employed capital to achieve certain effects (Dudycz, 2005).

Table 1. Types of business performance indicators

Types of indicators	Basis for construction of indicators
Accounting indicators	*Based on the various forms of financial results of the company (accounting surplus from the activity): ROI, ROA, ROE, DFL, DOL, EBIT, EBITDA, NOPAT, NP., EPS*
Financial indicators	*Based on various forms of cash flow financial surplus from the activity): IRR, CFROI, WACC, FCF, DCF, NPV, CVA*
Market indicators	*Based on the content of the accounting and financial indicators: TRS, XVA, VCI, EVA, EVC, MVA, SVA*

Measuring the effectiveness based on accounting and financial indicators allows to obtain aggregated information about results of the company and is also characterized by simplicity and relative ease of results interpretation. These indicators are precise, internally generated by the accounting system, they are expressed in numbers and are of diagnostic character. On the other hand, they are criticized for orientation on past periods and susceptibility to manipulation. They are often partial measures and

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provide short term information, which allow mainly to monitor the current results. They are also characterized by a low correlation between accounting results and their market valuation. These indicators do not provide the possibility to assess the company's progress in implementing its strategy based on: investment in human capital, outlays on research and development, relational capital. They are able to generate information on the created or destroyed value of the company only to a small extent. Financial indicators describe mainly the activities implemented in the past, but do not provide any tips how to create future economic value.

There are attempts to solve the above problem by using indicators based on market value in the evaluation of the effectiveness. Unlike the 'traditional' systems of results measurement, they are based on economic measures (cost of capital, operational profit) that go beyond the accounting category. Among them, more and more practical applications have: EVA – Economic Value Added, EVC – Estimated Value Created, SVA - Shareholder Value Added and MVA – Market Value Added. Market indicators belong to the group of created value measures and reflect directly the processes of creating value in the enterprise. They are a tool for assessing the effectiveness of the company through the angle of maximizing its value (Skoczylas, 1998). They allow the measurement and evaluation of the effectiveness of the business activity in a multi-faceted manner, indicating the diversity of factors affecting its level.

Among them, the indicator EVA - economic value added has more and more practical application. It is a market measure belonging to the group of value created measures (Cywnar, 2003). EVA allows the measurement of goodwill by determining the added value created from operating activities. It comes from the concept of residual income. It identifies the value that a company adds to the capital provided by stakeholders.

Although EVA indicator goes beyond the category of accounting profit and relies on value added, it does not provide sufficient information on the impact of intangible resources to create value. This is a significant limitation in practice for measuring efficiency in companies where value creation is determined more and more by components of intellectual capital (human capital, organizational capital and customer capital).

4. VALUE ADDED INTELLECTUAL COEFFICIENT VAIC™

The growing role of intangibles in companies focused on creating value reveals the limited nature of traditional measures of evaluation of company effectiveness, both in financial and operational field. In practice, the object of measurement are primarily material resources, but due to the lack of developed standards to a small extent or not at all, intellectual capital is not included. This limits the possibilities for interpretation of effectiveness indicators, as well as possibilities to influence their level.

Ambiguity and often static incorrectness of traditional measures of effectiveness determine the necessity to develop and implement into the practice such solutions which allow to capture in the measurement of the effectiveness key resources for added value. Currently, ongoing work is conducted in two directions. The first one concerns the development of such methods of measurement whose value of indicators could be clearly and precisely determined on the bases of financial reports of the company, on the other hand could present as widely as possible the results of the use of resources (both tangible and intangible). The second one is an integrated approach to the system of

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measurement of effectiveness[1], in which traditional financial indicators are completed by non-financial measures and are related to the strategy and vision of development of companies.

An interesting solution within the first field of study, especially for enterprises oriented at value creation based on intangible assets, is application of the index VAIC™ *(Value Added Intellectual Coefficient)*[2] to measure the effectiveness. Its essence comes down to the assessment of added value generated by the company and determination to which extent components of intellectual capital and tangible assets influence the achievement of this value .

The VAIC™ index allows to measure the effectiveness of added value creation, not only of the tangible assets, but also of intellectual capital. Its methodology is based on the assumption that every economic activity can be assessed by the market, which translates into added value. According to the premises of the VAIC™, apart from human capital, structural capital (intangible part of the capital, which acts as a "effect multiplier" against equity) is an essential component of intellectual capital. Structural capital, which includes the organizational capital and relational capital, is one of the most difficult element of the VAIC™ indicator. Its determination is not entirely clear, since it is not a standard investment and it is difficult to determine where to invest to increase the value of structural capital. Also structural capital is inversely proportional to human capital in the creation of added value. This means that the less structural capital takes part in creating added value, the more human capital is involved in creating value. (Pulic, 2004)

The value added intellectual coefficient VAIC™ combines then together two research areas: the study on intellectual capital and the classical economic approach, in which outlays are compared to the results of particular activities. It provides information about the overall view of:

- efficiency of use of capital employed - ***CEE*** *(Capital Employed Efficiency)*
- efficiency of use of human capital - ***HCE*** *(Human Capital Efficiency)*
- efficiency of use of structural capital - ***SCE*** *(Structural Capital Efficiency)*

in the functioning and development of added value of the company by applying the following formula:

VAIC™ = VAIC = CEE + HCE + SCE

The level of VAIC™ indicates the efficiency of the use of all its resources by the company. Its growth should be viewed positively, as it reflects the improving efficiency of the company and higher added value. This means that with the available resources, the more effective resources, both the tangible and intangible, are used the greater value is created by the enterprise. It is also the basis for creation of detailed aggregated indicators (Pulic, 2000; Mavridis 2005):

1. Intellectual Capital Efficiency index (intellectual ability of the examined enterprise) - ICE which allows the measurement of intellectual capital participation in the generation of added value of an enterprise. It is defined as the sum of the human capital efficiency index (HCE) and structural capital efficiency ratio (SC).

[1] For more on the evolution of integrated systems of effectiveness measurement (Dyduch and Bratnicki, 2006).

[2] The method of measuring the effectiveness of intellectual capital developed in 1998 by Ante Pulicia (professor of economics - an expert in the field of research on intellectual capital).

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2. Business Practices Index (BPI), which allows the assessment of the company through the angle of its ability to use its own and human capital in the creation of added value. It is defined as the sum of the capital employed efficiency (CEE) and the ratio of human capital efficiency (HCE).
3. Human capital efficiency index (P1), whose level reflects the efficiency of employees or the monetary value added per employee. It is determined as a quotient of the value added (VA) and total employment in the company (LZ).
4. Efficiency ratio of the added value creation (P2), which determines the ability of human capital in creating value in the enterprise. It is determined as a quotient of the value added (VA) and the sum of human capital (HC) and amortization (A).

The applicability of detailed indicators is important from the viewpoint of internal analytical needs of the company, because it allows the following (Bień, 2002):

– obtaining reliable information necessary for making operational and strategic decisions,
– the rationality of a decision making process,
– forecasting the financial situation in the enterprise,
– the control of compliance of the actual course of economic activity with assumptions determined in a decision making process.

The VAIC™ index can complement traditional methods of measuring the effectiveness[3]. Due to the use of general accounting data, which are audited, and thus objective and verifiable (Firer and Williams, 2003), it increasingly finds application. Its practical application is substantiated by the fact that it is characterized by clarity and comprehensiveness, as apart from material resources it allows the visualization of efficiency of using the components of intellectual capital. It also allows the identification of inefficient areas of the company's activity and shows the weakest points in the value creation.

5. THE ANALYSIS OF THE LEVEL OF VAIC ™ INDEX OF WIG20 COMPANIES LISTED ON THE WARSAW STOCK EXCHANGE IN POLAND

Measurement of efficiency in companies oriented at value creation should be carried out using such indices which include and show not only the influence of tangible assets but also intangible assets constituting intellectual capital. It is important, as nowadays it is indicated that the value of the company is determined by owned intellectual potential, whereas to a lesser extent by the effect of physical investments. Such a broad measure is possible by the use of the VAIC™ index. It allows to control the process of creating value by monitoring three areas: human capital, structural capital and capital employed. It uses measures which in an optimal way reflect the structure of the conceptual model developed on their basis (Nazari, Herremens, 2007), based on the calculation of the rate of efficiency in areas such as:

[3] It introduces the basic standards for measuring the effectiveness of the company.

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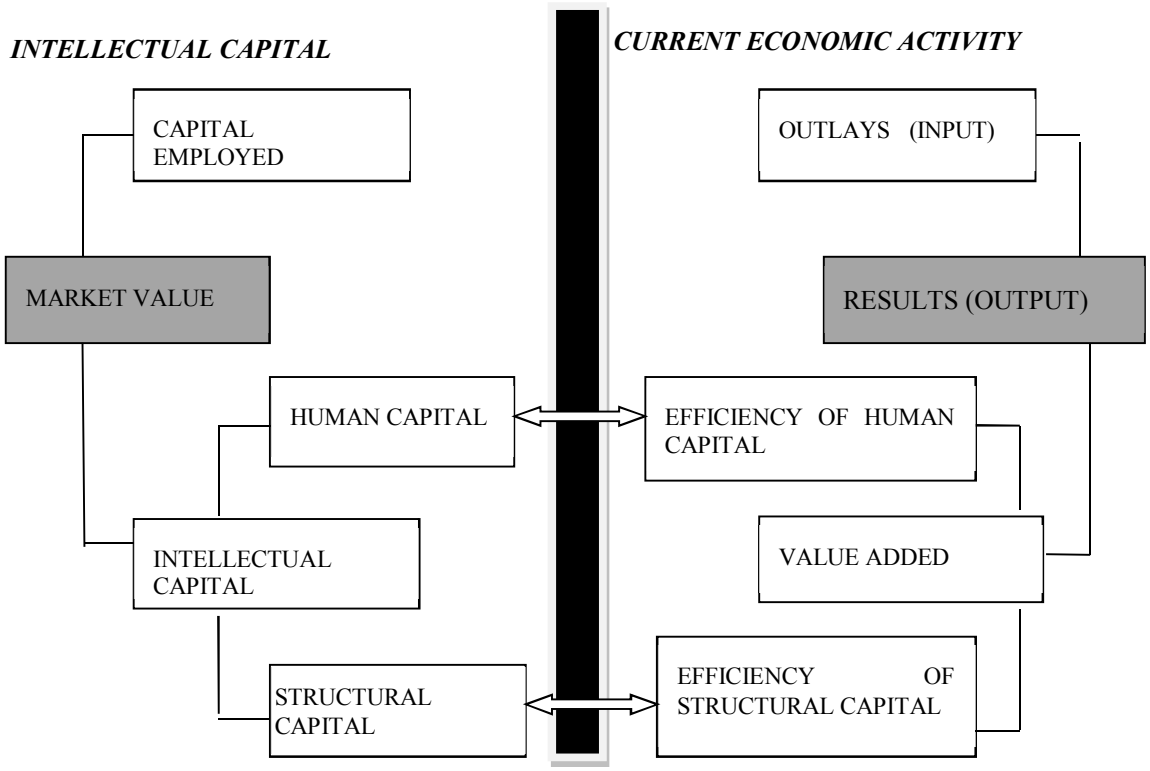

Fig. 1. Conceptual framework of the VAIC™ method

Source: (Pulic, 2004)

1) the rate of efficiency of human capital $HCE = VA/HC$
2) the rate of efficiency of structural capital $SCE = SC^{4}/VA$
3) the rate of efficiency of capital employed $CEE = VA/CE^{5}$

In each of these areas the measure which is value added (VA) is applied.

VA = OP + HC + A

where:

OP – operating profit

HC – the outlays on employees (remuneration and employee benefits), considered in terms of investment.

A – the level of depreciation.

[4] SC is calculated as the difference between value added and value of human capital.

[5] CE reflects the book value of net assets.

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The analysis was conducted on the WIG20 companies listed on the Warsaw Stock Exchange in Poland. They are characterized by high market capitalization and diverse share in the sector and industrial structure.

Sector	***Industry***	***WIG20*** *(information sheet)* ***companies***
SERVICES (22.67%)	TELECOM	**TPS** (6.71%)
	IT	**ACP** (2.28%)
	ENERGETICS	**PGE** (9.06%) **; TPE** (3.53%)
	MEDIA	**TVN** (1.10%)
INDUSTRY (35.81%)	CHEMICALS	**SNS** (2.07%)
	FOOD	**KER** (2.04%)
	BASIC MATERIALS	**LWB** (2.90%) **; JES** (2.48%); **KGH** (12.65%)
	OIL & GAS	**PKN** (7.79%); **PGN** (4.30%); **LTS** (1.09%)
FINANCE (41.52%)	BANKING	**PKO** (13.68%); **BRE** (2.40%); **BHW** (1.69%); **PEO** (10.99%)
	INSURANCE	**PZU** (12.07%)
	DEVELOPERS	**GTC** (0.70%)

Fig. 2. WIG20 companies from a sector and industrial perspective

Source: www.gpw.pl

The study adopted a timeline covering the period 2007-2011. This is the period covering the different behavior of the market as a result of the economic crisis, which has been reflected in the macroeconomic situation and the behavior of capital markets.

The effectiveness of the use of intellectual capital is related to the macroeconomic situation. Deterioration in macroeconomic conditions, which is reflected in the GDP growth, is translated into deteriorating financial results, and consequently a decrease in the efficiency of intellectual capital.

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Table 2. The VAIC ™ index for WIG20 companies in 2007-2011

Year	Minimum	Q25	Median	Q75	Maximum
2007	2.62	3.12	3.94	4.52	8.09
2008	2.62	3.10	3.59	4.51	11.41
2009	2.66	3.20	3.74	5.26	10.67
2010	2.20	3.52	3.86	4.86	10.46
2011	2.60	3.58	4.30	6.15	9.45

Source: own calculations

In 2007, the median rate of VAIC™ in the analyzed public WIG20 companies was 3.94, a year later dropped to the level of 3.59, then since 2009 recorded a gradual increase. In 2008, it was the period of economic slowdown and the Polish economy grew at a rate of about 4.8% of GDP. Since 2009, there was an increase in GDP growth.

The analyzed companies were characterized by different levels of the indicator. The lowest was between 2.2-2.66, while the highest between 8.09 - 11.41. In the analyzed period the lowest rate of the indicator was in a company of the oil industry, while the highest was typical of companies operating in energetic, information technology and chemical industry.

The level of the VAIC™ indicator not only allows the assessment of effectiveness, but also allows to control the process of creating value by monitoring three areas: human capital, structural capital and capital employed. The first two are components of intellectual capital, whereas the last one of the traditional capital. But from the viewpoint of effectiveness assessment it is important to analysis it in these three areas, as increase in value of companies is the result of a synergistic effect occurring between the tangible and intangible resources.

Table 3. The rate of human capital efficiency (HCE) in WIG20 companies in 2007-2011

Year	Minimum	Q25	Median	Q75	Maximum
2007	1.67	2.14	2.80	3.71	7.03
2008	1.69	2.24	2.64	3.41	10.47
2009	1.61	2.10	2.76	3.95	9.74
2010	1.67	2.55	2.90	3.68	9.54
2011	1.96	2.53	3.32	4.69	8.11

Source: own calculations.

The rate of human capital efficiency in the analyzed companies was characterized by a different level. For about 25% of the analyzed companies the rate of efficiency in subsequent years was at the level equal to or lower than 2.1-2.55, while for 75%, from 3.41 - 4.69. The highest levels of human capital

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efficiency rate were recorded in the companies of energetic, information technology and chemicals. In general, human capital efficiency indicators were characterized by a high level, which shows their significant impact on the overall rate of the VAIC ™ index.

The rates reflecting structural capital efficiency were significantly lower than the rate of human capital efficiency. It results from the fact that human capital and structural capital are in inverse proportion to each other. An increase in the share of human capital in creating value added results in a decrease in the share of structural capital.

Table 4. The rate of structural capital efficiency (SCE) in WIG20 companies in 2007-2011

Year	Minimum	Q25	Median	Q75	Maximum
2007	0.40	0.60	0.70	0.79	0.86
2008	0.41	0.55	0.62	0.71	0.90
2009	0.38	0.52	0.64	0.75	0.90
2010	0.40	0.61	0.66	0.73	0.90
2011	0.49	0.60	0.70	0.79	0.88

Source: own calculations

The median ranged from 0.62 to 0.70, which shows the structural capital efficiency at a lower level, but the direction of change was consistent with the one characteristic of the general level of the VAIC™ index. Structural capital in the analyzed companies has lower impact on overall efficiency. However, a convergence can be observed, since the highest level of the rate of structural capital efficiency reached companies in the IT industry, energetic and chemical industry.

The lowest level of the efficiency rate in the analyzed companies was characteristic of the capital employed. The median ranged from 0.31 to 0.38. This means a low benefit to the analyzed companies from the use of capital employed in the creation of added value. It also indicates that this capital is the weakest point of value creation in the analyzed companies.

Table 4. The rate of capital employed efficiency (CCE) in WIG20 companies in 2007-2011

Year	Minimum	Q25	Median	Q75	Maximum
2007	0.02	0.26	0.35	0.53	1.08
2008	0.04	0.25	0.38	0.52	0.85
2009	0.03	0.22	0.31	0.52	0.85
2010	0.03	0.22	0.31	0.40	0.92
2011	0.02	0.23	0.31	0.45	0.96

Source: own calculations

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CONCLUSIONS

Changing the perception of the resources that are generators of value causes that the assessment of a company requires a variety of effectiveness indicators, especially those that make it possible to quantify the effectiveness from its various aspects and for different needs. Undoubtedly, the VAIC™ index plays such a role, which allows not only the measurement, but also monitoring the efficiency of value creation in the enterprise. By assessing the effectiveness of the management of physical capital, human capital and structural capital, stakeholders can get information about where value is created and where it is destroyed. Its simplicity is also an advantage as well as low impact of trends in capital markets on its level. This last aspect is particularly appreciated when assessing the effectiveness of intellectual capital using the index MV (market value)/BV (book value). The level of this index indicates the saturation of the company with intellectual capital. The higher its value, the more companies base their activities on intangible assets. Unfortunately, interpretive possibilities are limited in the case of turbulence occurring in the capital markets, because behavioral factors have a big impact on the valuation of companies. For large drops it often turns out that the rate of MV/BV is at the level below one, suggesting a lack of intellectual capital. These imperfections are eliminated by the VAIC™ index and changes of its value does not reflect the trends in capital markets.

In the analyzed companies representing the stock market index WIG20, the VAIC ™ index was at a different level. Also the trends in this aspect varied. The conducted analysis indicated that in 2007-2008 there was a decline in average values of the VAIC™ and components of intellectual capital, whereas since 2009 an increase could be observed. However, it was not characteristic of capital employed, which showed a reverse trend. The analysis also showed that a high rate of human capital efficiency had the biggest impact on an average level of the indicator, while the lowest scope of impacts had the rate of capital employed efficiency. It should be emphasized that in any of the analyzed companies there was no effect of destroying value, what is reflected in positive levels of effectiveness indicators from all three areas affecting the level of the VAIC ™ index.

The conducted analysis of VAIC™ index has allowed to determine the efficiency of the creation of value added from both tangible and intangible assets, providing at the same time the answer to the question to what extent intellectual capital has been used in the analyzed WIG20 companies.

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ON ASPECTS OF TIME IN CORPORATE STRATEGIES

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Abstract

Time is one of fundamental aspects of any planning, including strategic planning. Classical approach to time scales was standarizing time horizons for different categories of company's planning: operational, tactical and strategic planning. It was also typical of classical approach to link strategies to long time horizons . A challenge to that approach was the so called turbulent environment and failures of strategies in practice .The aim the a paper is to present the result of studies and research on time scale in corporate strategies. In a paper factors influential upon the time scales of strategies are identified. As one of factor of big importance author indicate growing complexity of strategic targets.On the ground of studies and the research , the concept of monochronic and polychronic strategies is proposed.

Key words: *time scales, strategic planning, turbulent environment,tactical plans,corporate strategies,*

1.INTRODUCTION

Time is fundamental aspect of any planning ,including strategic planning. It used to be interpreted in alternative ways: time as an asset and time as a scale. In the first instance, time can be compared to capital, labor or knowledge. Preparations to Euro 2012 Eastern Europan countries , showed that they had everything to build new roads, stadiums etc., but they lacked time. Time is also a scale to measure the above asset. Time has always been too important factor not to be observed. However time scales as special aspect of company strategies have not deserved enough exploration.

2.LONG RANGE PLANNING VERSUS ELASTIC COMPANY

Strategy as a category, historically taking ,was not based on time considerations .In ancient armed forces, when strategy as a concept evolved ,the reason for having strategy was to divide troops in order to win , not to divide time.

Later, in XIX century, in an interpretation of strategy, by von Clausewitz , time was used as one of strategic aspects : „in strategic plan it is stated when, where ,and which what tools the battle is to be conducted" (von Clausewitz , 1967 p.41) . Timing was important as a way of coordinating military activities. However , long time perspectives were not very important here.

Long time period started to be one of important categories for economists , for instance for Marshall (A.Marshall,1881). and for J.M.Keynes (Keynes 1936) .

For many authors who pioneered adoption of startegy in managerial scienices, time was not crucial aspect of a strategy .The core of strategy was to combine targets and instruments (Lyon, 1926).Lyon

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who pioneered introduction of contemporary use of strategy, indicated the role of relationships between company's resources and environmental changes. He stressed fundamental reason for a company to have strategy- coordination role of strategy (Prymon 1982,Sharma 1999).Time used to be mostly indirectly included as an aspect of strategy .

In the beginning 50' of last century , in the context of long range planning , time started to be appreciated as both fundamental aspect of strategy, and as a scale. It started to be commonly believed that strategy per se , is a long period concept. Within the framework of process of evolution of management systems (Aaker,1988 p.10), long range planning was substituted by strategic plannnig This concept was to be continued by strategic market plannnig. Basic assumption of it was that plannnig cycles concerned with long range planning ,were inadequate in dealing with sudden changes (Aaker,1988 p.10).

Despite changing attitudes to the role of time horizons, for some authors long terms continued to be an attribute of strategies. In evolving in 80' of last century,new stream of theory of management – strategic management, essential group of authors used to appreciate the role of long terms. Krupski stresses that '..planning processes should lead to long term growth targets [Krupski ,1998 p.96]. Stabryla says that strategic planning is „in general long term planning "(Stabryła, 2002 p.220).

At 70- and 80' of the XX century more and more authors started to doubt about practicability of formulating the strategies in the form of long range concepts and about formal strategic planning.

Thomson and Martin summarize weaknesses of formal strategic plannnig as follows:

-planning was often carried out by planners,rather than managers who would be affected by the resultant plan,

-as a result,the outcome of planning was often a plan which in reality had little impact on actual management decisions,and therefore was not implemented,

-the planning techniques used were criticized because of the way in which they were used,- the important elements of culture and total management were usually left out (Thomson and Martin,2005,p.406).

Time perspectives started was disregarded in the so called process school of management .In the context of the process school they indicated that formalized planning constrains managerial flexibility,adaptability ,creativity,creativity and learning. So strategy should not be formulated .It should rather emerge as a pattern of actions (Bower 1974,Quinn 1978). Also in the context of resource-based school of managment the focus is on managing internal resources -especially key competencies (Hamel and Prahalad 1994)-rather than on far reaching market concepts. Some concilliation between popular schools of management proposes Stonehouse .He contends that there is growing evidence that company's activities have to be subordinated to the market .They have to be sensitive to clients needs.As a result a company has to analyse markets on which it can use its competencies (Stonehouse et al.,p.12) .

It is especially theory of chaos that raised doubts about long terms.

The basic implications of this theory are:

-the management cannot control its future activities , because of environmental factors that are completely unpredictable,

-company's environment so far stable, can change in instable environment,without obvious reasons,

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-far reaching planning is useless since it is impossible to predict the future (Bennett 1999, p.116).

The above conclussions, although derived from observations of failures of corporate strategies, are exaggerated. Some trends in the market are predictable and thinking of the future is unavoidable in the decission making process which is the core of management .The real problem is the level of probability of predictions and the very approach to predictions.Also the problem concerns the lenght of strategic time periods, to be included in strategic process.

To answer the question of the lenghts of strategic periods, one should answer the question ;why ,if ever, the strategy should cover long terms?

There could be at least three reasons for that.

- First is ,that it is in long time period that links between different processes in the market, can be observed.

-The second is that some strategic goals can be accomplished only in long times.As an example could be such goals like to change some consumers behaviors, or to develope new product that is desired by the market.

- Third reason is that the use of some strategic tools requires long time .For instance developing and implementing new technologies.

Accepting the above reasons for far reaching strategies, one should, however, have in mind some market changes leading to shortening strategic time horizons:

-The first change is growing competition. In the light of competition, even if forecasts for whole industry are reliable,much less reliable are forecasts for market shares of particular companies .As a result, for a company , far reaching forecats are less interesting than they could be provided less competition. Competition has been fostered by deregulation of markets and globalization of sectors, but also by growing popularity of acquisitions and mergers.These processes make changes of powers in the market less predictable.

-The second change is new techological potential leading to shorter technological and product life cycles. As a result the use of new technologies can be less time consuming. At the same time, however, shorter life cycles mean higher uncertainty about possible activities by competitors.

-The third change is new possibilities of elastic sourcing, like strategic alliances or contract manufacturing. As a result some company's goals can be accomplished in shorter time periods than before.

-The fourth change , what is commonly shared observation, is growing turbulence of environment. As Mintzberg declares- strategic plans reached their zenith in days of greater stability. They are less useful in today's turbulent environment (Mintzberg ,1994).

As for the last change ,we can doubt about real scale of turbulence. If today's turbulence is a matter of a fact , one should still accept that in the past firms' environment also used to be turbulent .

It was as long ago as ,in 1926 that the mentioned above L.S.Lyon, to prove the need for a company to have a strategy set as an basic assumption- changing environment. No doubt that there were periods in XX century when envioronment was favorable for some companies : times of monopolization of some industries, times of govermental protection over some companies, times of nationalization of some sectors ,or after all some post war time when demand for products used to excede the supply. It is

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not enough, however, to confront old times as good for companies , with new times as totaly bad. There is some evidence that environmental turbulence is weeker than it is thought to be.

Market turbulence should be offset in of growing bancrupcies in business. In fact ,in some countries at least, we have not noticed such a trend. Observation of dynamics of bancruptcies in the USA in the period 1980-2007, till the economic crisis, shows that in nearly 30 years period number of business bancruptcies was not growing (table 1).

Tab.1 Tab.1 Annual Business Bancruptcy Filings by Year –in thousands (1980-2011)

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Number	43.6	48,1	69,3	62,4	64,0	71,2	81,2	82,4	63,8	63,2	64,8
Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Number	71,5	70,6	62,3	52,3	51,9	53,5	54,0	44,3	37,8	35,4	40,0
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	-
Number	38,5	35,0	34,3	39,2	16,9	28,3	43,5	60,8	56,2	47,8	

Source: American Bancruptcy Institute,2012

Conclussion could be that in new, the third milenium (till the year 2008) environment was not much more turbulent than it was in the past.

Also ,in contrary to some commonly shared beliefs, we observe very conservative structure of contemporary markets. An author's research on the age of companies who are leaders in worldly markets, shown that majority of today's giants originated 50 and even 100 years ago (Prymon,2010)- see table 2 and 3.Also research on the real role of diversification in big old companies indicate moderate conservatism of companies . Research on the group of companies that are biggest in the world and at the same time very old (older that 100 year) has shown that only 34 per cent of them gained unrelated diversification and 16 per cent gained related diversification and 52 per cent continue the same business (Prymon 2011).

Table 2. Time period when today's biggest American companies were established

	Until 1900	1901-1910	1911-1920	1921-1930	1931-1940	1941-1950	1951-1960	1961-1970	1971-1980	1981-1990	1991-2000	2001-
Number of comp.	217	47	71	79	29	49	47	63	65	55	26	2
Per cent	28,9	6,3	9,5	10,5	3,9	6,5	6,3	8,4	8,7	7,3	3,5	0,3

Source: Calculations based on data :*Hoover's Handbook ofAmerican Business 2007*, Austin:Hoovers&DB Company

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Table 3. Time period when today's biggest world companies were established

	Until 1900	1901-1910	1911-1920	1921-1930	1931-1940	1941-1950	1951-1960	1961-1970	1971-1980	1981-1990	1991-2000	2001-
Number	139	19	20	26	16	21	18	19	7	11	4	-
Per cent	46,3	6,3	6,7	8,7	5,3	7,0	6,0	6,3	2,3	3,7	1,3	-

Source: Calculations based on data:*Hoover's Handbook ofWorld Business 2006*,Austin:Hoovers& DB Company

The above observations are not used to reject the role of a turbulence. They rather could lead to connotation that the level of turbulence is not enough to prevent companies from looking at long term strategic concepts. Also it can be added that the very turbulence not necessarily should lead to ignoring long periods. On the one hand, at a time of turbulence a company really may focus on day by day survival. On the other hand , losing the sight of long perspective should lead to deepening company's problems resulting from wrong deployment of assets.

3.TIME SCALES FOR STRATEGIC PLANS

In the light of variety of schools of strategy and variety of approaches to strategy, in the context of strategic management, it is necessary to explain an author,s view point on strategy. Proposal is to „agree" on the so called minimum for a strategy which consists of four elements:

-strategy is a kind of concept,

-the concept is of fundamental role for a company,

-the concept is inclusive of firms targets,

-the concepts covers redundancy of company's resources (Prymon,2010 p.18).

Such proposal excludes from consideration such interpetations of strategy as behavior of a company which is not led by any concept, and the concept of unconscious strategy.

Advocates of strategy expressed in a form of plan , used to propose some time scales for strategy. It helps to make strategic plans different from tactical and operational plans. Most experts used to tie strategy to concepts for 5 years,while leaving tactical to periods 2-3 years. Operational use to be tied to concept planned to up to one year.For some authors horizons should be shorter. For R.Best, tactical (marketing) strategies are short one (1 to 3 years) and „strategic market planning is more concerned with long run (3 to 5 years) (Best,1997,p.168). More recently some authors believe that tactical plans have a time scale of one to five years and that „strategic plans with visions generally have timescale of ten years or more (Smith , 2007 p.63) .

More flexible approach to timescales was proposed many years ago by P.Drucker. P.Drucker answered the question of for how long timecompany's targets should be set .He indicated factors influencial upon the time scale. As a main factor he indicated the nature of business. In textiles, sales scheduled to two week horizon are long range forecasting. In energy sector building energetical blok in six years could be 'nearest future'. Other factor is the nature of strategic tools.Some organizational ventures require long time. For Drucker, it could be even building marketing organization that require at least five years. Implementation of innovation in chemistry or metalurgy requires more than five

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years to be accomplished. As the tool of harmonizing long time (5 year long) and nearest future (2-3 years) ,Drucker proposed the so called „managed-expenditure budget"-centrally controlled main expenditures (Drucker 1966,p.140). So the stress here is on the nature of business and its technological requirements, and nature of strategic tools as well .Today we can see more factors contributing to the choice of time scales.

First factor is the structure of strategic goals and the level of measurability of goals.

The second factor is concerned with nature of time as of an asset. Simply time as compared with other assets, like capital, has unique attributes. It is individual and not transferable asset.So any company can judge over time individually .As a result a company may have individual approach to time scales.

The third factor is subjective choice made by managers. It can be resultant from managers' attitudes, including eagerness to take the risk.

4.THE STRUCTURE OF STRATEGIC GOALS

As long as strategic goals were regarded as simple and qualitative effects (i.e. sales volume or market share) , it was possible to fix simple strategic " deadlines" . So it was possible to justify what can be called monochronic strategies.

Today only part of companies continue to fix one general date for their strategies. The structure of strategies have become more complex. It is true especially of structure of company's goals.Instead of one or group of interrelated quantitative goal they, formulate:

-strategic priorities,

-visions,

-missions,

-values,

-quantitative goals

-social responsibility programs,

-sustainability programs,

-business models,

In addition to the above, they use more general strategic frameworks like strategic forecasts.The above elements need not necessarily to be regarded as parts of strategy. For instance, it is frequently proposed that mission or vision were stated before formulation of strategy. However, as far as these elements contain important choices and are obligatory for a company, there is a reason to consider them as a part of strategic targets .When Sony declares in its vision to be leading global supplier of electronics and entertainment , it means concrete choice -to continue electronics as a business. Similarly,when mission by BMW provides for beeing the leading supplier of upper class products and services for transportation of individuals,it is a choice to remain in the business of personal cars. It is responsible strategic choice.

There are, of course, also some visions and mission formulated in very general way and they play a role of propaganda slogans. In such situations no need to link them directly to strategies.

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In the context of strategy formulation process, all the above categories can be regarded as strategic targets and goals.Some of them more general and more detailed. It it is not justifiable to consider only simple quantitative gains as strategic goals

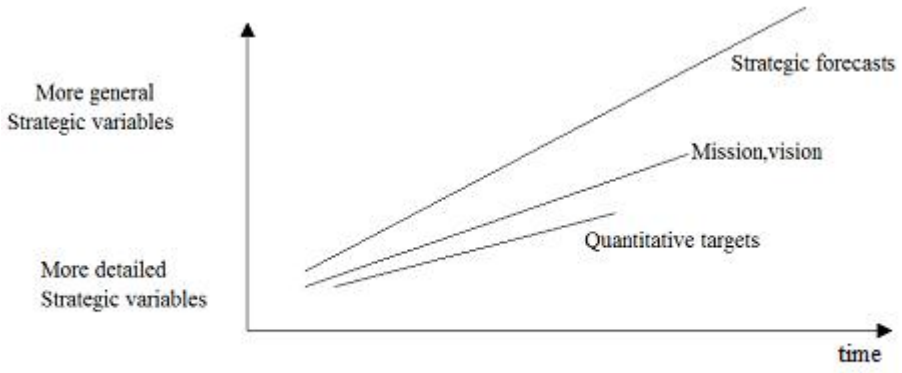
As can be seen ,those forms of goals or plans either cannot or must not be subordinated to the same , one time framework.There is a reason for using different time schedules for different forms of goals. Beginning from business forecasts that have general nature and are far reaching, ending with detailed financial targets to be accomplished in short run.

Also some of those forms can be timeless. For instance corporate values can be „timeless" , the same can be said about some visions or missions. Some business models regardless of their specific contents (Zott,Ch.2011) are timeless.

In addition to the observation of mixed structure of goals, we should turn our attention to the role of market and technological forectasts in strategic planning. These forecasts can be considered as factors to be used directly in setting strategic goals. For some companies they can be even considered as „instant" strategies. So any strategy can include as its formal part, forecasts, as a part covering long time period.This is something more than forecasts, this is company's „declared" assumption on

the future.

Taking into account complexity of strategic goals we can introduce the category of „ polychronic strategies". It is strategies of which particular strategic targets cover different time periods. They can be confronted with monochronic strategies that are inclusive of simple targets concerned with concrete deadlines.



Ill.1 Relationships between time horizons of basic strategic categories in polychronic strategies

5.TIME PERIODS IN CORPORATE STRATEGIES

Research over strategies of global companies and , in addition, of some big institutions, show big variety of approaches to time framework of strategies.In general we observe some logic here.

Companies in industries were implementation of strategic goals is especially time consuming, typical are long range strategies. In oil industry time horizon are 10 or 14 years (Gazprom,Shell,Petrobras, Petrochina). Simultaneously , in addition to this, also some prognostic framework is set for 20 years (Petrobras), 40 years or more (Gazprom). For some quantitative goals like cash flow the same

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companies use shorter time frameworks (business plans- in the case of Petrobras). In some companies in the same industry, time horizons may be shorter , only 5 years (MOL,Orlen). Long time horizons are also typical of some companies in chemistry. BASF in 2010,set strategic goals (structure of sales,capital investments) for 2020, the same time horizon was adopted by Air Products and Chemicals or by 3M Company. Long term horizons- 10 -years are used in pharmaceutical corporations like Abbot Laboratories.

When technical nature of business may necessitate far reaching plans , also long, ten- year long horizons were adopted in other businesses. For instance, this time horizon is used in such industries like media (ABC ,Inc.,), forest products (Weyerhauser), operation of airports (Dubai Airport, Heathrow Airport), Transportation (ATC in Australia). What is interesting is that many banks and financial institutions have approached 2020 as a deadline for their strategies (Asian Development Bank, Goldman Sachs,Canadian Payments Association).Similar far reaching strategies were adopted by consulting firms (Accenture Ltd.- once consulting firm, today diversified organization) or by retailing chains (ASDA).

In many other companies time horizons are „classical", 4-5 years long .In Fiat 5 year plan is called Business Plan .This time framework is used by Novartis (for sales targets) , Johnson & Johnson (for sales value,new products), Philips or General Motors, France-Telcom-Orange ,British Telcom. Deutsche Post launched a strategy for 6 years (2009-2015). In a group of companies basic strategy covers short term- 3 years. Isuzu has introduced 3-year business plan. What is remarkable is that even in the case of quantitative financial goals for which shorter time scales are appropriate , some companies use timeless form- for instance ,yearly growth of financial target (without fixing the deadline).

After years, as it shows there is a kind of differentiation of time horizons for various components of strategies. No evidence for general substitution of long time horizons by short time horizons.

CONCLUSSIONS

Company's strategies require far reaching perspectives and companies really use long time strategies. Author's observations were focused on strategies by market giants .It is believed that big companies are more influencial upon the market trends than smaller ones .Big companies can be more confindent on their far reaching concepts. The very lenght of strategic horizons is and shoud be resultant of individual factors both external and internal . External factors are the nature of business and market ,or nature of strategic tools available. Internal factors are like nature of goals attempted, the level of precision with which goals are expresses,company's resources and company's attitudes..

If long time perspectives, in general , are important , complex structure of strategic targets may require different time horizons within the same strategy. Development of both theory and practice of strategic planning and also observation of reality of contemporary markets, advocate accepting of polychronic approach to time scales.

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THE FINANCIAL DEPTH AND ECONOMIC DEVELOPMENT: THE CASE OF BALTIC COUNTRIES

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Abstract

This article tests the impact of the financial intermediation development on the economic growth in the Baltic States: Estonia, Latvia and Lithuania. These countries experienced real GDP growth rates from 3.8% to 12% in the period between 2000 and 2007 and therefore provide a good example for this research. Aggregate annual data from EBRD, The World bank database and Eurostat for the period 1993-2009 are used. To support the hypothesis that financial development leads economic growth, panel data techniques are used in this study. Contrary to the expectations, this study did not find a significant positive effect on economic growth in the Baltic countries.

Key words: *economic growth, financial development, panel data, the Baltic countries*

1. INTRODUCTION

The relationship between financial development and economic growth has become a major topic in the empirical research in the last two decades. With progress in econometric research, Goldsmith (1969), Demetriades, et al. (1996), Levine (2005), Fink, et al., (2005), Rousseau, et al. (2008) and other papers concerning links between financial intermediation and economic growth have been published. The conclusions on how the financial systems development and economic growth are related vary in different papers.

Well operating financial systems provide important services to the economy. By providing capital to the most promising firms, analyzing its use, doing risk management and facilitating transactions they sustain and promote economic growth. Levine (2005) suggested that if these services are provided well then it has a positive influence on the growth of GDP. By creating new securities, institutions and capital markets the financial innovation accelerates economic growth even further.

Many cross-country studies (King and Levine (1993), Levine and Zervos (1996), Rousseau and Wachtel (2001), Fink, et al., (2005)) show that there is a direct positive influence between the financial systems development and economic growth. It is also known that the differences between countries, their economic structures and institutions impact how the financial systems development influences economic growth.

The banking and financial markets of the Central and Eastern Europe (CEE) countries have developed rapidly in recent years. Together with the regulatory and legal development this has led to credit growth for the private sector. This growth has been particularly fast in the Baltic countries. The ratio of private sector credit to GDP increased 12% annually between 2000 and 2007. This high credit growth rate was in the background of moderate inflation. The real GDP growth rate in the Baltic countries was positive and fast between 2000 and 2007. The growth rate slowed significantly in 2008

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and afterwards the region has experienced the effects of the global financial crisis. The growth prior to the financial crisis in the Baltic countries was unbalanced and was mainly driven by fast expansion of non-tradable and non-exporting sectors of real estate and private home construction. The growth was mostly financed by loans from foreign commercial banks and has led to high private debt.

It is difficult to measure how the financial systems are performing. Therefore researchers are using proxies in evaluating that. The most used indicators of financial systems development are the ratio of broad money to GDP, the ratio of private credit given by commercial banks to GDP and the ratio of larger securities markets to GDP. These and other indicators have been analyzed by Beck et al. (2000, 2008). In this paper we used the common variables that explore the finance-growth nexus.

This article takes a country-specific approach in analysing the relationship between financial systems development and GDP growth. The Baltic countries provide a good base for analysis as they have many things in common: their historic background, location and similar size. In addition, the Nordic banks reorganized the Baltic banks very quickly and improved the efficiency of this sector. The hypothesis of the paper is that well-functioning financial sector accelerates economic growth in the Baltic countries, as some recent literature has found. For analysing the reliability of the hypothesis panel data techniques and annual data for the period of 1993-2009 are used. Financial development is measured by five indicators. This paper contributes more evidence to the debate on the role of financial development in the transition countries.

This paper is organized as follows. Section 2 gives an overview of theoretical and empirical research in the literature. In section 3 the overview of the development and the current state of the financial sector are presented. The following section 4 contains the econometric analysis including data, model and results. The final section includes the concluding remarks and discussion.

2. LITERATURE REVIEW

There are different opinions on how much the growth of financial systems influences the economic growth. Schumpeter (1934) argues that the banking sector is a very important engine of economic growth by funding productive investment. This view is supported by other authors like Goldsmith (1969), McKinnon (1973), Shaw (1973), King and Levine (1993). However there are many authors who have a different view. For example Lucas (1988) and Robinson (1952) argue that the role of finance as a growth engine has been overstated.

The neo-classical view, for example Solow (1959), claims that economic growth is entirely driven by innovation and the accumulation of human and physical capital. The endogenous growth theory states that only technological progress and population growth matter. The accumulation of capital is insignificant as it is just one component of the output function. The neo-classical theories give little attention to the financial sector.

Modern growth theories identify two specific methods on how the financial sector might affect long-term growth. The financial sector impacts the accumulation of both human and physical capital and the rate of technological progress. For example, Thiel (2001) found that the role of entrepreneurship and innovation is stressed in the endogenous growth theories and this allows the finance sector to direct capital to research and innovation. This discovery gives the analytical basis for describing the influence that the financial intermediation has on the economic growth. This phenomenon is similar in the older exogenous growth models.

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Therefore, according to the econometric method used, we can divide the empirical studies into two categories (Beck (2008)): cross-country analysis using equations like Barro (1991) and time-series analysis focusing on the vector auto-regression framework (VAR) or the single error-correction (VEC) models.

The first cross-country study on financial development and economic growth to introduce the size of financial intermediaries as an indicator was Goldsmith's (1969). It was the first paper that showed empirically the positive relationship between financial sector development and GDP per capita.

The research on economic growth can be divided between before and after Barro (1991). His study did not include any financial intermediation variables, but brought forward some empirical regularity about growth and investment for 98 countries between 1960 and 1985.

An important milestone in the analysis of the influence of financial development on economic growth was the work of King and Levine (1993). Since then the important role of the financial systems has become widely accepted. King and Levine expanded Barro's model with four financial variables with higher indicative power of the economic growth. They proved with cross-country analysis and data on 80 countries from 1960-1989 that financial systems can promote economic growth. Their study was in-line with Schumpeter's work. Besides showing the important link between financial services and economic development they also proved that the level of financial development can predict the future economic and productivity growth of a country. Their results have been widely used in many recent studies.

Some studies have investigated the role of stock markets in influencing economic growth. The research of Levine and Zervos (1996) and Demirguc-Kunt and Maksimovic (1998) show that stock market liquidity together with the development of the banking sector correlates with the economic growth.

There are also many critics who express scepticism and claim that cross-country regressions do not necessarily show the direction of causality. Rousseau and Wachtel (2000) argue that often even pre-determined components measuring financial sector development remain correlated with the contemporaneous measures. For example banks tend to give more credit when they forecast higher economic growth. Additionally, GDP growth rates are serially correlated. Because of the prior, Rousseau and Wachtel claim that cross-country analyses do not unambiguously show the direction of causality.

Therefore the recent studies have used time-series framework. For example Thiel (2001) shows the importance of having a long time series to analyse the relation between financial systems and GDP growth. Demetriades and Hussein (1996) analyzed sixteen developing economies in 1960-1990 and found little evidence of financial sector development causing economic growth. They found that the causality between financial systems and economic growth varies between countries. On the other hand, Rousseau and Wachtel (1995) used Granger causality tests and showed that the financial sector development causes economic growth. They suggested that the relationship is influenced by the level of economic development. In their second study, Rousseau and Wachtel (2001) find proof of the impact of financial development on economic activity that, however, disappears when inflation is high. In their third study they conclude that the correlation between finance systems and economic growth found in cross-country data may be caused by differences in country characteristics and not by any relationship between the financial systems and economic growth itself. (Rousseau and Wachtel (2005))

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Levine and Zervos (1998) studied the relation between six financial variables, three real growth variables and the savings ratio. The real growth variables used were real per capita GDP growth, real per capita capital stock growth and productivity growth. They made a cross-country study covering the period between 1976 and 1993. The results showed no relation between the private savings rate and the financial indicators. Similar conclusions were reached by studies with the World Bank data set (Levine, Loayza, Beck (2000)). These studies found a significant impact of financial intermediation indicators on real GDP growth and productivity, but an ambiguous influence on physical capital growth and savings.

There have been only few studies focusing on the transition economies in CEE countries: Koivu (2002), Haas (2001), Gillmann (2004), Fink (2005), Ferreira (2008), Caporale, et al. (2009).

Koivu's (2002) research was based on data from 1993-2000 for 25 transition economies. She used a fixed-effects panel model (Barro's model) and two variables to measure the level of financial sector development. The interest rate margin was used as a measure of banking efficiency as this is closely linked to the theoretical models. The research proved that the margin between deposit and lending interest rates has a negative and significant influence on the economic growth. This was true for both CEE and Commonwealth of Independent States (CIS) economies. This outcome has important policy implications because the interest rate margin tends to shrink as the financial sector and regulation grow in stability.

Another methodology was used by Fink et al. (2005, 2006) who investigated the relationship between financial system development and economic growth in 9 EU accession and new EU member states during their transition period. They used a production function approach. This was the first time when bond markets of transition economies were taken into account in detail. They discovered that the overall financial sector development stimulates economic growth and that domestic credit and bond markets have a direct influence. On the other hand, private credit and stock market capitalization, showed to have no influence on growth.

Another important analysis on EU member countries was made by Ferreira (2008). He used panel fixed and dynamic Arellano-Bond estimates for two groups of countries. The first group contained 11 "old" EU members and the period 1980-1998 was analyzed. The second group contained 24 EU countries and the period between 1999 and 2002 was analyzed. The study showed clear evidence that the following indicators influence GDP growth positively: the log of the real domestic credit, the log of the foreign liabilities, the log of the bonds and money market instruments, the domestic credit/bank deposits ratio. The bank assets/bank liabilities ratio has negative influence on the GDP growth. Besides proving the influence that these variables have on the GDP growth the study also enables to draw conclusions on differences in the two groups of EU countries.

One of the latest empirical researches about transition economies was by Caporale et al. (2009). The work focused on many variables and their influence on the economic growth. Ten transition economies from CEE and the period 1994-2007 was analyzed. The results show that the stock credit markets are underdeveloped in these economies and therefore they do not contribute to the economic growth significantly. On the other hand the banking sector is efficient and has accelerated growth in these countries. The Ganger Causality test that was made during the research indicates that financial development influences economic growth, but not the other way round.

We can conclude from the empirical studies that countries with better developed financial systems are more probable to have faster growth (Levine and Zervos (1996), Demirguc-Kunt and Maksimovic (1998), Rousseau and Wachtel (2001)). We can also say that the level of development of banking and

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stock market liquidity both have a positive influence on economic growth (Levine, Loayza, Beck (2000), Fink et al. (2005, 2006), Caporale et al. (2009)). However, these effects are different in different countries and time periods.

3. THE STRUCTURAL CHARACTERISTICS OF THE FINANCIAL SECTOR IN THE BALTIC COUNTRIES

The financial and banking sectors occupy a pivotal position in the global economy. These sectors have been subject to many external and internal forces in many countries, particularly in the Estonia (EST), Latvia (LVA) and Lithuania (LTI) since the 1991s. Of the external forces, the independence and technological change are likely to have the most far-reaching impact on the sectors. Internal change has been greatly amplified by increased customer influence. The synergies of these forces have brought about a major transformation of the financial (and especially banking system) sector.

However, financial sectors in most of the CEC are still relatively small in comparison to the economic activity, size and depth of financial sectors in developed countries (Polouček, 2004). The Baltic States are not exception. At present, there are already financial sectors in these countries, but they are relatively young and small. The overview of the development and the current state is presented in this chapter.

Financial sectors and banking systems in the Baltic States have undergone fundamental changes since the beginning of the transition process about twenty years ago. All three countries belong to the group of transition economies which evolved from centrally planned to market economies. There were no financial markets, and banking sectors were formed almost entirely by so-called “monobanks”. Upon transition, the following key reforms were implemented:

- monobanks were abolished and two-tier banking systems with the central bank and commercial banks were introduced;
- sectoral restrictions on specialized banks were relaxed;
- the licensing policy for most kinds of banking business was liberalized;
- privately owned banks were admitted and the privatization of the state-owned banks was initiated;
- foreign banks and joint ventures were granted access; and
- the legal framework and supervisory system were introduced and adjusted (Kulhanek, et al., 2004)

Initially Estonia, Latvia and Lithuania have selected and introduced in life a model of a universal banking that allows banks to participate in other financial activities including operating leasing, insurance, and brokerage firms. The liberalization and decentralization of the economy accompanied by lax monetary and fiscal policies contributed to overly fast growth in both the volume of credit and the number of banks. Given extremely low barriers to entry the number of banks increased dramatically in the beginning of 1990’s. New banks appeared one by one (in 1993 there were 21 banks in Estonia, 62 banks in Latvia and 28 banks in Lithuania), who’s careless activity led to the events that shocked all banking system (the moratoriums were declared to many banks). The development of banks is shown in figure 1 above.

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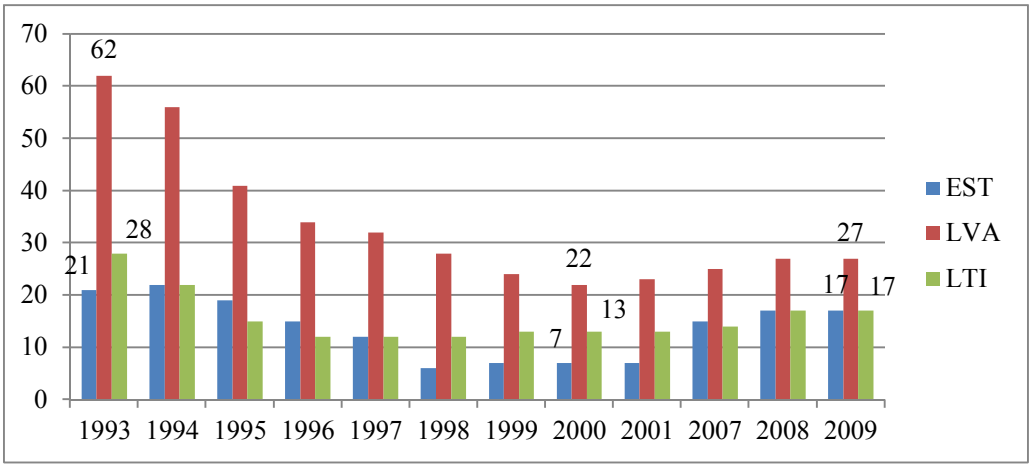
Figure 1. The number of banks in the Baltic States, 1993-2009

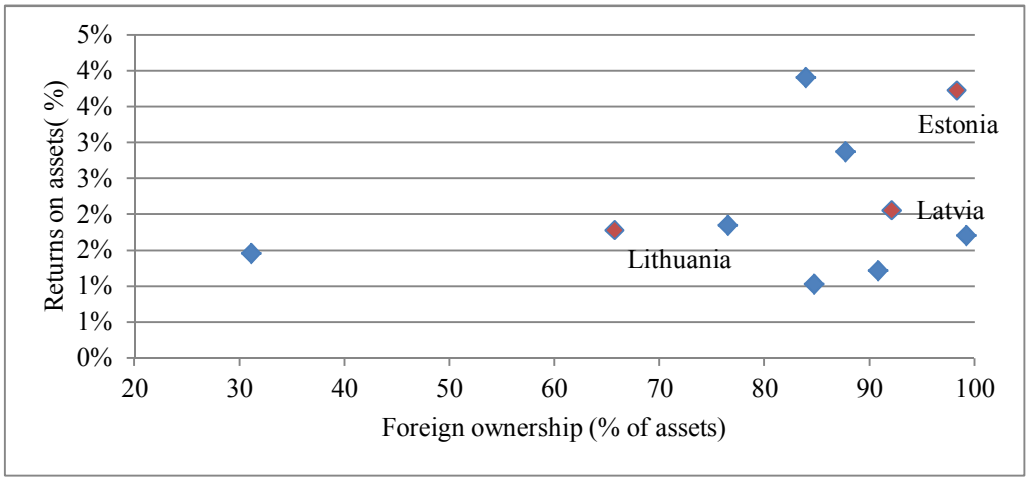


Source: EBRD

The Baltic States have experienced three serious banking crises during the about 20-year period of its banking sector development and restructuring, the first crisis in 1992-1994, the second in 1998-1999 and the third in 2007-2008. Countries that have undergone financial crises are often looking to stabilize their banks with the help of international investors, often by allowing multinational banks operations to quickly expand their operations. Foreign investment came primarily from Finland and Sweden.

The foreign presence is very large in most New Member States (NMS) of the European Union. On average, more than 72 per cent of bank assets are foreign-owned (ECB 2005). Foreign presence is notably high also in Estonia and Latvia. Correlation between foreign ownership and ROA in NMSs was 0.78 (ECB 2005).

Figure 2. Foreign ownership and banking sector performance in NMSs (2008)



Source: EBRD

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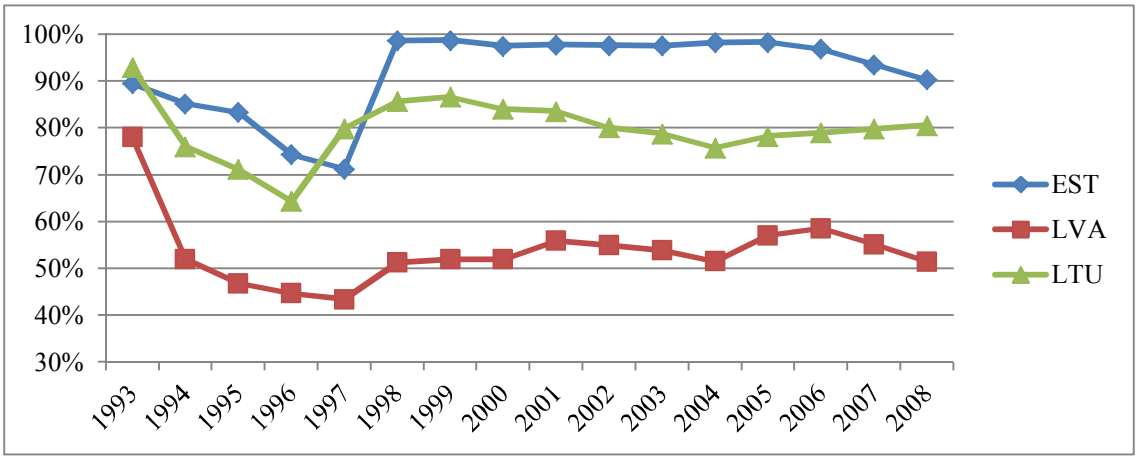
However, most empirical evidence seems to point toward a positive association between foreign ownership and banking sector performance in transition countries (Naaborg et al. 2004). This is also borne out by the evidence in Figure 2 for the banking sectors of the NMSs. The chart suggests a positive relation between foreign ownership and ROA for the year 2008. It should be acknowledged, however, that bank's performance may vary substantially within the different NMSs, depending not only on ownership, but also on the specialisation and strategy of the individual banks. Foreign presence is very large in most NMSs, mainly in the form of subsidiaries of foreign banks.

Figure 3. Bank concentration of three largest banks in the Baltic countries, 1993-2008



Source: the World Bank database

The market structure of NMS banking sectors is generally characterised by relatively high concentration (Figure 3). On average, in 2008 the largest three banks hold 90% of total banking sector assets in Estonia, 81% in Latvia and 51% in Lithuania. Given the high concentration in most of the NMSs, potential concerns may arise as regards the degree of competition (Naaborg et al. 2004).

Foreign ownership is beneficial for the banking systems of (former) transition countries since it involves a transfer of technology and human capital, which increases the operational capacity of local banks. In particular, foreign ownership is widely believed to have contributed to an improvement of the risk profile, reputation and risk management of local banks and hence to financial stability in NMSs and a convergence with Western standards.

To assess the level of development of the financial sector in the Baltic countries we applied the ratio of broad money (M2) to GDP, domestic credit to private sector to GDP and stock market capitalisation to GDP.

The indicator broad money to GDP is as a common indicator of banking development. In all three countries the level of financial intermediation, measured by this indicator, is almost similar (Figure 4).

Even after more than a decade of transition and bank restructuring, this ratio in Latvia and Lithuania is still under 50 per cent. In Estonia, the ratio of M2 to GDP had distinctively increased from 21 per cent in 1998 and in the year 2009 has achieved around 60 per cent. However, Czechoslovakia entered transition with a very high ratio of M2 to GDP, and this was reflected in high ratios when it split into

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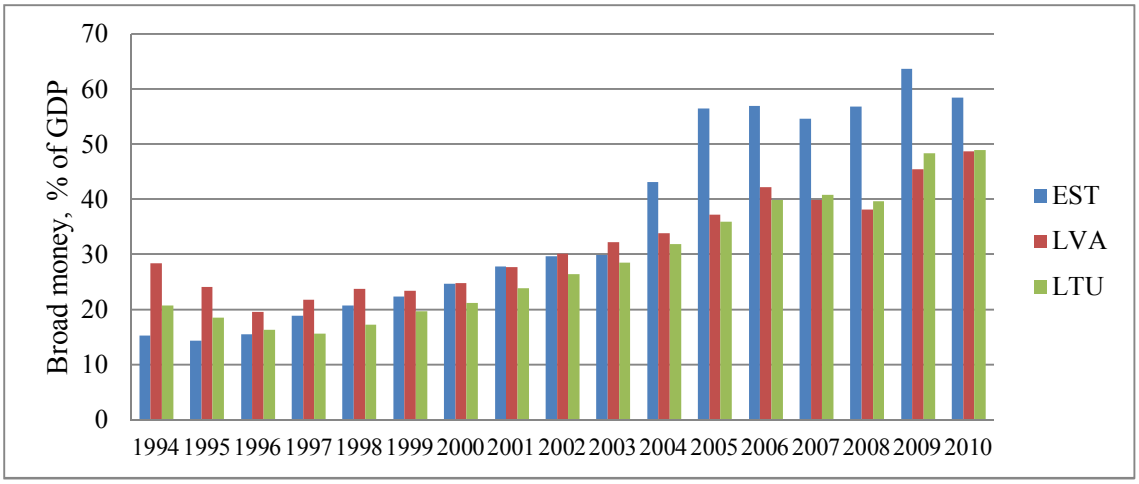
the Czech Republic and the Slovak Republic (74.4 per cent and 70.5 per cent in 2001, respectively) (Polouček, 2004).

Figure 4. Banking depth in the Baltic States in 1994-2010



Source: World Bank database

As is evident from chart 4 the higher ratio of broad money to GDP in the Estonia. The low ratio of broad money to GDP indicates a low monetary depth of the economy. It stems not only from the low initial level of this indicator at the beginning of the transformation but also from many other factors. Inflation played a crucial role.

The second indicator is the share of domestic credit to private sector to GDP. The low share of domestic credit in GDP or relatively low loans to the GDP ratio could also illustrate the limited level of banking intermediation (Polouček, 2004). The development of this ratio is illustrated in Figure 5.

This ratio was substantially lower in all three countries at the beginning of the transition process. Then it was rising in Estonia from 22 per cent in 1996 and reached 107 per cent by the end of 2009. The level of this indicator is still lower in Lithuania, but it was increasing last years. In 2010 the respective ratios of domestic credit to the private sector, as a percentage of GDP, stood at 103% in Latvia, 66% in Lithuania and 97% in Estonia. Rapid growth of lending activities was facilitated by the substantial increase in deposits after 2008, which demonstrated reinforcement of public confidence in the banking sector in Estonia and Latvia. Empirical evidence suggests that high foreign ownership in the NMSs may have a stabilising effect on credit supply (Naaborg et al. 2004). In the Baltic countries the growth was mostly financed by loans from foreign commercial banks and has led to high private debt.

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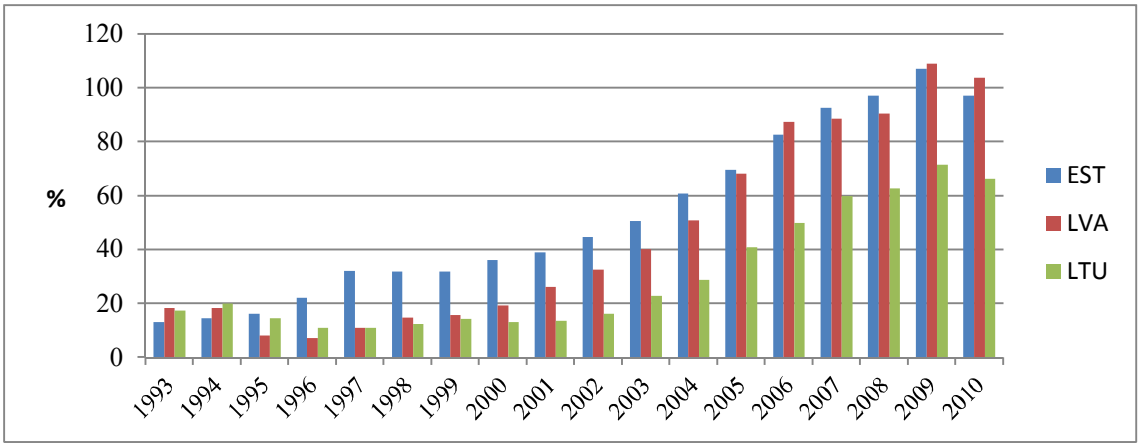
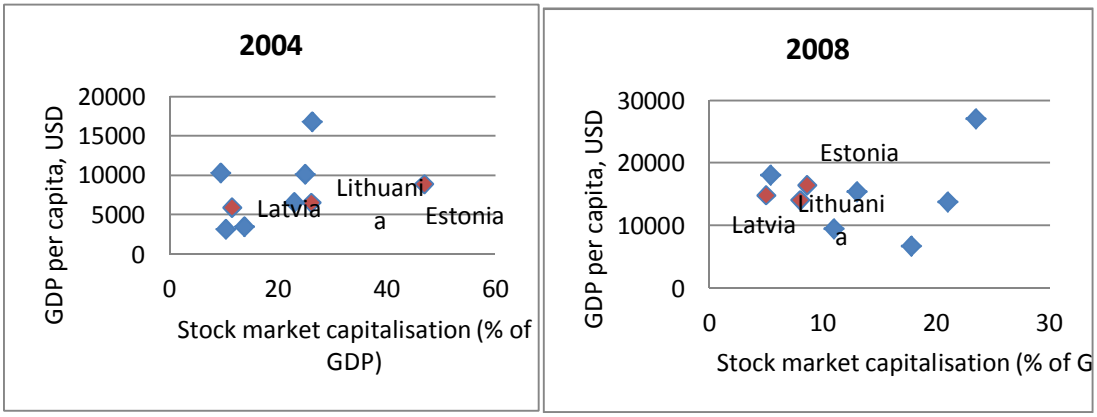
Figure 5. The development of domestic credit to private sector in the Baltic States (% of GDP)



Source: the World Bank database

Figure 6. Stock market capitalisation and economic development in NMSs



Source: World Bank

The last indicator is the ratio of stock market capitalisation to GDP. Companies in countries with developed equity markets are less dependent on bank financing, which can reduce the risk of a credit crunch. There is a little trading activity in the Baltic stock markets. Stock market capitalisation to GDP had reached to 8.6% in Estonia, 5% in Latvia and 8% in Lithuania by the end of 2008. At the period between 2000 and 2007 when the real GDP growth rate in the Baltic countries was positive and fast, stock market capitalisation had reached to 46.9% in Estonia, 11.5% in Latvia and 26.1% in Lithuania by the end of 2004.

The chart 6 suggests that NMS countries have more developed securities markets than in the Baltic countries. The Baltic countries' financial intermediation is based on a universal banking model, in which the banking sector plays the dominant role and the share of the securities market is relatively modest.

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In conclusion, the financial sector of the Baltic States has undergone considerable transformation over the last decade. These countries have made a considerable progress and have created an institutional structure and legislative framework to support a market-oriented financial system. The Baltic financial market is consolidating and attracting considerable foreign investment. The entry of strategically important foreign investors into the major Baltic banks has made the sector more resilient to general external shocks and increased banks' dependence on the developments in the global financial market.

3. ECONOMETRIC ANALYSIS

3.1 Data

Due to the restricted number of observations caused by the rather small sample size (three countries) and the short period of investigation (annual data for 17 years), we rely on a panel data approach. The researches show an increasing interest for using of panel data, especially with the significant growth of the data bases and development of models and diagnostic tests. Panel models allow the identification of effects that cannot be detected in simple time series (in our case it would be only 17 observations). The panel consists of data for three Baltic countries over the period 1993-2009. The data are annual and the countries included in the sample are: Estonia, Latvia and Lithuania. The data were obtained from the European Bank for Reconstruction and Development (EBRD) database, The World Bank and the Eurostat database. For more details on data sources and definitions, see Appendix 1.

The dependent variable is real GDP per capita growth rates as a proxy for economic growth (GDPC). In the estimation a lagged dependent variable (GDP per capita) is also used as control variables to control for convergence predicted by the neoclassical Solow-Swan growth models.

The most important problem in the literature is what proxies should be used for research. Financial development is measured by different indicators. We look at both qualitative and quantitative development of the financial sector. The measures chosen as quantitative indicators for financial structure and development assessment will include basic indicators of financial depth expressed as a ratio divided by gross domestic product (GDP).

First, the measure of financial depth, as an indicator of the saving mobilisation role of the whole financial system, is liquid liabilities to GDP (LLGDP) (currency plus demand and interest-bearing liabilities of the banks and non-banks financial intermediaries divided by GDP), which improved notably during the reform period. The variable is constructed following the methodology of Beck, Levine and Demirgüç-Kunt (2000) based on data from the International Financial Statistics. Ratio of liquid liabilities to GDP, calculated using the following deflation method:

$$\left\{(0.5)\cdot\left[F_t / P_{e,t} + F_{t-1} / P_{e,t-1}\right]\right\} / \left[GDP_t / P_{a,t}\right]$$

where F is liquid liabilities, P_e is end-of period CPI, and P_a is average annual CPI (Beck et al. 2009).

Second, the stock market capitalisation to GDP ratio (STMC) (also known as market value) is a measure of both the stock market's ability to allocate capital to investment projects and its ability to provide significant opportunities for risk diversification for investors. Well-developed stock markets enhance economic performance by providing a way for growing companies to raise capital at lower costs. This variable is calculated using the same deflation method as liquid liabilities to GDP

Third, the ratio of domestic credit to private sector to GDP (DCP) is a common measure of the provision of credit to the economy, as well as of banking depth. It indicates a higher level of domestic

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investment, indicating higher output. It is assumed that banks are not subject to mandated loans to priority sectors, or obligated to hold government securities. Therefore a higher ratio indicates a higher degree of dependence upon the banking sector for financing. This variable is also calculated using the same deflation method as liquid liabilities to GDP.

To measure the efficiency of the sector, we use the interest rate spread (INT). It measures the difference between deposit and lending rates in the banking market. The margin is likely a good estimator for efficiency in the banking sector as it describes transaction costs within the sector. If the margin declines due to a decrease in transaction costs, the share of savings going to investments increases. According to Koivu (2002), as growth is positively linked to investment, a decrease in transaction costs should accelerate economic growth.

In order to control other factors affecting the economic growth, a certain number of control variables were used. Macroeconomic stability, as the first control variable, was approximated as inflation rate (INFL) – average consumer prices. One way inflation might affect economic growth through the banking sector is by reducing the overall amount of credit that is available to businesses. Higher inflation can decrease the real rate of return on assets. Lower real rates of return discourage saving but encourage borrowing. But in 1995, Robert J. Barro published findings that suggested otherwise. He studied many economies and found that, across countries, inflation and economic growth were negatively related - higher inflation was associated with lower economic growth (Boyd and Champ, 2006). In this paper we expect the same, higher inflation to have a negative influence on economic growth.

The second control variable is the Banking Reform Index (RI), which consist of two indices published by EBRD. These indices measure banking reform and non-bank financial institutions. For each country, we have taken a simple average of these indices for each year. The expected sign for this variable is positive. Due to the nature of the reforms, their effects on the economy can be seen with a lag of one or two years. We use a one year-lagged reform index in this study. A number of studies have found significant effects of inflation and reforms on economic growth in transition countries (Koivu, 2002).

The third control variable is constructed index of using reported education levels of employees as the proxy of human capital (HC). Over the past decade a more useful measure of human capital has gained an increasing following: the average years of education of the working age population as a proxy for the average educational attainment level. This data is often referred to as "average years of schooling". Unfortunately, only 5 year periods of data were found for the selected countries from Barro-Lee dataset. Therefore in the current research the proxy for human capital is constructed index using reported education levels of employees 1997–2010 (low educated: ISCED-classification 0-2, weight 1; medium educated: ISCED 3-4, weight 1.4; high educated: ISCED 5-6, weight 2) (labour force surveys by EUROSTAT). Data for 1993–1996 are interpolated using the trend growth rate between 1997 and 2003. Human capital expected influence on growth is positive through its effect on productivity.

Other variables influencing economic growth were introduced in our model, including indicators reflecting political, fiscal and monetary policy. Liberalisation of trade could be closely related to economic growth. The share of exports and imports in the observed countries to GDP (TOP) was used as the degree of openness; it effectively measures the size of the real sector. The expected sign of coefficient with this variable is positive. Besides the described variables, the study controlled the effect of investments on economic growth. For this purpose, we used indicators share of investment to GDP (INV). In addition, government consumption to GDP (GVE) was taken into the study to control the weight of fiscal policy. Some countries use expansionary and contractionary fiscal policies for

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steady economic growth by adjusting government spending. The choice of these variables is common in the literature that explores the finance-growth nexus.

3.2 The Model

Following Beck (2008), econometrics of growth can be summarised in the following simple regression:

$$g_{i,t} = Y_{i,t} - Y_{i,t-1} = \alpha_i + \beta f_{i,t} + \gamma C_{i,t} + \mu_i + \varepsilon_{i,t}, \quad (1)$$

where $Y_{i,t}$ is real GDP per capita in country i and period t, $g_{i,t}$ its growth rate, $f_{i,t}$ an indicator of financial development, $C_{i,t}$ a set of conditioning variables that controls for other factors associated with economic growth , $\mu_{i,t}$ and $\varepsilon_{i,t}$ error terms, i (where i = 1,2…,N) the observational unit (country), and t (where t =1,2,…,T) the time period, while ε is a white noise error with zero mean, and μ a country-specific component of the error term that does not necessarily have a zero mean. The parameter α_i is the country-specific intercept that may vary across countries. The coefficient β is of interest for finance and growth researches, who interpret a positive and significant coefficient as evidence for a positive partial correlation between finance and growth.

3.3 Methodology

For the period 1993 - 2009 we can use 51 observations in total and Levin-Lin-Chu (2002) panel unit root test was applied for aggregate data (Table 1). The most common methods for investigating the finance-growth nexus are panel data techniques. The recent literature exhibits an increasing integration of techniques and ideas from time-series analysis, such as unit roots and cointegration, into the area of panel data modelling. Pooling data from different countries may also help to overcome the problem that sample sizes of time series are fairly small, so that tests regarding long-run properties are not very powerful (Verbeek, 2004). Firstly, it is necessary to determine if the variables used in the study are stationary or not. In the literature it is suggested that panel unit root tests are more powerful than single time series tests this is due to the fact that there are more observations in the tests. (See, Levin at al. (2002)). Test shows that the data for most variables are stationary in levels I(0) and only Domestic credit to private sector to GDP is stationary at the first difference I(1). To find out the relationship between financial development and economic growth in those three countries the Arelano-Bond panel GMM (general method of moments) was implied.

Then, a relevant issue in a multivariate regression analysis is the collinearity of variables with each other. Most of the variables are significantly correlated with each other, even though the correlation coefficients in most cases are small. However, the coefficients across similar measurement variables are large in magnitude, such as the variables for bank profitability and efficiency or macroeconomic variables. In order to eliminate any multicollinearity problem, the paper introduces highly and significantly correlated variables in separate regression equations. In our case, the correlation is strong between liquid liabilities to GDP, domestic credit by the banking sector and domestic credit to the private sector.

For the regressions, we use the following model specifications:

$$GDPC_{i,t} = \alpha_i + \beta_1 \cdot GDPC_{i,t-1} + \beta_2 \cdot HC_{i,t} + \beta_3 \cdot INFL_{i,t} + \beta_4 \cdot INV_{i,t} + \beta_5 \cdot TOP_{i,t} + \beta_6 \cdot GVI + \beta_7 \cdot INT_{i,t} + \beta_8 \cdot STMC_{i,t} + \beta_9 \cdot RI_{i,t-1} + \beta_{10} \cdot FV_{i,t} + \mu_i + \varepsilon_{i,t} \quad (2)$$

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The dependent variable $GDPC_{i,t}$ is the growth rate of real output per capita in per cent. In the estimation lagged dependent variable is also used as control variables to control for convergence predicted by the neoclassical Solow-Swan growth models. In addition we use different measures to test for the impact on economic growth. $HC_{i,t}$ stands for the change in educational attainment, $INFL_{i,t}$ for the inflation rate, $INV_{i,t}$ as share of investment to GDP, $TOP_{i,t}$ for the share of exports and imports to GDP, $GVE_{i,t}$ for government consumption to GDP, $RI_{i,t-1}$ for the lagged Banking Reform Index. The financial variables are $INT_{i,t}$ for the interest rate spread, $STMC_{i,t}$ as the stock market capitalisation to GDP, $FV_{i,t}$ stands for the other financial variables: liquid liabilities (LLGDP) and domestic credit to private sector expressed (DCP) as a percentage of GDP.

3.4. Results and Discussion

The results of the estimation of equation (2), that is the relationship between economic growth and financial development, is presented in Table 2. In the analysis one OLS cross-section fixed-effects (OLS F) panel model, two OLS period random effects (OLS R) panel models and two GMM period random efects panel models are investigated.

The signs of control variables coefficients are in line with expectations. The results show that investments, i.e. capital accumulation, have a positive and significant impact on economic growth in four models with 1% significance. As expected, the significant results for human capital and trade openness have a positive impact on economic growth, the former through improved productivity, and the latter through higher competition and technological progress. The results for the government expenditure are significant and present the negative effects on economic growth, excluding I OLS R model. Due to the nature of the reforms, reform index's effect on the economy can be seen with a lag of one year. The lagged reform index has a statistically significant positive impact for I GMM model. This finding was expected and suggests that reforms in the banking and financial sector such as market regulation and monitoring increased economic growth. The sign for significant results for inflation becomes negative in the models II OLS R and I GMM, as was expected and being in consistent with previous research. Rousseau and Wachtel (2001), bringing together financial development and inflation in explaining growth, find a positive effect of financial development and a negative effect of inflation only for a large data panel set.

The link between financial sector development and economic growth is analysed by different variables as liquid liabilities to GDP, stock market capitalisation, interest rate margin and domestic credit to the private sector.

The measure of financial depth is the ratio of stock market capitalisation to GDP and has a negative and significant effect for I GMM model. The fact that stock markets in the Baltic countries are still low capitalized might explain its negative impact on the real economy. One reason for the small security market is the small size of economies. And it wouldn't be expected that the domestic security market would suddenly grow noticeable.

The present findings seem to be consistent with other research in the finance-growth nexus, which found it is therefore very important to attract foreign investors to the Baltic countries.

The indicators of the size of the financial sector (domestic credit to the private sector and liquid labilities) shows a negative and significant effect on economic growth what is in stark contrast with the studies in CEE countries.

Our results can be explained by different ways. A first explanation is that the size of the financial sector does not present the quality of the sector in the transition countries. Another reason could be the

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banking crises that the Baltic countries experienced in the 1990s. Costs of the banking crises were more severe in the Baltic countries.

Table 1. Levin-Lin-Chu stationarity test

Variable	Level		1st Difference		Process
	t-value	P > t	t-value	P > t	I(=)
Real GDP per capita growth	-1092.50 (-1098.0)	0.0000	-1449.67 (-1456.0)	0.0000	I(0)
General government expenditure to GDP	-1.7449 (-3.235)	0.0405	-6.6049 (-9.181)	0.0000	I(0)
Human capital	-2.1933 (-6.244)	0.0141	-3.6898 (-6.986)	0.0001	I(0)
Inflation	-1.9356 (-3.016)	0.0265	-1.5199 (-3.827)	0.0643	I(0)
Interest rate	-12.4299 (-13.466)	0.0000	-8.0049 (-10.058)	0.0000	I(0)
Investments to GDP	-1.5526 (-1.625)	0.0603	-3.2623 (-3.371)	0.0006	I(0)
Banking Reform Index	-4.5864 (-5.534)	0.0000	-5.2601 (-9.235)	0.0000	I(0)
Stock market capitalisation to GDP	-1.6769 (-5.256)	0.0468	-3.0144 (-5.652)	0.013	I(0)
Domestic credit to private sector to GDP	2.8970 (1.635)	0.9981	-2.5115 (-4.309)	0.0060	I(1)
Trade openness to GDP	-2.0988 (-4.795)	0.0179	-0.8358 (-4.813)	0.2016	I(0)
Liquid Liabilities to GDP	-2.4597 (-5.740)	0.0070	-1.4655 (-3.591)	0.0714	I(0)

Note: In the analysis Akaike criteria's automatic selection of lags was used.

Next possible explanation for the negative relation between the domestic credit to the private sector could be that Baltic countries have a bank-based financial system that is dominated by commercial banks. Most of the banks playing a key role in the allocation of credit are foreign-owned and have

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given out considerably more loans to the private sector than they have received deposits from the private sector. This suggests that the credit expansion has been funded by borrowing from other economies, mostly from depositors from the Scandinavian countries. Foreign banks seem to have a more aggressive lending policy than the local banks that is probably due to easier access to capital through their parent banks.

Lastly, as in developed country samples, once inflation and the investment rate are included, financial depth as measured by "liquid liabilities" does not positively affect growth, as in Gillman and Harris (2004). However an interpretation is provided for the results on financial depth that may nonetheless allow for a positive role of financial development, on the basis that M2/GDP may be indicating the degree of substitution between short and long term investment instruments (Gillman and Harris, 2004).

The margin between lending and deposit interest rates is negatively correlated with economic growth, following along theory. If the margin declines due to a decrease in transaction costs, the share of savings going to investments increases. As growth is positively linked to investment, a decrease in transaction costs should accelerate economic growth (Koivu, 2002). The Baltic countries have seen high interest rate margins during the transition period. Later in all Central and Eastern European countries interest rates have converged rapidly towards the euro area levels as a result of intense competition among banks and expectations of the approaching entry to Euro area or the European Union.

To sum up, the proxies used to evaluate the financial development do not support the existence of a positive and significant relationship between financial development and economic growth in the Baltic countries over the period 1993-2009. However, growth in the Baltic countries was unbalanced and driven by an overexpansion of non-tradable sectors, particularly real estate and construction. It was financed by capital inflows, which led to high private debt. In addition, fiscal policy and wages amplified the cycle. Also household credit can well reduce the growth rate, via reducing saving; whereas the creation of the stock market is more likely to promote growth. This neglects one of the lessons of the theoretical literature that the impact of the financial development on economic growth may vary depending on the specific market where it occurs.

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Table 2. The financial development and economic growth: panel regression.

Variable	**I OLS R**	**II OLS F**	**III OLS R**	**I GMM**	**II GMM**
Intercept	0.673***	1.616***	1.370***	0.870*	1.660***
	(0.124)	(0.313)	(0.268)	(0.443)	(0.383)
GDPC(-1)	-0.001**	-0.049	-0.120	-0.397	-0.019
	(0.000)	(0.168)	(0.151)	(0.306)	(0.338)
Human Capital	0.148***	-0.048	-0.019	0.673**	-0.278
	(0.055)	(0.085)	(0.073)	(0.260)	(0.226)
Inflation	-0.017	-0.289***	0.060	-0.270***	0.226
	(0.042)	(0.063)	(0.069)	(0.069)	(0.187)
Investments	0.452***	0.661***	0.731***	-0.269	0.900***
	(0.104)	(0.154)	(0.128)	(0.201)	(0.297)
Trade Openness	0.016	0.068	0.005	0.111***	0.092
	(0.013)	(0.051)	(0.030)	(0.042)	(0.068)
General government expenditure	0.512*	-1.081**	-0.669*	-0.232	-1.640**
	(0.265)	(0.480)	(0.369)	(0.843)	(0.831)
Interest rate margin		-0.007*	-0.009***	-0.029***	-0.010
		(0.004)	(0.003)	(0.003)	(0.008)
Stock market capitalization		0.013	0.053	-0.876***	-0.149
		(0.117)	(0.094)	(0.200)	(0.154)
Banking reform index (-1)		-0.036	-0.053	0.267**	-0.111
		(0.047)	(0.038)	(0.111)	(0.080)
Domestic credit to private sector to GDP			-0.243***		-0.361***
			(0.047)		(0.135)
Liquid Liabilities to GDP		-0.277		-1.121***	
		(0.187)		(0.270)	
J				0.189	1.447
Jp				0.995	0.836
Observations	48	40	40	38	40

*Note: The expanding GMM instruments are lagged 2-3 years. Standard errors in parentheses. ***, ** and * denote statistical significance at 1, 5 and 10% respectively.*

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5. CONCLUSIONS

The objective of this study was to analyse the link between financial development and economic growth in the Baltic countries. However, the findings of the current study do not support the previous research in transition countries (Caporale et al., 2009, Fink, et al., 2005)). The proxies used to evaluate the financial development do not present a strong positive correlation on growth when the static and dynamic models were used. For proxies as interest rate margin is the same results comparing with previous studies in transition countries were obtained. The margin between lending and deposit interest rates is negatively correlated with economic growth, being consistent with theory. The ratios of liquid liabilities to GDP and domestic credit to the private sector to GDP all have a negative and significant effect on economic growth. As lending in Central and Eastern Europe has been highly profitable for parent institutions from Western Europe, foreign-owned banks have introduced aggressive marketing of consumer and household loans to increase their market share in the region, which have contributed to rising household indebtedness. Therefore, credit expansion has a negative effect on economic growth in the selected countries.

The study has however some limitations. A deeper analysis needs to include other control variables, for instance for human capital the better proxy is industry-level proxy of human capital, based on the skill composition of employment and relative wages by skill level and crisis dummy variable. Moreover it is worthwhile to test the causality between economic growth and financial development.

The financial sectors of the Baltic countries are currently stable. But the contribution of the relatively developed credit and stock markets to growth has been rather limited. This might be a consequence of high inflation, the large stock of non-performing loans and the banking crises experienced by these economies at the beginning of the transition period.

To summarise it can be argued that the combination of inflation, excessive credit growth and the less developed securities market affected negatively the GDP growth in the Baltics. In the future research it will be important to try to capture the impact of financial development on economic growth in the boom and bust periods in the selected countries.

APPENDIX:

Variable		**Source**
Code	Description	
GDPC	GDP per capita in USD	The World bank database
GVE	General government expenditure/GDP	The World bank database
HC	Constructed index using reported education levels of employees	EUROSTAT
INFL	Consumer price index (2005 = 1)	The World bank database
INV	Investment/GDP	EBRD database
TOP	Trade openness - the proportion of the sum of exports and imports of goods and services in GDP	The World bank database

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DCP	Private credit by deposit money banks /GDP	The World bank database
INT	Interest rate margin (%)	The World bank database
STMC	Stock market capitalisation/ GDP	The World bank database
RI	Reform index (average of two transition indicators: banking reform and non-bank financial institutions)	EBRD database
LLGDP	Liquid liabilities /GDP	The World bank database

Table A1. List of Variables

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ECONOMIC EDUCATION AND PRICING BEHAVIOR OF FIRMS

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Abstract

Interdependence of economic education and market behavior of firms is not negligible. Price setting behavior of firms might be significantly affected by presence of economic knowledge, which governs incentives followed by informed decision making. Educational differences in economic field might then lead to different pricing strategy of firms, where it is supposed that more educated individuals are capable of uncovering the veil of nominal values and therefore lower the probability of movement towards suboptimal outcomes.

This study will design an experiment with subjects in the role of firms, varying by economic education achieved. Return of each subject will depend on ability to choose the optimal price, which will be shaded by the veil of nominal values. This research will try to verify if economic education acquired has weakening or even suppressive effects on pricing behavior connected with nominal rigidities. If the above-mentioned hypothesis is proved, it means that qualified economic experts might contribute trough their pricing strategy to reduction of nominal rigidities in the economy. At aggregate level, it implies lower level of nominal rigidities and faster convergence of the economy to a new equilibrium.

Key words: *educational differences, pricing strategy, convergence, nominal rigidities*

1. INTRODUCTION

In recent years, many institutions, among them mostly central banks, try to provide public with vast array of educatory programs with aim to increase public understanding of basic economic principles. This suggests that economic literacy seems to be increasingly important.

In vulnerable and complex environment, it might seem that economic education provides helpful option, how to isolate and use information in the most effective way. However, various considerations emerge, among others Stigler, whether dissemination of economic knowledge to broader public is worth the cost. One may therefore ask, whether decision making of consumers and firms is positively affected trough incentives governed by possession of economic knowledge. This paper will focus on firm's behaviour related to pricing. The point is as follows; if we assume well educated individuals, is there any causal relationship between economic education and achievement of optimum outcomes or at least significant reduction of sub-optimal behaviour? If significant relationship will be confirmed, there might be serious implications for the economy as a whole in terms of ability of central banks to affect behaviour of firms trough economically educated professionals and it should increase support of economic education programs. The effect of economic education on behaviour might be weakened according to opponents by several deficiencies present, where utility from application of economic knowledge is exceeded by costs. Based on above-mentioned comments, this study will try to verify with help of experimental design the impact of economic education on economic outcomes achieved. Subjects will be in the role of firms, where experimental group and control group will be present,

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which differ according to economic education achieved. Return of each individual will depend on his ability to choose the optimal price, expressed in nominal terms, where pricing requires cognitive ability to overcome this barrier. Performance of these groups will be assessed in terms of variability of prices. Also the speed of convergence to economy's equilibrium price will be assessed, which might provide clue, whether nominal rigidities are weaker for subjects endowed by proper economic knowledge.

Results indicate that economic education plays role in terms of variability of outcomes, but only minor role in terms of nominal rigidity. The next section describes basic facts related to conceptualization of economic literacy and its significance together with identification of potential drawbacks contained. This is followed by literature survey regarding the research related to exploration of potential effects of economic literacy. The next part consists of description of basic hypothesis and experimental design, aimed to verify significance of economic education for decision making on markets, followed by arguments supporting the outcomes achieved. In the last part, outcomes are emphasized in light of implications derived from analysis.

2. ECONOMIC LITERACY AND MARKET PERFORMANCE

2.1 Conceptualization of Economic Literacy

Economic literacy is very wide area, which covers variety of views. In a Symposium, organized by the Federal Reserve Bank of Minneapolis on May 13 and 14, 1999, several definitions of economic literacy were provided by cross-sector groups during their academic debate. According to these views, economic literacy means that people have an understanding of economics that informs personal finance and public policy; economic literacy is a process that starts with personal finance and is followed by broader economic issues that all of society faces; economic literacy leads to questions about what matters, i.e. "where the social and ethical rubber hits the road" (Fettig, 1999, p.1); economic literacy also supports better-informed public, which might allow for fewer mistakes in public policy; economic literacy is not about educating people, how to react to policies or ideas, but how to evaluate them or put them into context (Fettig, 1999). Definition of economic literacy depends on a view of respective subject, on position of particular economic thought, which might favour basic economic concepts, or advance some specific topics related to consumer's choice or government programs.

If we adopt more general view on economic literacy, economic literacy might be understood as "the possession of basic understandings and skills needed by all individuals for intelligent management of their own business and financial affairs, and for responsible participation as citizens in the determination of public policy and the maintenance of the general welfare" (Wentworth, 1976, p.4). Alfred Marshall saw economic literacy as "the study of mankind in the ordinary business of life" (Minehan, 2006, p.1), by which it is indirectly stated that individual's success is hidden in his ability to apply basic economic concepts in the ordinary business of life, if proper support is provided. This includes the ability to make wise financial decisions, build wealth, evaluate the policy decisions that face all individuals, etc. Still, the term is rather elusive, since no operational definition exists. In order to distinguish between economically literate and illiterate individual, this definition is rather insufficient, since no evaluative criteria are present. In addition, it is impossible to distinguish strictly between economic literate and illiterate individual, since each person possess different level of analytical and conceptual skill competence. Therefore, economic literacy should be understood as rather degrees of understanding and not as "either-or concept of distinction" (Wentworth, 1976). Still

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for purpose of this study, closer conceptualization of economic literacy is needed. Table 1 (Hansen, 1976, p.31 and Wentworth, 1976, p.6) provides series of examples, which support conceptualization of economic literacy and prove that specification of economic literacy is obtainable goal and is not elusive. It presupposes analytical and computational skills, which contribute to application of basic economic concepts in various situations. Therefore not only ability to use economic terminology correctly is required, but also additional skills such as reading, writing, computing or logical reasoning, are needed. This indicates that economic literacy is not narrow area, but includes wide array of other issues, for instance frequently debated financial literacy requirements.

AN ECONOMICALLY LITERATE PERSON WOULD:	
Use economic terminology correctly Use the concept of opportunity cost as a criteria for economic decision-making Recognize that every action has inherent costs and benefits Draw a conclusion consistent with economists if asked an economic question where consensus existed among economists Differentiate between conclusions reached on the basis of empirical evidence and conclusions reached on the basis of preconceptions Use logical reasoning to develop a conclusion regarding an economic issue Demonstrate general economic skills of reading, writing and calculation	Recognize any judgement made on limited information and realize that the judgement would be subject to qualification given new information Distinguish economic issues from other kinds of issues Indicate various steps in practising and reasoned research Identify broad outlines of the economic system and recognize interdependencies in the system Articulate correctly basic economic concepts Must know the criteria for evaluating economic actions and policies and recognize trade-offs Apply various elements listed above to reach an understanding of issues and make personal judgement of them

Table 1. Conceptualization of economic literacy.

This leads to frequently debated topic, how should be financial literacy specified with respect to economic literacy. Does economic literacy include only personal finance or general economics? This problem was discussed also throughout the Symposium on the Economic Literacy. Major consideration focused on, whether attention should be focused on one at the exclusion of the other. The debate was finally ended by suggestion of Arthur Rolnick, senior vice president and director of Research at the Minneapolis Fed that "personal finance and economics should be considered as part of a continuum" (Fettig, 1999, p.1). Moreover according to him, personal finance should be supportive in a way that it enables individuals to apply basic economic principles. Moreover, criteria mentioned above support this view, since financial examples provide clear application of economic concepts and therefore economic and financial literacy goes hand in hand with each other. Therefore we will comprise in our analysis financial literacy together with the economic literacy.

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2.2 Significance of Economic Literacy

Last few years, there is growing tendency of central banks and other institutions to promote economic literacy by running variety of educational programs. Significant resources are given by Reserve Banks of the FED and other central banks across the rest of the world to promote economic and financial literacy. The question is, what are underlying motives for central banks to promote economic literacy. Technological advances and globalisation of economies transformed the economic environment, which is more vulnerable and fast-changing. In more complex world, this creates demand for sufficient economic literacy, because not only access to information is required, but subjects must be also able to use it in appropriate way. This is becoming more and more difficult and therefore banking institutions consider economic and financial literacy of prime importance in order for individuals to behave efficiently. For instance, Bernanke (2006) points out that not only is economic literacy essential for consumers to make informed financial decisions, but also for business in order to make healthy financial decision making. This statement is supported by Hogarth and Hilgert (2003) who found a significant correlation between the level of financial knowledge and good financial management practices, such as cash-flow management, savings and investing. Therefore economic literacy is beneficial in order to ensure efficient distribution of resources, by improving ability regarding financial decisions. Apart from this, central banks provide economic education also in order to enhance the effectiveness of monetary policy. As pointed by Stark (2006) and many others, direct impact of economic and financial education is present, since it helps to maintain primary goal of price stability. Public will better accept the price stability as ultimate goal, if it will understand complexity of real and nominal effects of monetary policy in a sense that price stability protects the economy and contributes to economic efficiency and welfare. It also helps public to understand the importance of central bank independence, whose goals of price stability are not undermined by government. In addition, communication of central banks is also easier, because educated individuals will understand more quickly information provided by central banks regarding their decisions. This further promotes central bank's transparency. Effectiveness of the conduct of monetary policy, enhanced by economic literacy might then provide better guidance not only for individual consumers, but also for firms, which will make more efficient financial choice. This might foster indirectly economic and financial stability, because uncertainty and volatility might be significantly reduced.

Above mentioned discussion may be summarized, where economic literacy might provide positive effects as follows:

- For individual generally more effective knowledge, analytical skills, better usage of information, which then implies higher probability of achieving optimum outcomes
- Enhance the effectiveness of monetary policy
- Smooth functioning of financial markets
- Built reputation and promote acceptance for CB's actions followed by increased transparency
- Promote economic and financial literacy as a public good.
- Support sustainable economic policies

However, several doubts remain regarding the effectiveness of educational steps. Although the concept of economic literacy has been conceptualized, the problem is how individuals acquire economic knowledge and how effectively they use it. First thing is, according to Stigler (1970), why should be people economically literate. Individual considers potential benefits and costs regarding economic education. Since economics discipline is considered as universal knowledge, used in

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numerous and highly diverse situations, it is definitely worth the cost. However, the condition regarding the cost is not fulfilled in the following sense. It is hard to learn economic logic and apply it in different fields after completing basic one-semester economic course. Participation in basic course has little impact on economic knowledge and understanding according to Salemi (2005) and although individuals recognize basic concepts, they are unable to apply it to real situations. There is danger that economic knowledge is rather formal. This suggests that the effect of education on economic outcomes might not be significant as suggested and therefore education itself not worth it. However, still Walstad and Rebeck (2002) find out in their research that small but significant difference (6-11%) exists between the economic knowledge of the public and those who have taken the first college economics course. Variety of reasons might be responsible for potential weak effect of economic education, for instance how education is provided, since frequently basic courses are subject to artificiality criticism (Salemi, 2005). In this sense it appears that economics might not be universal knowledge.

However, this might not be the main problem. Attention should be also paid to how people gain economic knowledge and how their conceptual image about the economic world is created. This might threaten the point of economic education itself. Economic efficacy enters into the process of how economic knowledge is acquired. This concept is understood as the individual's belief about the level of his power or control in order to influence basic economic processes in the economy. People might have different level of economic efficacy. If people have low level of economic efficacy, this means that they may not be necessarily interested in learning economics, since they consider it not as useful experience, (Walstad, 1976). Costs of learning are at the expense of utility gained from economic knowledge. Thus a low sense of economic efficacy will correlate positively with disinterest in learning economics. This further supports Stigler's argument regarding costs related to economic knowledge, which individual has to consider. In addition, a high degree of economic literacy may not necessarily correlate positively with high sense of economic efficacy. Generally it is assumed that in case of deeper knowledge of economic issues, one is more committed to it. But according to Walstad (1976) this relationship might be the opposite one, where better knowledge of economics leads rather to view that neither individual, nor small group is strong enough to affect economic outcomes, therefore leading to reduction in economic efficacy. The level of economic efficacy and its relationship to economic education might be tested based on instruments used for testing political efficacy; however this is not subject of our analysis, (See Easton, Dennis (1967 for further details).

In addition, economic literacy is not guarantee that individuals will make always decisions based on economic rationality. (Wilson, Zhang, 1997) But although literacy is not a guarantee of optimum economic outcomes, still it might at least reduce somehow possibility of behaviour leading to suboptimal outcomes. Following diagram (Mason, Wilson, 2000, p.33) depicts the importance of economic literacy, where individuals possess resources (books, newspapers, internet), skills (computational, analytical skills, etc.), technologies and contextual knowledge, which means ability to derive knowledge from the context (Figure 2). Trough these elements, economic literacy is formed. Economic literacy enables individuals to make sense of the economic world, in which they operate.

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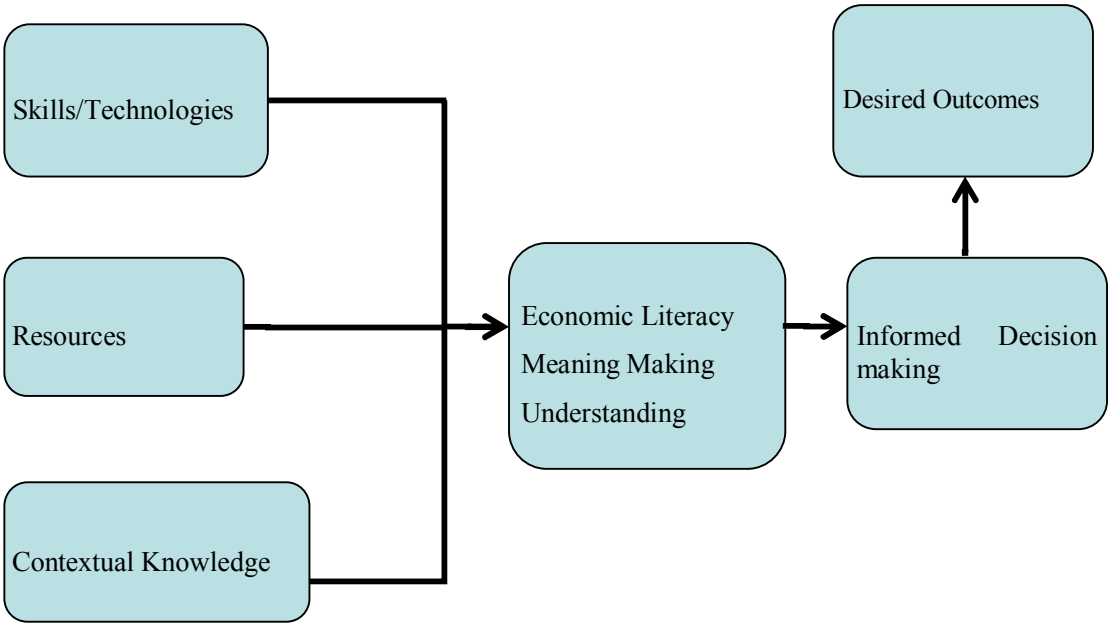

Figure 1: Economic literacy leading to desired outcomes.

In complex economic environment, individual's chances to achieve optimum outcomes are significantly enhanced, if they are able to cope with symbolic representations systems in form of words and numbers. Well educated individuals have better prerequisite to deal with significant amount of information, effectively use it, which further supports also making and communicating meaning and understanding of issues. If decision has to be made, this informational advantage gained on the basis of economic literacy, enables them to achieve their desired outcomes. Thus, regardless of deficiencies mentioned, economic literacy might be supportive in a way that individuals and firms will better understand relevant information, sort it and eliminate redundant one, which might contribute to better decision making and also reduction of suboptimal outcomes. This is also supported by Mishkin, (2008), who points out that call for economic education is based on the idea of better informed individuals, which might lead to better answer and therefore higher probability of attainment of optimum outcomes.

Therefore measuring the effects of economic literacy is critical for understanding the potential impacts of educatory programs. Besides research related to economic efficacy, the most important is to determine potential effect of economic education on final outcomes.

2.3. Literature Review

Several studies tried to verify the impact of education on individual and household behaviour. Bernheim and Kotlikoff (2001) find that participation in economic courses significantly affects saving behaviour of students in their adult lives. Carpena et al. (2011) study the experimental impact of financial literacy on individual's decision making and conclude that literacy does not enable individuals to collect rewards that require high numeracy skills immediately, but it improves basic financial choices. They also find that cognitive constraints might be a key barrier for literacy not

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having such significant effect, which indicates limitations of literacy training. Apart from this research, various surveys are conducted aimed at detecting the level of economic literacy among wide population and specific groups. In 1992 Gallup survey of economic literacy in the USA, Walstad and Larsen (1992) report that 64% of public and 79% of college seniors chose "supply and demand" when asked whether "the prices of most products in a competitive market are determined by government, business monopolies, supply and demand, or the consumer price index." Harris (1999) in his poll indicates that only one in three individuals knew that those who borrow money at a fixed interest rate are most likely to benefit from inflation. According to Minneapolis Federal Reserve survey (Fettig, 1998), only 30% knew that government can reduce inflation by lowering its expenditures and money growth.

Only few studies were conducted with respect to the effect of economic education on firm's decision-making and outcomes. Karlan and Valdivia (2010) study the impact of teaching basic economic knowledge on micro-entrepreneurs in Peru and find that education program improves record-keeping, but not profits. Bruhn and Zia (2011) find significant effect of business training program on business investment and production processes among young entrepreneurs in Bosnia and Herzegovina. Drexler, Fischer, Schoar (2011) study impact of economic/financial training on firm-level and individual outcomes for entrepreneurs in the Dominican Republic. They find that rather simplified rule-of-thumb training produced significant improvement in pricing and consequent economic outcomes, than standard fundamentals-based training.

We contribute to this literature by conducting a laboratory controlled experiment, which should enlighten potential effects of economic education on pricing behaviour of subjects in the role of firms and on achievement of optimum economic outcomes. It is assumed that economic literacy, which contributes to more effective informational decision making might weaken the rigidities in the economy.

3. HYPOTHESIS AND EXPERIMENTAL DESIGN

3.1 Hypothesis

We assume that acquired economic education might reduce behaviour leading to suboptimal outcomes. According to our hypothesis this might hold not only for individuals but also for firms. When firms are able (trough economic literacy) to use information more effectively, followed by decision-making about their prices, this might significantly reduce choice of suboptimal outcomes, since they will be less prone to nominal rigidities. Informed decision making depicted in Figure 1 might reduce probability of undesirable outcomes, according to our assumption. On aggregate level this should contribute to faster convergence to economy's equilibrium, when firms adjust immediately their prices with respect to the situation. With contribution of economic literacy, effectiveness of monetary policy might be significantly enhanced, since well informed subjects in the economy will react with flexibility to the goal, which is followed by the central bank.

Hypothesis will be examined with help of the experiment, which was partly inspired by study of Fehr and Tyran (2001). Individuals are in the role of the firms, setting price for its production in artificial monopolistic competitive economy. Returns of these firms are affected by their selling price and by the price level, which is determined by prices set by other firms in the artificial economy. Players in the role of firms, with strong incentives supported by financial reward, try to maximize their profit, defined as a function of their particular price and the average price level. During the process of learning, subjects are assumed to select the profit-maximizing price, which should be consistent with

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the total general equilibrium of the economy, if other subjects choose the correct price maximizing their profits, as well.

Possibility to explore the effect of economic literacy is secured by setting two types of groups in the experiment, which can be compared. This can be demonstrated in Table 2 below with help of experimental design (Guala, 2005). The first treatment is composed of well educated experimental group of subjects in their master's degree, who have advanced knowledge of microeconomics, macroeconomics, game theory and other related economic courses. This gives them solid backgrounds in economics and analytical skills, which enable them to apply basic economic concepts to various situations. This educational effect is marked as X. This implies that the effect of economic education within this group should according to our assumption lead to better economic outcomes Y_2. The second treatment is in the role of control group, where students are in their first year of bachelor's degree, therefore having only minimum knowledge of basic economics, which is indicated by 0 in Table 2. This according to the Salemi (2005) leads only to formal knowledge, which implies significantly lower ability to reach optimum outcomes. Therefore, the effect of economic education should be the least possible, leading to the effect Y_2.

	Treatment	Putative Effect	Other Factors
Experimental Group	X	Y_1	Constant
Control Group	0	Y_2	Constant

Table 2. Experimental design.

There are several reasons, why these subjects tend to be the best choice for our experimentation. Firstly, by inclusion of experimental and control group with above-mentioned characteristics, we are able to distinguish between literate and illiterate person. Well educated experimental group has prerequisite to fulfil requirements of economically literate person specified in Table 1, because trough participation in various economic courses it should acquire particular analytical skills and the ability to think in economic terms. Secondly, different behaviour of these groups might be observed, because we included control group with significantly weaker level of economic education. Still minimum amount of knowledge is guaranteed, where we opted for narrow target group, which has common interest. This should reduce common problems, where two groups do not exhibit reasonably similar characteristics due to the fact of significantly different educational attainment, income status, etc. Choice of this narrow group of students (i.e. non-probability sample) from the same university also ensures that sample will be more homogenous, which contributes to lower variability in experimental outcomes. In addition, problem related to economic efficacy mentioned by Walstad (1976) might be partly solved. Students chosen are appropriate subjects since they are interested in subject they study, if they opted for this specialization. Decision to study economic field initially assumes that individuals should have higher level of economic efficacy and therefore interest in learning economics than wider population. For these students, utility gained from economic knowledge is higher than costs of learning. The second problem mentioned by Walstad (1976) that deeper knowledge is not necessarily associated with interest to achieve economic outcomes, because of lower sense of economic efficacy will be weakened by proper incentives set in experimental design. Subjects will know that they can affect

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significantly their outcomes trough adequate pricing behaviour. Moreover, this awareness regarding higher economic efficacy will be strengthened further by adequate financial rewards.

Thus, with help of experimental design, functional definition of an economically educated individual has been specified for our purpose. Of course we have to bear in mind that potential irrationality might not be eliminated.

3.2 Experimental Design

Experiment is based on n-player pricing game with monopolistic competition. Contrary to original experiment of Fehr and Tyran (2001) this study makes a difference between subjects in their master's degree study with solid economic backgrounds participate, whose course of knowledge is related to highly demanding theoretical character of game, as opposed to subjects in their bachelor's degree with only weak backgrounds of economic relationships.

The game has 40 rounds plus one trial period, with a group size of n=4. 84 subjects participated in the experiment, which was conducted in the Laboratory of Experimental Economics, University of Economics, Prague. Experiment is divided into a pre-shock and a post-shock phase. Fully anticipated negative monetary shock is implemented during the game, which is common knowledge to participants.

In order to test the impact of economic education on economic outcomes, treatment groups differ with respect to economic education attained. Both groups received payoff functions, which provide them with information about their pricing strategy. Pay-offs of participants are expressed in nominal terms. In order for subject to decide correctly about the price of his product, he needs to re-count nominal pay-off into the real pay-off. The nominal pay off is given by $P_{-i}. \pi_i$, therefore in order to compute real payoff, individuals have to divide their nominal payoffs $P_{-i}. \pi_i$ by P_{-i}.

The real pay-off of subject i is given by:

$$\pi_i = \pi_i (P_i, P_{-i}, M) \qquad i=1,.... n$$

where P_i stands for nominal price, P_{-i} is the average price of the other n-1 group members, and M is nominal shock variable. Subjects are informed about payoffs of other subjects in the group, since x and y types players are present in nominal treatment. For more detailed specification of nominal payoffs and nominal payoff tables see Fehr, Tyran (2001). (Instructions and pay-off tables related to experimental design available upon request).

The need to recount nominal pay-off into real pay-off is a cognitively challenging task, which is the main barrier to optimal behaviour. It is assumed that well educated subjects will easily overcome this barrier and their behaviour will be less volatile due to their ability to coordinate, based on their economic skills. Economic education should work in favour of achieving optimum outcomes. On the contrary, control group should face higher uncertainty owing to absence of economic knowledge, leading to more volatile and suboptimal behaviour. We also predict that well educated subjects on aggregate level will converge more quickly to economy's equilibrium, since less rigidities are present due to the fact that these subject got easily over cognitive barrier in form of nominal pay-offs. Control group should converge at significantly slower rate due to the persistent nominal rigidities. Thus lower level of economic literacy might hinder the adjustment process towards equilibrium and might cause prolonged rigidity in the economy. In addition to presence of cognitive barrier, nominal shock is implemented and announced in advance. This will test different ability of well educated group and control group to cope with the shock.

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4. RESULTS

In order to detect the effect of economic education on pricing behaviour of firms, Savage's test will be applied, which refers to drawing conclusions directly from experimental data, displayed in graphs. Economy's equilibrium price, to which subjects should converge, is depicted by the red line in the graph, with values given by experimental setting, where the price before the shock is P_e=18 and price after the shock is P_e=6. (For details of mechanism see Fehr and Tyran 2001). The blue line stands for average price created in the economy by well educated MA (masters) group, whereas violet one stands for control group of BC (bachelors).

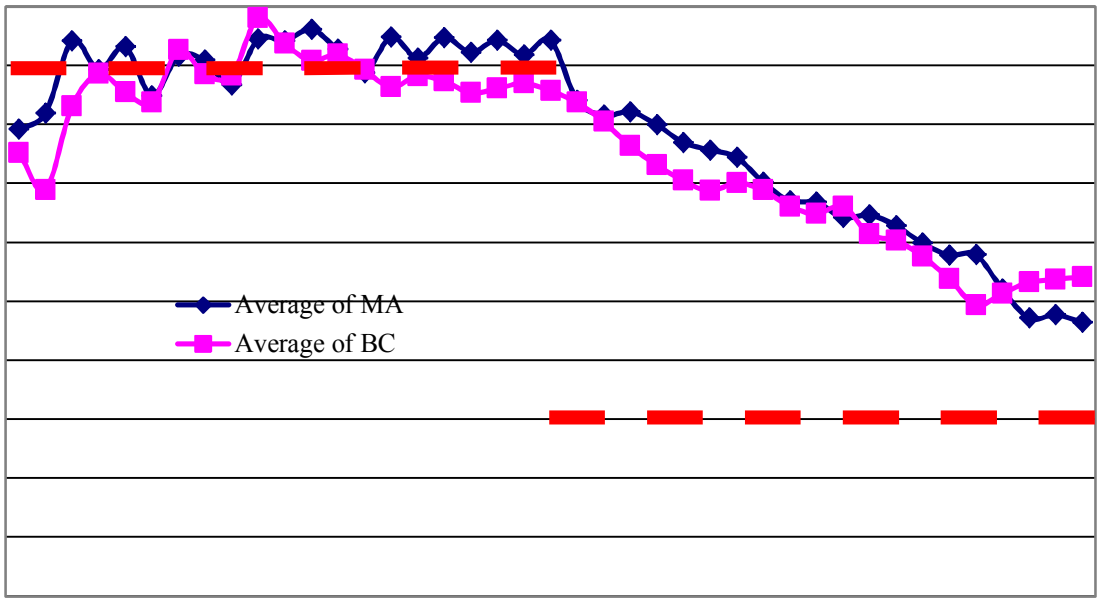

Figure 2: Price setting behavior of experimental versus control group.

Average prices were computed by taking average from groups, where 10 groups participated in BC treatment and 11 groups in MA treatment. Figure 2 implies that our assumptions regarding the difference between well educated (MA group) and low educated individuals (BC group) were not clearly confirmed with help of Savage's test. After thorough examination, the difference between behaviour of well educated experimental group, and control group, is almost negligible. Only at the end of the session from round 37 it is evident that MA group converges with its price closer to economy's equilibrium, compared to BC group. Before the shock, significant variability is present, which could be explained by the fact of uncertainty, induced by nominal pay-off environment. Still behaviour of MA group is closer around the optimum price, which could be explained by better performance in dealing with the cognitive barrier of nominal pay-offs. After the shock, it is evident that variability is slightly lower for MA than for BA group and also more balanced without ups and downs, going more directly to the optimum aggregate outcome.

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In order to analyze more closely potential effect of education, volatility of prices for both groups before the shock and after the shock was compared by computing standard deviations. Table 3 depicts standard deviations for 5 periods before and 5 periods after the shock, where these rounds are the most appropriate in order to detect noticeable difference in behaviour among well educated and less educated group. If we compare standard deviations of MA group and BA group for post-shock period, values clearly indicate that price variability is significantly lower for well educated group. This suggests that well educated individuals tend to coordinate within a group in a better way. If we compare the size of standard deviations before and after the shock for each group, it is evident that standard deviation of MA group has risen by less than standard deviation of BA group. This indicates that the ability of well educated group to cope with the shock is much better in terms of price setting. This group sets prices in less uncertain and volatile manner. Lower performance of BA group might be explained by the fact that this group, with only basic backgrounds in economics, tends to use only formal knowledge in order to set prices and therefore when it faces the shock, it is unable to adjust to the new situation. On the contrary, MA group with its knowledge and analytical skills is able to use information in more effective way and apply economic knowledge in case, when conditions have changed and there is some portion of uncertainty after the shock has been imposed. In addition, higher sense for economic efficacy is built in experimental design itself. This leads to the fact that well educated individuals consider utility from learning economics at the expense of costs. Therefore, they are more committed to this field and probability of behaviour based on applied economic knowledge is higher as opposed to less educated control group.

However, if we compare standard deviations for both groups before the shock, variability of MA group is slightly higher when compared with BA group. We should not attribute too much significance to this difference, which is almost negligible. The most important in our analysis is above-mentioned reaction of both groups, after the shock has been imposed.

	MA group (st.dev.)	BA group (st.dev.)
Before the shock	0,270062741	0,168263187
After the shock	0,644696525	1,166297561

Table 3. Variability of price before and after the shock.

Results above suggest that at least some effect of economic education might be present at aggregate level, but it is also desirable to examine behaviour of subjects at individual level, to identify possible differences in economic education or the speed of convergence. Figure 3 depicts behaviour of selected well-educated group MA9.

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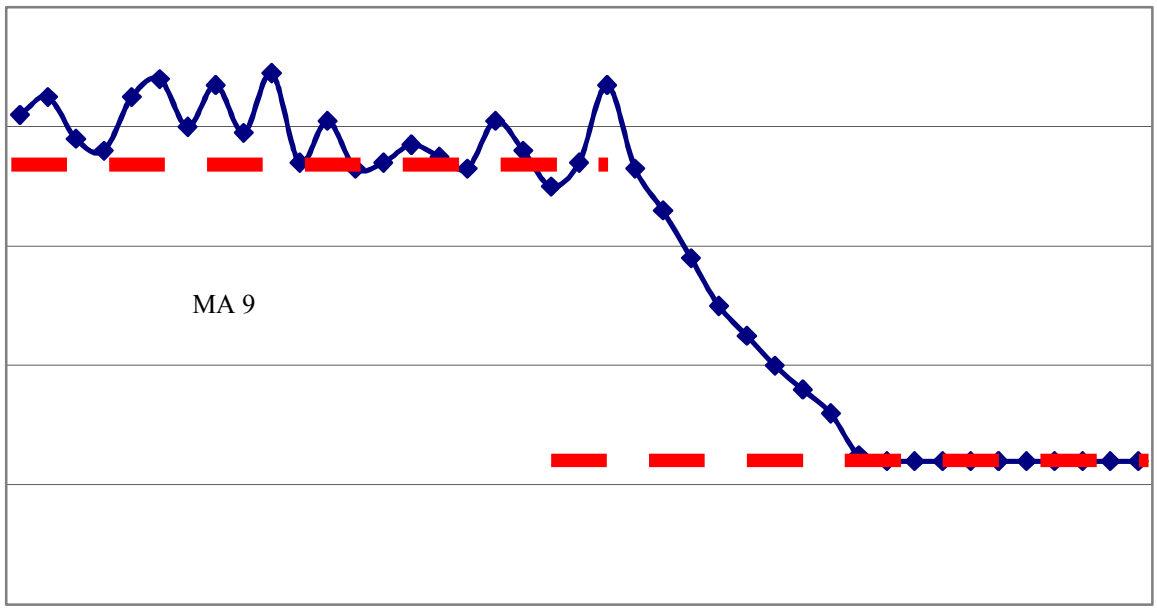

Figure 3: Price setting behaviour of well-educated group MA9 at individual level.

Before the shock, the volatility is significant, but when compared with group BC4, still the price is around equilibrium, with no significant deviations like in the former. After the shock in period 21, convergence seems to be much faster and adjustment smoother in case of group MA9 as opposed to BC4 (Figure 4). BC4 group converges with its price to equilibrium price in round 38, whereas MA9 converges already in round 30. BC4 group therefore heads towards suboptimal outcomes for longer time horizon. Group MA9 is ideal one, but not every group from well educated treatment converged so quickly. This suggests that not all of well educated subjects are able to overcome cognitive barrier directly after the shock, although they acquired appropriate economic education. This effect proved to affect situation on aggregate level, where the speed of convergence of well educated subjects is not significantly faster than the speed of convergence of less educated ones as analyzed in Figure 2. This suggests that nominal inertia are still present and educational effect might play weaker role than expected, although it proved to be significant with respect to lower variability of outcomes.

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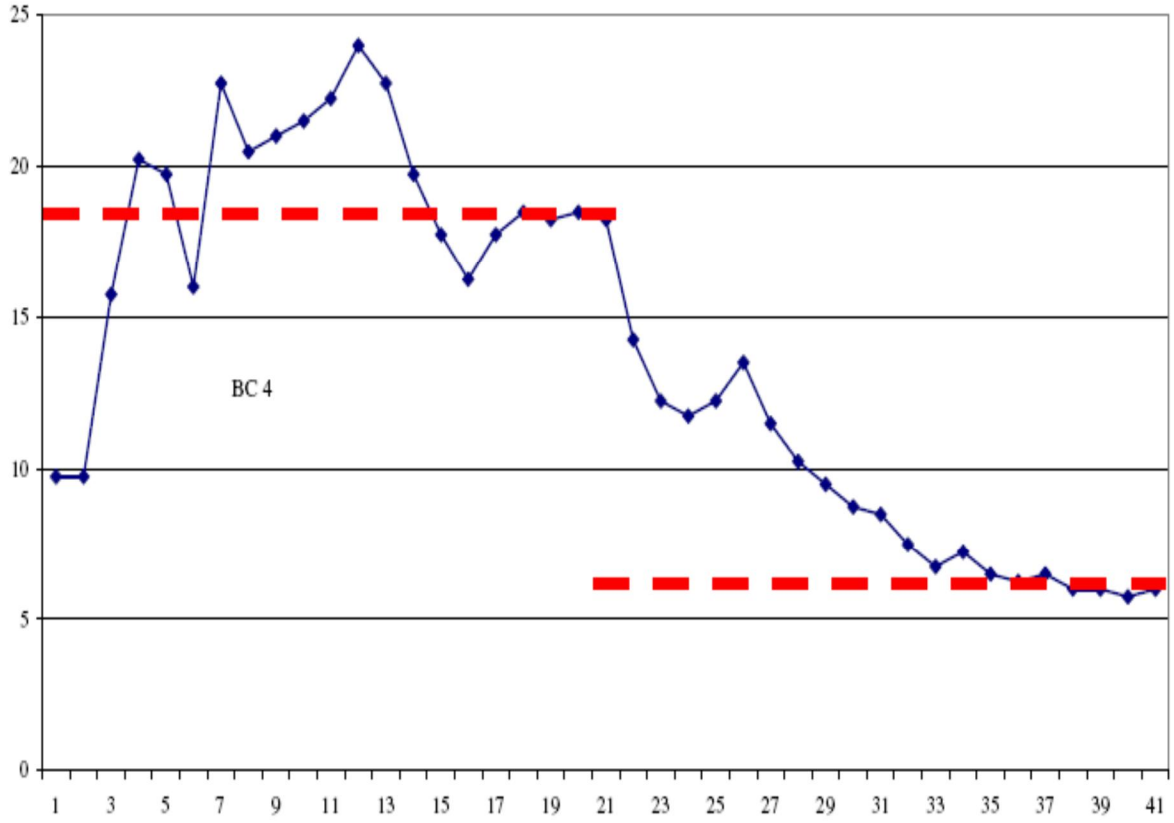

Figure 4: Price setting behaviour of control group BC4 at individual level.

5. CONCLUSIONS

This paper tried to analyze the capability of economic education to drive the economy towards desired market outcomes trough subject's behaviour, in light of recent effort of central banks to support educatory programs aimed to increase economic literacy. The effect of economic education on pricing behaviour of subjects in the role of firms was examined with help of laboratory experiment in monopolistically competitive economy. Hypothesis was based on the fact that well educated individuals possess the ability of better informational decision making, as mentioned by Bernanke (2006) and others, which might reduce probability of suboptimal outcomes.

Whether dissemination of economic knowledge is worth the cost regarding appropriate effect of economic education was assessed in terms of variability of prices set by firms during the experimental session, which might indicate that economic education contributes to better coordination among players and therefore more stable environment. In addition, the speed of convergence to optimum price was assessed. The main barrier, which players had to face was expression of pay-offs in nominal terms. This nominal environment tested the ability of economically educated individuals to break trough barrier and contribute to lower occurrence of nominal rigidities. The possibility to identify the effect of education on pricing behaviour of subjects was enabled by inclusion of experimental group, which was well educated and control group with only minimum economic knowledge.

Results indicate that variability of prices at aggregate level was significantly lower for well educated group after the shock. Moreover, when the size of variability before the shock and after the shock was compared, the variability has risen by less for well educated group than for control group after the shock. This suggests that application of economic knowledge enables well educated individuals to coordinate successfully in a manner, which exceeds performance of control group which relies rather on formal knowledge. However, we cannot conclude that education plays any role in faster convergence to economy's equilibrium at aggregate level. Experimental and control group do not differ in significant manner, which signalizes the impossibility to break trough nominal barrier. At individual level the speed of convergence is faster for some of well educated groups, but not for aggregate group. Thus, nominal inertia is not eliminated by well educated individuals and movement towards suboptimal outcomes not eliminated significantly.

Possible explanations for negligible effect of economic education might be that nominal barrier represents serious cognitive constraint, which only some of well educated individuals are able to overcome in a very short time as opposed to less educated individuals, but difference in performance between these two groups is rather weak. Therefore we might say that possibility for improvement of economic knowledge has some limits in terms of cognitive constraints. This is confirmed by Carpena et al. (2011), who indicates that still cognitive constraints are barrier for further possibility to benefit from economic knowledge and in line with Stigler, who points out that there is considerable cost attached in order to gain economic knowledge and although economics is general knowledge, it might not be close to public, from cognitive point of view, in order to apply it adequately in some conditions. Therefore, economic education might be directed towards less artificial and more applicable topics, like Salemi (2005) emphasize.

Thus, we may conclude that well educated individuals contribute to lower variability of prices, but their education is not sufficient to affect significantly the speed of convergence to economy's equilibrium and eliminate nominal rigidities in a faster way than individuals with low economic knowledge. At least our study may justify the need for economic education promoted by central banks, in following way. Results suggest that better economic knowledge leads at least to reduction in variability and uncertainty. This might help to promote one of central bank's goals, price stability and indirectly support effectiveness of monetary policy.

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INNOVATION AS A PROCESS OF CAPITAL EXTENDED DEVELOPMENT: IS IT POSSIBLE TO BUILD INNOVATION ECONOMY IN RUSSIA?

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Abstract

The status and trends of Russian high-technology and science-intensive complex development over last 10 years are examined and comparative assessments of the current complex condition with the tendencies of global high-technology sector development are given. This analysis serves to clarify Russia failure in building of efficient innovation economy. To provide theoretical explanation on that failure hypothesis was put forward that formation of high-technology industries, national innovation systems and modernization processes are common in nature and based on the emergence and development of capital new forms. Therefore it is necessary to distinguish between "innovation" as emergence and development of new industries (the definition of Schumpeter) and "innovation" as cycle of capital extended development which uses new technology as permanent resource for its growing. Thus the key challenges of Russian economic modernization should be the reintegration of the institutional structure of the national economy and reindustrialization of country.

Key words: *innovation, high-technology, national innovation system, economic modernization, capital cycles, Russian economy, science.*

1. INTRODUCTION AND THE RESEARCH PROBLEM

A thesis that now has become a commonplace is that sustainable development of the global economy and, particularly, the Russian economy requires pursuing a policy of creating the conditions under which the role and function of the economic growth driving force will gradually move from mineral mining and processing industries to the innovative sector. Russia can achieve this through creation of large corporations within the science-intensive and high-tech complex (SHTC) able to compete in the innovative markets on equal terms and increase the share of science-intensive products among the leading countries in the global high-tech manufacturing industries.

In the author's opinion, broadness and multidimensionality of the problems related to the formation of the national innovation system in Russia become even more complicated due to the fact that the global economy and finances are moving to a new qualitative restructuring stage that can be compared with the Great Depression of the 1930s, structural and monetary crises of the 1970s [1, p. 79-109]. In view of this, multiple problems that seem to have been solved many times on theoretical or application levels of the economics become urgent again.

We would like to remind that in 1939 Austrian scientist J. Schumpeter [2] has published his major work where he tried to find the connection between the cycles of N. Kondratieff (50-60 years), C. Juglar (9-11 years) and J. Kitchin (40 months) and innovation processes. In his book J. Schumpeter developed a hypothesis about uneven nature of the economic growth and innovations as the reason for this unevenness. According to him, an innovation disturbs the economic balance that then is restored on a new level as

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influenced by the economic competition processes. When an economic system transfers to a new state of balance, an entrepreneur who introduces this innovation first, gets excessive profits the amount of which decreases as this innovation is utilized by other firms. Implementing innovations and subsequent restoration of the economic balance on a new level are expressed in uneven economic growth. J. Schumpeter also considers an innovation as a new scientific and organizational combination of business factors driven by entrepreneurial spirit. Innovations are a new moment in economy dynamization. An innovation can be "manufacturing of a new product, implementation of new organizational forms, e.g. a merger, opening a new market etc." Any innovations are related to a *risk* and require giving up the old for the sake of the unusual *new*. A Schumpeter's entrepreneur is an individual who fights for overcoming the tradition to introduce a radical change by offering new opportunities. Entrepreneurs implement innovations by allocating means of production in a different way. They have to change the funding base of the economy from the known past to an unknown future. To find the financing sources they have to rely on a banking system, given that manufacturing factors should be redirected from the current (and past) application in favor of the new (combination) based on a belief in potentially expected benefits (in the hope that the innovation will surpass its prototypes). Such disconnections from something already known lead to creation of innovations, qualitative disturbance of continuity and irreversible onward movement. If they are successful, it leads to mass imitation and gives rise to "an eternal storm of creative destruction" of the old manufacturing methods, which results in a new improved cycle. However, back then J. Schumpeter's ideas did not obtain a wide circulation.

Schumpeter's ideas were revived by G. Mensch [3], who divided all innovations into basic (those forming new industries and new types of jobs) and improving (technical improvements in the already existing industries) appearing in the course of practical implementation of the new opportunities established by basic innovations.

Currently there are dozens or even hundreds of innovation definitions in literature. For example, based on the content or internal structure we can distinguish between technical, economic, organizational, managerial and other innovations. There are such attributes as innovation scale (global and local); life cycle parameters (definition and analysis of all phases and sub-phases), implementation process conformity etc. Although many authors interpret this notion depending on the object and subject of their research, still almost all of them mention such significant attributes of innovations as "new" and "improved" quality of the product (process etc.) recognized by customers, as well as effects of their implementation (economic, organizational, technological etc.). Another important notion that has been introduced is the "'"national innovation system" (NIS) [4, 5], that has been widely used for studying specific economies since the 1990s.

At present in statistics conventional notions are adopted with respect to the technological innovations. They were established by *Oslo Manual* [6] and have also been fixed in the international standards for science, technology and innovation statistics. According to this document, "an innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in the business practices, workplace arrangement or external relations" [6, p. 46].

However,. Schumpeter's innovation theory and its more developed versions do not explain how the innovator gets extra profits. These profits seemingly appear from nowhere independent on the general conditions of the global economy development. We would like to single out this problem but first we will consider the situation of the Russian high-technology sector.

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2. RUSSIAN HIGH-TECHNOLOGY INDUSTRIES

It should be preliminarily mentioned that the classification of high-technology industries adopted by the Organization for Economic Cooperation and Development (OECD) [7], and the one in the report differ from each other by the range of industries due to specific features of the Russian economy and definitions used by the author [8, p. 21-45, 166-189, 370-380; 9, p. 44-49]. Commenting on the data in Table 1, we would like to note that in both international and domestic statics high-technology products traditionally mean gross production in the following groups of industries:

– aerospace industry;

– electronic industry, manufacture of computers and electronic components, office equipment and software (SW), communication equipment industry;

– medical equipment, precision, optical and electronic instruments;

– chemical and pharmaceutical industry.

Manufacturing industries (NACE codes)
High-technology
Manufacture of pharmaceuticals (24.4)
Manufacture of office machinery and computers (30)
Manufacture of radio, television and communication equipment and apparatus (32)
Manufacture of medical, precision and optical instruments, watches and clocks (33)
Manufacture of aircraft and spacecraft (35.3)
Medium-high-technology
Manufacture of chemicals (24, excl. Code 24.4)
Manufacture of machinery and equipment (29)
Manufacture of electrical machinery and equipment (31)
Manufacture of motor vehicles, trailers and semi-trailers (34)
Manufacture of ships and other transport equipment (35, excl. Codes 35.1 & 35.3)
Services
Knowledge-intensive services
Water transport (61)
Air transport (62)
Post and telecommunications (64)
Financial intermediation (65 to 67)
Real estate, renting and business activities (70 to 74)
Education (80)
Health and social work (85)

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Recreational, cultural and sporting activities (92)
High-tech knowledge-intensive services
Post and telecommunications (64)
Computer and related activities (72)
Research and development (73)

Table 1. Classification of industry areas according to technology levels*

Source: [7, p. 207].

* To make the table shorter we excluded medium-technology industries of a low level and low-technology industries.

Table 1 shows that the OECD classification of industries by the level of technology divides the industries into high-tech, medium-tech and low-tech groups, as well as medium-technology industries of a low level and low-technology industries. By high-technology industries we traditionally mean those the shipped product of which contains a share of the sectorial research expenses of at least 4.5-5%, while high-science-intensive industries are those where such share exceeds 10% [10].

It should be noted that the OECD classification is based on the existing structure of high-technology industries of the advanced countries different from the Russian economy due to historical factors. The Russian economy has inherited many peculiarities of the Soviet type of economy. It should be also noted that more than 60% of high-technology medical equipment manufacture in the Russian industry as well as manufacture of almost all the precision, optical and electronic equipment, as well as a number of chemical, pharmaceutical, microbiological, chemical industries are concentrated in the military industrial complex – MIC, a number of industries in which (e.g. ship building) are commonly attributed by the international statistics to medium-technology manufacturing industries of high level. However, specifics of the Russian industry require that currently all military defense sectors as well as the electronic complex (EC), nuclear industry (NI) and nuclear energy (NE), manufacture of weapons and military equipment (WME) are parts of the science-intensive industries, while aerospace industry (ASI) is part of high-science-intensive area.

So we will refer the military industrial complex, nuclear complex (NC that includes nuclear industry and nuclear power plant operation sectors), high-technology manufactures of chemical-pharmaceutical and chemical industries (including manufacture of microbiological products, some types of plastic items, chemical fibers, yarns and composites), scientific tool engineering, manufacture of complex medical equipment to the Russian science-intensive high-technology complex (SHTC)., SHTC can also include high-technology sector in the services industry. Science-intensive, high-technology services include types of communication (aerospace, fiber optic, cell, internet services etc.) and data transfer services, air carriage by advanced aircrafts, aerospace support services. In the long view implementation of advance information technologies in Russia will allow the high-technology knowledge intensive services to cover health, education and financial sectors. However, specifics of the SHTC reproductive system that is still forming and Russian statistics allow us to differentiate the SHTC "kernel" as completely as possible, namely: military industrial complex and nuclear industry areas (including their scientific and technical output products), but excluding entire high-technology area and its infrastructure on a country level.

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Several years ago OECD was requested to do a research of the Russian innovative system and as a part of the research the following classification was developed: by similarity of the final products and technical processes science-intensive high-technology industries are grouped in the following aggregate complexes [11, p. 89-90]:

– aerospace industry (ASI) consisting of aircraft industry (AI) and guided missile and space industry (GM&SI);

– radio-electronic complex (REC) including electronic industry (EI), radio industry (RI) and communications industry (CI);

– production of complex (technical) machines and equipment consisting of arms industry (AI), weapons and special chemistry industry (WI), ship building industry (SI);

– nuclear industry (NI).

General dynamics of the Russian SHTC as compared with extractive and processing industries as a whole for the period from 2001 to 2011 is shown in Figure 1.

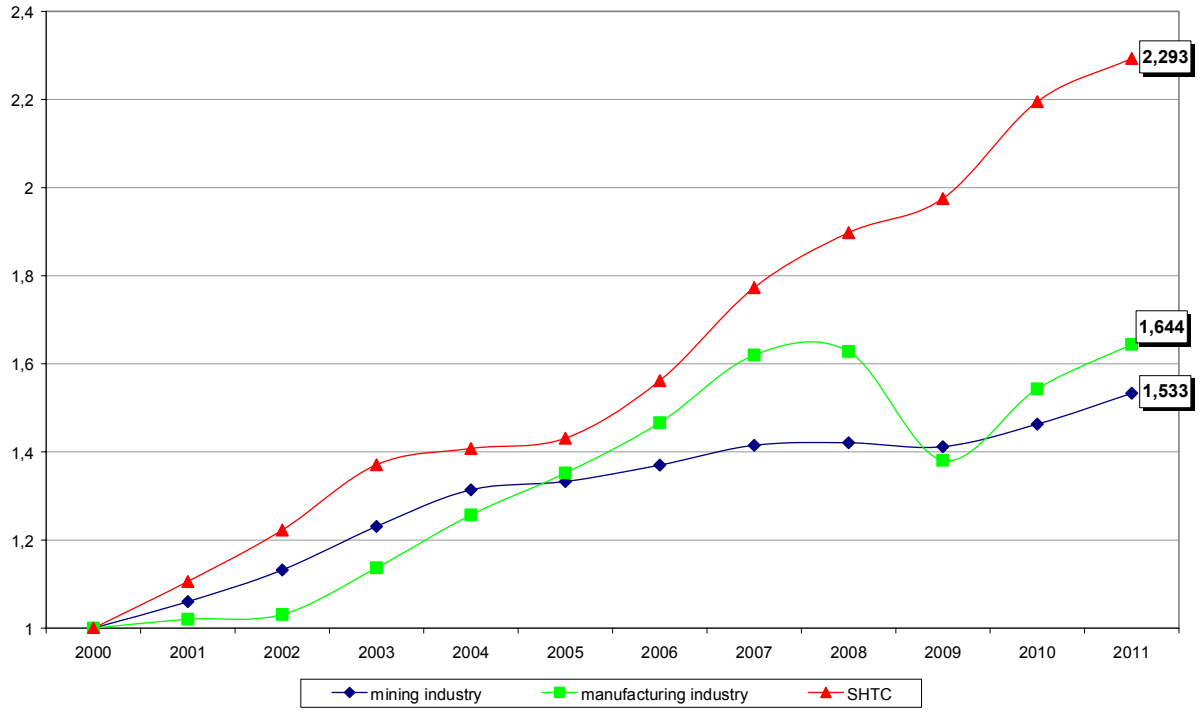

Figure 1: SHTC dynamics as compared with other types of economic activities shown on an accrual basis (in times) during 2001-2011

During 2001-2011 SHTC gross industrial production increased almost by 2.3 times. During the same period, processing industry volume in Russia grew by more than 1.64 times, while the extractive industries growth reached 1.53 times. The average annual growth rates of SHTC industrial production

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during this period were about 7.8% vs. 4.6% of the growth per year for processing operations. Now the rank and role of SHTC in the Russian economy is first of all determined by its significance for support of the military capabilities of the country, and, second, by its scientific and technical potential.

SHTC civil production is developing in an unstable manner. In the years before the crisis, we observed a tendency that allowed changing the proportion between the contributions of the civil and military sectors and increasing the civil production in all defense sectors. However, during 2009-2011 this tendency has changed into the opposite. The other stable tendencies observed during the 2000s were reduction of the work force in the MIC industrial sector, growth of capital investment in renewal of enterprises' fixed assets.

If we also consider high-technology services as those included in the SHTC, for example information and communication technology (IC), air transport services and pharmaceuticals, at the end of 2011 a bit more than 4% of the total number of employees in Russia were employed there. Overall total of gross value added (GVA) generated by SHTC sectors as a whole in 2011 was estimated at 3.9% of GDP, i.e. the share of the SHTC in the economy of the Russian Federation is rather small if compared, for instance, with extraction of minerals (GVA share in GDP is about 9%). The overall structure of SHTC gross production, i.e. including high-technology services, is shown in Figure 2.

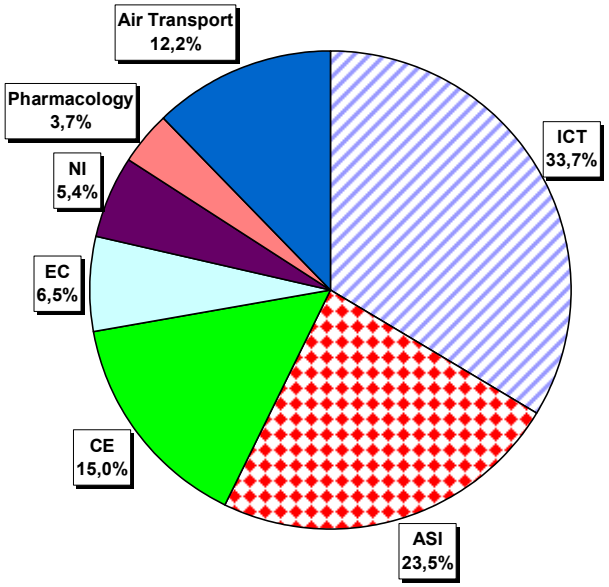

Figure 2: Overall structure of SHTC gross production in 2011

As we can see in Fig. 2, SHTC includes three dominating economic areas: information and communication technology, aerospace industry and air transport services (69.4%). However, we would like to note that the IC sector as well as air transports are the industries that are actively

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importing high technology equipment and finished products. That's why rapid growth of these areas is an actual deduction from the Russian GDP growth rates.

It should be additionally noted that during 2007-2010 innovation intensity rate of machine building enterprises varied from 15% to 26% [12, Table 8.6], and that is significantly lower than the rate of the advanced countries. The share of the innovative products in the total shipped product of the innovation-intensive enterprises increased to 10.4% in 2000 and to 12.6% in 2005 to drop to 8.9% in 2010 (9.8% - in 2008) [12, Table 8.4]. Here we observe the contradiction: decrease of the innovation activity with no decrease of the growth rates (Figure 1).

Let us refer to OECD statistics [13] to compare the sphere of science and technology of Russia and other countries. Table 2 shows the indicators of the gross domestic expenditures on R&D in a number of countries and economic organizations during 2009-2010.

	GDP bln USD based on PPP 2010	GDE mln USD based on PPP 2010	GDE vs GDP 2010, %	Growth over 2001-2010, %	Government expenditures total/civil on R&D vs GDP, in 2009, %	GDE of entrepreneurial sector vs GDP in 2010, %	GDE of higher education sector vs GDP in 2010, %
USA	14526.55	400458.0*	2.76*	22.2*	1.12/0.51	2.03*	0.39*
EU	15248.7	304891.2	1.91	28.02	0.68/0.62	1.16	0.47
Germany	2944.35	86209.6	2.82	25.07	0.84/0.79	1.90	0.51
Great Britain	2199.16	39137.8	1.77	12.38	0.60/0.50	1.08	0.48
France	2134.95	49990.8	2.26	17.53	0.87/0.68	1.38	0.48
Japan	4380.34	137314.2*	3.36*	13.93	0.59/0.57	2.54*	0.45*
OECD	42112.82	968108.2*	2.40*	26.12*	0.73/0.50	1.62*	0.44
Russia**	2240	25961.2	1.16	88.79	0.672/0.564	0.452	0.1
China	10128.31	154147.4*	1.70*	462.60*	0.40	1.25*	0.14

Table 2. Gross Domestic Expenditure on R&D and its derivatives during 2009-2010

Sources: [10, 12, 13].

* Data for 2009.

**CSRS data [12].

As we can see from Table 2, in 2010 GDE on R&D in Russia reached 25.96 bln USD based on PPP, while, e.g., in China they reached 154.15 bln USD, i.e. that is almost six times higher. The USA is the R&D GDE leader among the nation: they spent more than 400 bln USD (2009), which is also proved by the fact that the amount mentioned comes to more than 41% of OECD countries' total expenses.

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It should be also pointed out that GDE growth rates in the Russian Federation are higher almost 3.4 times than the average rates in OECD countries, but are more than 5 times lower than GDE growth in China. However, the growth rates of funding the research and design are not sufficient for expanded reproduction of R&D sphere in Russia, as the growth of the 2000s did not restore the required level of the science funding [8, p. 209-217]. It is especially noticeable if we compare technological payment balances: the countries having the highest R&D GDE are the main net sellers that increased their active net of the trade technological balance [13, Table 69-71]. Moreover, if the advanced countries (USA, Japan, Germany and other) observe the increase in the positive technological balance, in Russia we observe a reverse process: during 2001-2009 balance deficit has increased by almost 6.2 times. The tendencies prove that in Russia "catching up" of the foreign technologies in early stages of development is getting stronger than developing the country's own cutting-edge technologies.

Now let us consider the summarized dynamic profile of high-technology industries according to the National Science Foundation (NSF) [10] (Picture 3).

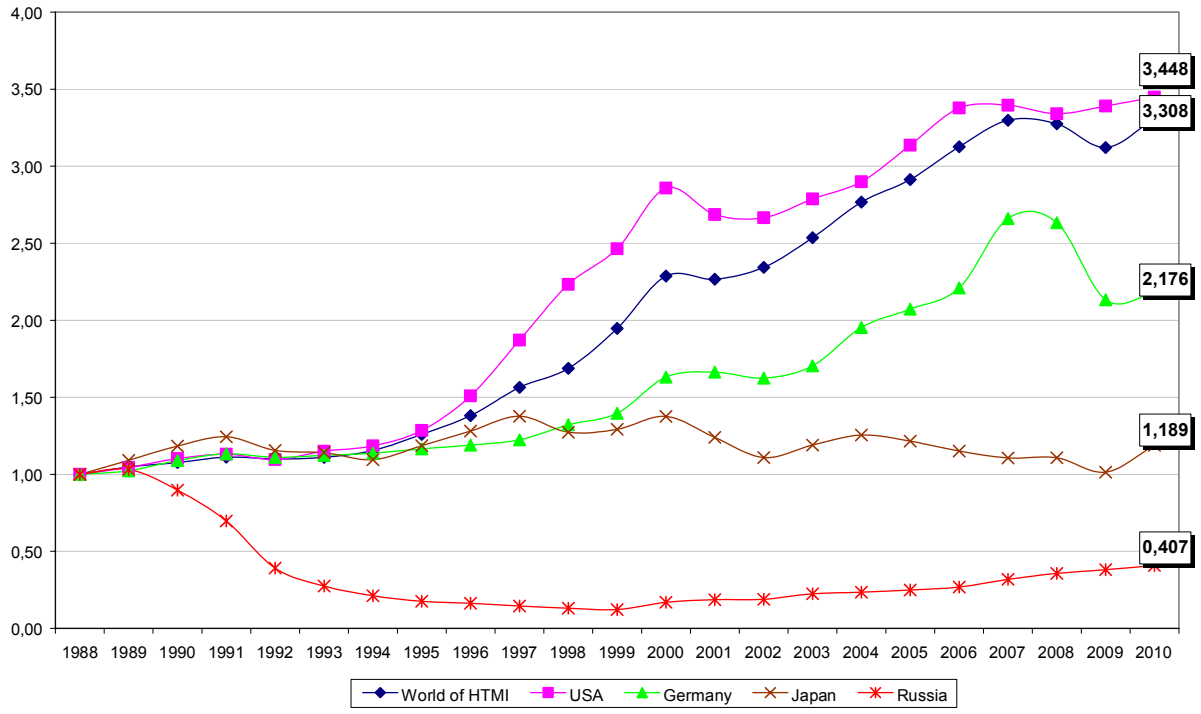

Figure 3: Dynamic profile of high-technology industries in Russia, USA, Germany, Japan and overall high-tech global industry for 1988-2010 (times), shown on an accrued basis

Figure 3 shows that American high technology complex is growing at the speed close to the global average, while the high-tech industries in Germany and Japan are developing much slower. It is also worth mentioning that high-tech complex of China that during 1989-2010 has grown 40 times due to the low base effect was not shown in Figure 3 .

According to the author's calculations based on NSF estimations, it appears that in 1988 the USSR ranked third in the world with 7.2% of the global high-technology complex of processing industries

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(USA ranked first, Japan – second). It is interesting that in 1991-1992 Japan for some time topped the rating of high-technology product manufacturers, but starting from 1993 USA has firmly occupied the first place. After the USSR collapse Russia has been immediately outrun by Germany, France, Great Britain and Italy. Since 1993 Russia has been also outrun by the Republic of Korea, Taiwan, China, India and Brazil, since 1994 – by Singapore, since 1995 – by Canada and Malaysia, since 1996 – by Mexico. From the peak production in 1989 SHTC of Russia (constituting around 75% of the USSR SHTC) dropped by almost 6.4 times in dollar equivalent by 2000 and by 5 ties in ruble equivalent. An even more drastic decrease in the SHTC performance in USD equivalent is explained not only by a quicker recession of military production (as compared to the civil operations) in the 1990s, but also by a comparatively slower reduction in efficiency of the industrial production facilities, which partly compensated the recession intensity of the MIC output, WME exports and high-technology civil equipment. A quicker recovery growth of the Russian SHTC in USD equivalent (as compared to the growth in national currency) over 2000-2010 (approximately 3.8 times) is explained by quick converging of the ruble rate based on PPP with the Forex rate, which was related to an increase in imported components in final machine building products. In 2007 Russia has outrun Mexico, since 2009 Russia had assumingly outrun Canada and Malaysia. According to preliminary estimation, in 2010 the share of the Russian SHTC in the global SHTC of processing industry reached about 1.3%. Now the countries' rating in the world's SHTC of processing industry looks like that: USA, China (ahead of the EU since 2008), European Union, Japan, Republic of Korea, Germany, Taiwan, Great Britain, France, Brazil, Italy, Singapore, Russia (12th place, excluding the EU as a whole).

3. THE NEW CONCEPT FOR INNOVATION DEVELOPMENT

High dynamics of the Russian SHTC development, shown above, let the Russian government hope that under certain conditions this sector can speed up its development rates as well as technical modernization rate of the Russian economy with increasing (still low) of the enterprises' innovation activity. This is favored by the standard understanding of innovation processes that had been already mentioned before. But is that really true?

To answer this question, we need to use different theoretical bases. A paradigmatic base for the new understanding of an innovation from the proposed point of view will be a transfer from the object-relational paradigm to a "process" paradigm. In the new paradigm an innovation is viewed not as a product, but as a business process. In this regard, "objectification" and "reproduction" serves as the key categorical constructions. By *objectification* we mean fixing of the structure (invariant) of the social phenomena, interactions, practices, appearance of the new area of peoples' activities, which is interdependent on both reproduction of the social objects themselves, and of the conditions that support their existence. *Reproduction* means a permanent repeating cycle of a certain objectification structure replication in the actions of the other (external) objects and subjects related to it. In other words, innovation is a social objectification that should be reproduced within the framework of definite social practices.

To transfer to a new paradigm, we should first explain that from the point of view of such theoretical bases, the capital is viewed as a more universal notion, rather than the wide-spread understanding of it as property, production means or a certain sum of money that can be invested in an asset etc. Speaking more strictly, *production capital* is an objectification supporting the process of an extended cost reproduction, that in a certain way unites the following items: capital subject (an entrepreneur, an enterprise or technology owner); employees (individuals that do not own the production means); capital object (production means and work objects); manufacturing environment; activities of workers

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and managers related to conversion of the work objects into a new product with the help of production means; results of these activities, i.e. a product that becomes a commodity item; actions of the capital subject aimed at organization of production, selling of goods and award of the part of obtained profits. A key point of the production capital movement is that the money obtained in the final stage (market sale of goods) exists as a capital only if it is reinvested in production. This implies an extended reproduction of all primary markets (including an employment market) as well as selling markets for final products [14, p. 40-48].

In this regard, the actual assumptions for innovating processes will be high-technology operations representing a form of production capital which, in its turn, objectifies the way of advanced technology application (including commercial utilization of technical knowledge for development of advanced equipment and technologies) in the final stages of the global economic material structure. Such high-technology operations were established as far back as back in XIX century (organic chemistry, electric machinery etc.), but as the material structure became more complicated, the "obsolescent" high-technology industries were shifting to the "middle" of the global economy pyramid (first becoming medium-technology industries of high level, then – medium-technology industries of low level etc.), while on the top of it high-technology industries of the new generation appeared. Such operations represent a kind of a long-term "natural monopoly" until a new layer of the economy material structure appears [9]. The 2nd half of XIX century observes a gradual generation of the banking capital excess (its excessive formation) which became a necessary pre-requisite for innovations (in Schumpeter's terms). Please note that it is not by coincidence that J. Schumpeter speaks about innovator's "entrepreneur spirit". The matter is that at J. Schumpeter's times such form of science as R&D did not exist and an innovator had to create an innovation outside of the operational cycle – during time out of work, i.e. for free, and to organize new production a banking loan had to be taken (initial purchase of materials, components, hiring new employees, expenses on production organization) [2]. Appearing innovation would mandatorily use the enthusiasts' free time as a resource, while the enthusiasts use a part of the technical means from the previous routine practices but in a different way. Generally the functions of the new-born innovation are vaguely imagined by the innovators, as they are often driven by ideas or even ideological motives. But in the next implementation stage of the innovation for other subjects it offers new, often unpredicted, but real functions. These functions become a new resource (condition) for extended reproduction of these subjects. Accordingly, under the new conditions the innovation becomes an independent objectification and acquires its own local development dynamics (its own local history). In this development stage the innovation becomes a new special area of people's activity and starts to appropriate resources from the other previously established areas of activity. This is exactly what J. Schumpeter calls "creative destruction". If the "overflow" of resources becomes stable, the new activity area routinizes the new practices and forms a new life style for certain groups of people. Along with this, during the stage of sustainable development, these groups of people adopt meaningful constituents of "life styles" of higher society layers, thus improving their own status as a whole.

Since the 1940s-1950s the production capital was additionally gradually capitalizing scientific and engineering knowledge - R&D. With capitalization of science for *a more stable* development *of the major* part of high-technology operations, it was necessary to significantly increase and continuously support R&D expenses on a high level. This was the reason for introduction of the term "science-intensive production" into scientific use starting from the 1970s. So, in Schumpeter's terms, modern innovations are a qualitative development of basic innovations: they appear at formation of an innovation cycle, which did not exist at J. Schumpeter's times. Formation of the innovation cycle became possible following the appearance of R&D.

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It turns out that in the standard definitions used in the OECD documentation, attributes of "innovativeness", "science-intensity" and "high-technology" are mixed-up, though they should be differentiated. The research that has been conducted since the 1970s proved that utilization of the R&D results is sustainably localized in the group of high-technology industries, where the majority of sophisticated (high-technology) machinery and cutting-edge technologies are created. Irreplaceability of serial-manufactured high-technology products with the previous-generation technology becomes a key attribute of high technology. In this case the advanced technologies are developed and applied on all levels of the economy material structure including extraction industries, though we can also speak about using advanced technologies on the lowest level of the economy material structure as well.

Unlike the other types of economic activities high-technology industries are characterized by a massive application of advanced technologies. Science-intensive and high-technology operations assume the following: a) private ownership of specific technologies (know-how); b) advanced technology chains reaching the operations that support manufacture of final products. Innovation-oriented economy based on high-technology operations (not earlier) that is characterized by an additional opportunity for a quick change of the range of products (which is possible not on all high-technology operations), as well as by formation of innovations cycles related to sales (marketing) system which is different in terms of quality and where re-innovations allow obtaining benefits sufficient to reimburse the investment in the product development in the previous cycle. However, many innovation operations are far from being science-intensive [9].

After we have clarified our point of view, we will touch upon the tradition description of an innovation cycle. Usually an innovation cycle is described as follows:

1. The cycle begins with a central innovation idea (concept) that occurs to an innovator. More advanced descriptions sometimes additionally mention a pre-study of technical and technological opportunities for creation of an innovation product, plus a pre-estimation of the developed product market.

2. A customer funds the research and, subsequently, the developments, thus enabling creation of the innovation by a group of researches.

3. After a prototype is made, it is tested and assessed after which a test batch of commodity items is produced to understand how the new product is perceived by customers.

4. Then the manufacturer ensures organization of serial production and sales of the new products. If customers perceive the innovation positively, then the implementation phase is followed by a phase of quick sales growth which is generally described as exponential. Innovation creation stages, its implementation and quick production growth are accompanied by investment made by the innovator which is often called "risk investment".

5. Other manufacturers respond to quick distribution of the new products at the market by trying to organize a similar competitive production. This leads to gradual market saturation and slower growth of innovative products sales. This stage is often called a "technology commercialization stage". During this stage the total accumulated profits are gradually reaching the total amount of expenses on development and implementation of the innovation, and then exceed it ("investment payback point").

6. Further on, routinization of the innovation with customers leads to creation of conditions for decrease in sales.

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7. Accordingly, the innovator faces a new need for creation of another innovation and has to reinvest in new R&D. Advanced descriptions state that new R&D activities should be launched as early as in the sales deceleration stage – this is how the cycle is closed and a re-innovation is created.

What is the key idea in this description for us? First, to renew the innovation cycle it is required to obtain extra profits (in a broad sense, including banking loans or loans by selling company shares) that should be sufficient to finance new innovations (re-innovations). Second, this leads to appearance and objectification of a new-quality type of production organization and management, i.e. *innovation management* appears, and it is critically important for it to renew not only serial manufacture of a product but to set up a full innovation cycle.

But if we look more attentively at the traditional picture of the innovation cycle, we can see that implementation of its different phases requires using different subjects: in the R&D phase – a team of designers, in the implementation phase and in the next phases – highly-qualified personnel who can arrange for and support serial production etc. Then what activity unites all these phases? The key hypothesis consists in the following: all modern innovations should be viewed not as "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organisation or external relations" (see above), but as a process of reproduction of capitalistic relations that integrate and transform a part of scientific research into an intellectual work. In other words, the innovation begins not with an idea or discovery but with a *capital*. In this case a new product is first promoted on a "traditional" market, i.e. using the existing infrastructure for its promotion. But then specially-adapted means for transportation and storage of new products are introduced, and new knowledge for subjects of the market is built. Thus, a new special market infrastructure for the innovation distribution appears and that creates barriers to prevent the "old" products from entering the market. Thus production and distribution of a new product should become locally monopolistic at the new market. These conditions provide opportunities for improving the production benefits (at the expense of the local monopolistic prices) and accelerated distribution of the new product in an exponential manner. I.e., creation and distribution of the innovation means moving away from competition but not an improvement of the production competitiveness as it is interpreted traditionally.

So, innovations allow creating a temporary monopoly (prior to distributing a re-innovation) for the new product, which allows getting more profit in a competition with the other high-technology manufacturers in the same layer of the economy material structure. From this point of view, material conditions for appearance and relatively independent development of innovation process are as follows:

- excessive financial capital that should be reproduced mainly by "inflow" from outside, which necessarily requires globalization of the economy [9];

- formation of a national middle class that not only buys domestic innovation products but also invests in shares of high-technology companies, because bank deposits are not used for saving money any longer.

Then with regard to the innovation as a capital turnover process, we should distinguish: innovations a movement of production innovation capital (let's define them as innovations of Type I or *Innovation I*) and innovation as a movement of financial (venture) capital or *Innovation II*). From this point of view the innovations are very different from Schumpeter's innovations, though they are developed on the same basis. In Schumpeter's terms innovations got objectified approximately in the 2nd half-1st third of XIX century in Western Europe, while the innovation in the sense as we understand it today – in the

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50-60's of XX century in the USA. In the 1970-1980's a differentiation by countries took place (within the global differentiation of labor) along with new institutionalization of global innovation processes – this is formation of national innovation systems. Capitalization of the systems of higher and special education in the 80-90-s of XX century, in its turn, led to the objectification that was defined as "knowledge-based economy". We would like to stress once again that an actual source point for reproduction of an innovation cycle is not an idea (as it was defined by Schumpeter), but the moment of capital investment.

Thus, *Innovation I* (movement of production innovation capital) includes the following:

1) concentration of production capital and risk investment in: a) evaluation of technical opportunities for creation of an innovation and analysis of market prospects, b) R&D, c) preparation of the production operations, marketing of the new product;

2) investment in: a) serial production, b) marketing (sales, profit acquisition);

3) a new stage of risk investment (re-innovation).

The innovation cycle has the following outputs: profits; production innovation capital value growth; a new organizational and economic form supporting the innovation cycle; new markets for innovative products; employees who improve their qualifications and competence; a team of innovators able to generate new inventions and a team of innovation managers responsible for implementating the complete innovation cycle.

Innovation II (movement of a venture capital) includes the following:

1) concentration of financial capital and risk investment in start-ups (formation of a production capital in the innovation sector);

2) performing IPO;

3) profit acquisition → transformation into financial capital, preparation for new re-investment → a new stage of risk investment in new start-ups.

The results of the venture capital movement are: profits; increase of the venture capital value; a new organizational and financial form supporting a venture cycle; new markets for innovation capital; employees improving their qualification and competences; assessment of opportunities for commercialization of applied research; new entrepreneurs coming from scientific and engineering spheres and capable of heading new innovations businesses.

Distinguishing innovations as cycles of movement of production and financial capitals leads us to the following conclusion:

- a venture capital can be established only on the basis of the already well-developed innovation processes, i.e. existing reproduction of innovation production capital is a pre-requisite for it;

- if the period of the innovation cycle is longer than the turnover period of the traditional capital with a rate of return typical for the country's economy, then the private capital is not interested in investing in domestic R&D and will seek opportunities to import ready-made technologies and products;

- science becomes a resource for innovations, where the innovator is interested in financing new applied research and developments but not fundamental sciences.

4. CONCLUSIONS AND SUMMARY

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What conclusions can be drawn from the above?

4. 1 Innovations utilize the science as a resource and partially destructing it (narrowed reproduction of science appeares), but in some areas there is an additional funding of applied research which is also partially used for funding of the fundamental science.

4. 2 Capitalization of science is transforming scientists (through a grant and contractual work system,, etc.) into "mental workers", i.e., employees who are interested in earning money but not in searching for new scientific knowledge.

4. 3 The key contradiction is a distorted proportion of "innovations – applied science – fundamental science", which results in impossibility to continuously create and reproduce a forward-looking scientific and technical stock.

4. 4 In this regard the key risk for Russia is narrowing of the opportunities to build a full-fledged NIS. In reality the Russian innovation system is peculiarly involved in global innovation systems and becomes dependent, thus acting as a scientific “donor” for NISs of the developed countries.

4. 5 Taking the above into consideration, the key trend of technological modernization for the Russian economy should be solving of the country *re-industrialization* task and restoration of its industrial and technical base. This is related to the fact that formation of an innovation sector that would be independent on the global innovation system, in its turn, is impossible without reproduction of an advanced production and technical basis, machine building and, first of all, high-technology industries. For this purpose Russian SHTC should be used as a basis for development, initial implementation and adaptation of critical foreign technologies and restoration of the Russian NIS to renew the machine building industry as a processing industries “kernel” on a new technical basis.

4. 6 All the above-said makes it clear that creation of a national innovation system is impossible without a preliminary secondary modernization (restoration of the national economy and formation of social layers that will consider the existing state and country’s economy their own). In other words, modernization is a process related to the global capital movement transforming social relations to create nations. We consider the key aspect of modernization to be *formation of the countries’ economies on the basis of established national capitals* being independent of the global capitals. It is important that we should not try to catch up and compete with others in the areas where Russia dropped behind forever in the foreseeable future (e.g., light motor vehicles, a large part of information and communication technologies etc.)

4. 7 From this point of view mid-term and long-term technological modernization should take place mostly in the following main areas:

– development of transportation and infrastructure (with a focus on aerospace and ship building technologies and railway transport);

– power machine building, including development of nuclear power;

– low-waste and energy-saving technologies for processing operations in the extraction sector (oil and gas production, metallurgic complex and forestry).

The key conclusion of this report is that modernization processes of the Russian economy and their constituent part – industrialization (using a new technical base), including restoration of a high-technology operations complex, are the main necessary pre-requisite for directing the national economy towards innovations.

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FINANCIAL CRISIS IMPACT ON LIQUDITIY IN BANKING SECTOR OF BOSNIA AND HERZEGOVINA

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Abstract

Liquidity is important segment of banking operation and important factor in managing confidence in banks. Liquidity in banking sector of BH is significantly change under pressure of withdraws some portion of saving deposits and undermined confidence to bank. Ability to serving deponents and providing loans shows banks' liquidity. Problems in these banking activities indicate liquidity risk. So, it is important to analyses the current situation and behavior of liquidity and liquidity risk in the banking sector in condition of financial crisis. In term of financial crisis, it is important to follow indicators about liquidity (liquidity assets/total assets, loans/deposit, total deposits, and maturity structure of deposits).

Key words: *banking sector, liquidity, liquidity risk, Bosnia and Herzegovina.*

1. INTRODUCTION

Banking sectors in Bosnia and Herzegovina presents key part of financial system. Total banking assets in GDP of BH (banking intermediation) is about 90%. That information show how banks have major role in financial intermediation. Also it is obviously how national economy and their segments depend of banks behavior in financial crisis. National economies sectors (firms, households and public sector) depend specially from volume and direction of bank' credit activities. So liquidity of banking sector is important for factor for function of national economy.

Banking market in Bosnia and Herzegovina records change in structure of banking market (consolidation, concentration, domination of foreign capital, competition). Banks are faced with increasing liquidity risk content in decreased new credits and existing borrowers determinate with deteriorate national macroeconomic condition and global economic condition. On other side, deponents in situation of losing confidence in banking sector

Market structure of the banking sector of Bosnia and Herzegovina has been analyzed through a series of indicators of banking sector: the number of banks, banking intermediation, concentration, foreign ownership in second part. Authors in the third part observe effect of the financial crisis on the liquidity of the banking sector. The analysis is based on the time series of basic indicators of liquidity for the banking sector and their behaviour in terms of the financial crisis. Also will be analysed measure of monetary policy in purpose to improve liquidity in banks. At the end of paper we give conclusions.

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2. BANKING SECTORS OF BOSNIA AND HERZEGOVINA

The financial system of Bosnia and Herzegovina unitil 1990 has function in central planning economy. In central planning economy. As result of that business enviorment banks records banking crisis (accumulated bad loans). Rehabilitation of failure banks was carried out in two ways: design different models of bank rehabilitation and by opening the banking sector to foreign strategic partners (privatization).

After cleaning the bad loans in bank's assets bank start with strengthen the capital for normal operation. The process of capitalization was aimed to improve capital adequacy and liquidity of banks at the national level. Higher capital requirements put banks in front of process of mergers and acquisitions. Consolidation of the banking industry has a significant impact on the banking market structure and organization of banks, and exposes the market to dominance of large banks.

Table 1: Major indicators of banking sectors in BH

Indicators	2005	2006	2007	2008	2009	2010
Number of banks	33	32	32	31	30	29
Banking intermediation[6]	69.3	76.8	93.8	82.9	86.5	85
Foreign capital in total capital	67.6	73.0	83.0	87.0	89.2	80
HHI	919	926	890	973	999	-

Sources: CBBH, Annual reports, different years.

Banking intermediation indicates the role of banks in achieving the core functions – the accumulation and allocation of money resources. Analyzing banking intermediation we can see trend of financial deepening and intensive banking activities. Financial crisis has slowed down banking intermediation in 2008.

A high share of foreign capital is the result of the privatization process in the banking sector. More than 60% banks capital in banking sectors is owned by Austrian banking groups. The high share of foreign owned banks in total banking sector assets indicates the dependence and sensitivity of the domestic sector to change in policy and decisions of foreign-owned banks.

Concentration can be defined as mergers, acquiring of control or owner influence through majority shares or voting rights in the assembly of the bank. HHI for banking sector BH indicates the growth of concentration and show a significant concentration. Concentration ratios CR5 in BH was 61% in 2009 and indicate exposure of banking sector to small number of banks. Specifically the nation economy depends on the activity of BH five largest banks in the sector.

Total assets of the banking sector in BH at the end of 2011 amounted to 12.1 billion euro and compared with the situation at the end of 2010 recorded increase of 0.09%. In assets structure dominate loans in amount of 65% in BH bank balance. Bank in last two year are faced with reduced

[6] The share of domestic bank's claims on the private sector of banking sector assets and GDP is the most common approach in the financial literature when we measure and compare degree of banking intermediation.

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demand for loans as result of financial crisis which has reduced creditworthiness of existing and potential new customers. During 2011 there has been a weak increase in deposit in amounts of 3.69%. Banking sector in BH was faced with withdrawal of deposits in 2008. Important source of fund for banks were borrowings from foreign financial institutions. The structure of assets and liabilities indicate importance of loans in assets and deposits in the banking sources in the banking sector. The loan structure is dominated by loans to other sectors (household), while in the structure of the source dominate deposits in foreign currency. The structure of assets and liabilities are visible sources of risk for banks – credit risk and liquidity.

3. LIQUIDITY OF BANKING SECTORS IN BOSNIA AND HERZEGOVINA

Banking sector with 81% share in total assets of financial sector in BH is dominate source of financing through which is satisfied demand from economy and households. So it is important to have stabile banking sector. Stability of banking sector presents possibility that it will not get into a situation of insolvency[7] in the future. So it is important to review distribution of assets and liabilities of the banking sector through different indicators. Liquidity is important segment of banking operation and important for managing confidence in bank.

Liquidity of bank is bank's ability to meet all financial requirements of its clients and provide additional sources for obtaining the necessary funds of the bank. Adequate liquidity in the bank is bank's ability to ensure quickly and without excessive cost to obtaining additional funds by increasing liabilities, securitization, sale of assets or otherwise. Definition of liquidity from bank point of view might be: "Liquidity is the process of converting smooth cash (deposits) in non-loans and loans, or converting receivables into cash by managing inflows and outflows. It can be agreed that the concept of liquidity in the bank means smooth execution of payment orders issued by clients and owners of funds deposited in banks and fulfilling the obligations created by providing loans. The complexity of managing liquidity is determinate by the nature, size and complexity of banks activities.

In the order to manage quality of liquidity risk, it is important to know the structure of assets and liabilities of banks to diversify funding sources and analyze the ability to access the inter-bank market. Therefore, the bank should monitor the situation and trend in its assets quality, planning earnings, the banking market, the source and maturity as well as the cost of deposits. Information about bank liquidity can be obtained through bank assessment of need for bank's liquidity (cash flow analysis or stress test) reports of large depositors, gap cash flows, statement of the medium maturity sources. The gap created between assets and liabilities can be assessed on a daily basis, one or two weeks, and six months to a year or quarterly.

Liquidity in banking sector of BH is significantly change under pressure of withdraw some portion of saving deposits and undermined confidence to bank in period of strong effect of financial crisis. For analyzing liquidity risk and situation in BH banking sector we should look for changes in three indicators of liquidity. First, ration between liquidity assets in total assets of banking sector in BH for period from 2005 to 2011. Liquidity assets present bank's cash and reserve requirements hold at central banks.

[7] Assets of banking sector aren't enough to cover all liabilities.

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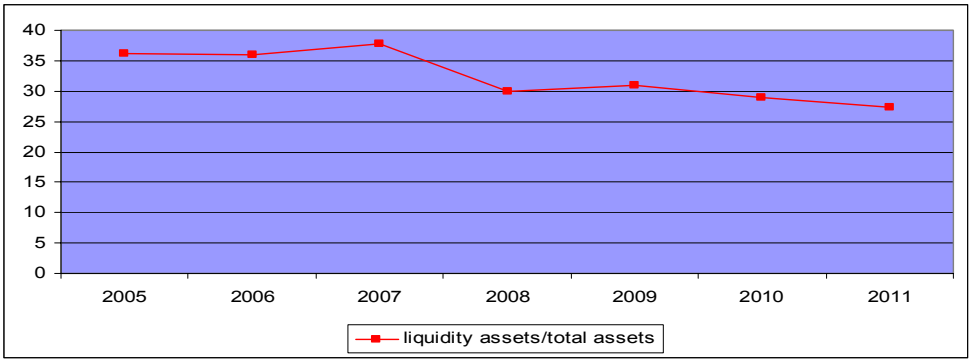
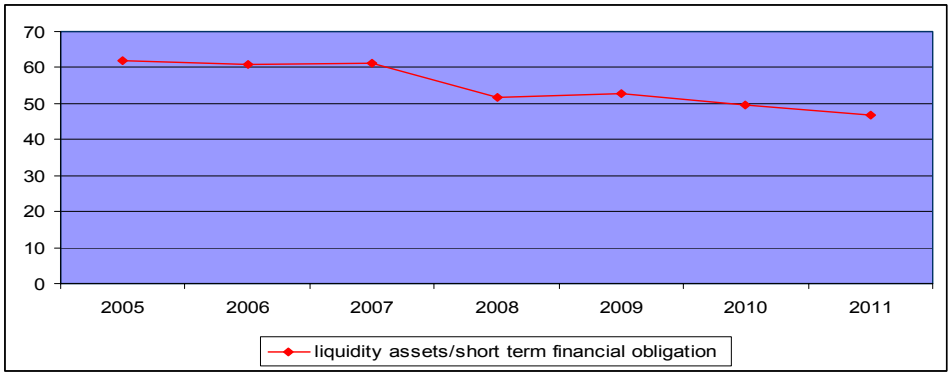
Graph 1: Liquidity assets in total assets in banks of BH (in %), 2005-2011



Sources: Central bank of Bosnia and Herzegovina, Annual report, different years.

Graph 1 shows how share of liquidity assets in total assets of banking sector record decreasing from 2007. Reason for this trend is in losing confidence in banking sector. Decreasing this indicator presents lower ability to satisfied clients' requests. Same trend record share of liquidity asset in short term financial obligation of banks. This ration presents indicator of current liquidity position of bank.

Graph 2: Ration of liquidity assets and short term financial obligation banks of BH (in %), 2005-2011



Sources: Central bank of Bosnia and Herzegovina, Annual report, different years.

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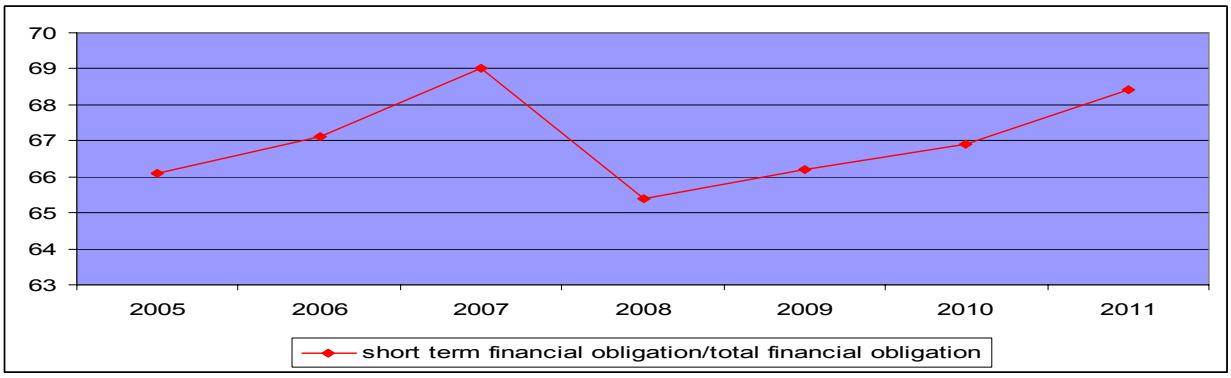
Graph 3: Ration of short term financial obligation in total financial obligation of banks of BH (in %), 2005-2011



Sources: Central bank of Bosnia and Herzegovina, Annual report, different years.

Graph 3 present increasing short financial obligations in total obligation which indicate increasing liquidity risk. Banks must ensure additional financial source or secondary reserve for covering planning and unplanned requests.

In bank-dominated financial system financial crisis have stronger impact on banks' liquidity. In this situation question of deposit safety is open. Even deposit insurance system exist, banks record withdrawal of deposit as result of losing confidence in stability of banking sector. Reasons for losing confidence are: limited amount of insurance deposit, withdrawal deposits from healthy banks, time need for dispose deposits if banks record failure, suspicion in state credibility and etc. Indicator of liquidity in banking sectors shows decline liquidity. Slight declining is result of faster credit increasing than the deposit growth.

4. MONETARY POLICY AND LIQUIDITY OF BANKING SECTOR IN BOSNIA AND HERZEGOVINA

Deposit as major part of sources of banks' funding in financial crisis in BH record change. In countries with market-oriented financial system, banks liquidity increased because investors their money hold in deposit insure by state instead invest on financial markets. But in bank-dominated financial system financial crisis have stronger impact on banks' liquidity. In this situation question of deposit safety is open. Even deposit insurance system exist, banks record withdrawal of deposit as result of losing confidence in stability of banking sector. Reasons for losing confidence are: limited amount of insurance deposit, withdrawal deposits from healthy banks, time need for dispose deposits if banks record failure, suspicion in state credibility and etc. Major decline in amount of total deposit was recorded in last quartile in 2007. and in first quartile of 2008.

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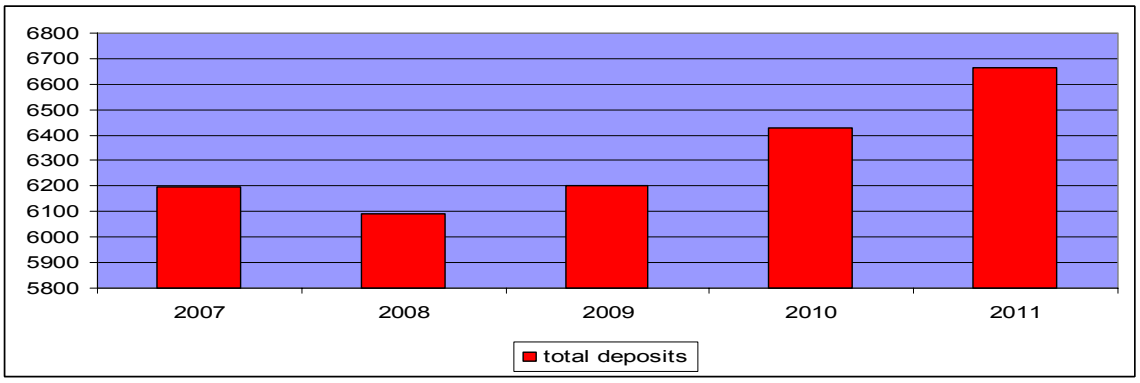
Graph 4: Total deposits in banking sector of BH, 2007-2011



Through reserve requirement rate manipulation and changing requirement base in process of calculate reserve requirements CBBH manage liquidity in banking sector of BH under effect of financial crisis. In table 2 we show changing in reserve requirement rate in BH in period 2000-2009.

Table 2: Manipulation of reserve requirement rate in BH 2000-2009

month, year of change	Reserve requirement rate - % change Reserve requirement base
1. January 2000.	5
1. January 2001.	5
1. January 2002.	10↑
1. June 2003.	5↓ expanding base on deposits in foreign currency
1. September 2004.	7,5↑
1. December 2004.	10↑
30. November 2005.	15↑
28. November 2006.	18↑
18. October 2008.	14↓
1. January 2009.	differential reserve requirement 14 - for deposits with maturity to 1 year 10 – for deposit with maturity from 1 year
1. May 2009.	differential reserve requirement 14 - for deposits with maturity to 1 year 7 – for deposit with maturity from 1 year From reserve requirement base exclude state deposits for

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	development
1. February 2011.	differential reserve requirement 10 - for deposits with maturity to 1 year 7 – for deposit with maturity from 1 year From reserve requirement base exclude state deposits for development

Source: Authors.

From table 2 we can see activities CBBH in period 2004-2008 in purpose to restrict credit expansion in BH through increasing reserve requirements rate. Having in mind currency board limitation in using instruments for monetary policy as a solution for credit expansion, it is necessary to use combination of required reserve and prudential regulation. Also, with financial crises developing CBBH start to decreasing reserve requirement rate and on that way make easy to commercial bank to deal with increasing need in liquidity. Last change of reserve rate is result of attempt to ensure through banks cheaper money to real economy.

In this situation and with undeveloped money market, banks must ensure adequate liquidity and involve best practise in managing liquidity risk. CBBH must supervise situation with significant reduction of foreign exchange reserves which can negatively impact bank solvency. Developed capital markets can protect the economy from some global financial shocks by providing them stable and secure sources of liquidity. Specially, central bank in cooperation with the Ministry of Finance and public agencies has important role in developing the domestic money market (Treasury bill market) and domestic debit market - government securities market (Živko, Slijepčević, 2006, pp. 137). CBBH with Banking Agency on entity level must continuously supervise expose domestic banking system to condition on home banking markets "contingent risk" and calculate stress test.

CONCLUSION

Bosnia and Herzegovina record changes in structure of banking market (consolidation, concentration, domination of foreign capital, competition). As major part of financial system it's important to analyses impact of financial crises on banking sector and their liquidity and liquidity risk. Results of analyses show stability of banking sector in BH. Effect of financial crisis on banking sectors we can find decreasing major indicators of liquidity and increasing liquidity risk.

CBBH help banks to manage liquidity. In purpose to effort liquidity of the banking sector and enhance economic activities in BH, CBBH in last two years three times decline rate of reserve requirements and basis for calculation reserve requirements.

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WOMEN IN BUSINESS

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Abstract

The aim of this paper is to present the role of women in business and its evolution in Romania, comparing with other countries. As a research methodology, we have used analysis, synthesis and comparison of different systems regarding the role of women in the economic field. In our country, the percentage of women in the main positions in firms or generally in the economic life is rather low, comparing to other countries more developed than ours. The tendency is of an increase of this proportion, but figures are still at a low level.

Key words: *women, management, business*

1. INTRODUCTION

Though the image of women in business in Romania is still controversial, recent studies show that they occupy more and more top and middle management positions. The opportunities grew after our integration in European Union, during a continuous process of globalization. According to a study of Corporate Women Directors International organization (CWDI), women are still discriminated when it comes to be part of the management of large companies in the world.

Siveco Romania together with Mediafax realized a study on a 300 sample and concluded that 45% of business women from our country said that they had encountered discrimination at work and 90% believe that Romanian women are able to successfully combine the personal and professional life and can be a deciding factor influencing the organization or society.

Most women believe that self-knowledge, continuous improvement and personal development are important factors that help women in career. On the other hand, participants in the program have found that work, ambition and competence are the basic ingredients of a successful career.

Dana Patrichi, managing partner at the headhunting company Alexander Hughes Romania, tells startups.ro that, in general, business women in our country are between 25 and 35 years and launch companies based on a personal dream, not being very pragmatic. Instead, they become very emotional leading their business.

Center Partnership for Equality realized a lot of studies regarding women in organizations and their abilities for leading. So, women face difficulties to reach a management position not only because of an old mentality, but also because of their self-confidence lack. Business women are discriminated when they are to be promoted.

The evolution that occurred in countries like Romania, for example, regarding women in management positions is the expression of the economic and social progress in recent years. Usually, the leading style of women is rather different than that followed by men in business. Distinctive features guiding

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men are autonomy, independence and competition and for women, they are linkages, interdependence and cooperation.

Business women usually refuse to follow the traditional model, created by male entrepreneurs. A typical structure of enterprises run by women is *cloth of spider* within which each is closely linked to the others; everyone is a potential aid for the others. Women business leaders are feeling better if she is at the center of events, and not if she stands alone, on top of the pyramid.

Women confirmed their ability to lead and showed that can make a significant contribution to human wellbeing. Women business from developed countries today plays an important role in creating businesses, new jobs and consolidates a normal society.

2. ETHICAL CONSIDERATIONS REGARDIN WOMEN IN BUSINESS

Aigner and Cain (1977) consider that discrimination based on gender is a consequence of group discrimination. The two authors define discrimination as the situation in which *average salaries are not proportional to average productivity*, in other words: *the groups with the same average productivity do not receive the same average compensation*.

Generally discrimination appears when some individuals that have a certain feature (for instance belonging to a certain religion, race, and gender) are discriminated against because of this no matter what their labor productivity might be (Dobre, Trasca, 2008).

The main ethical issue regarding the evolution of women in business in our country but not only is discrimination. If we can say that, discrimination is maintained both by men and women, because a lot of women do not have self confidence and are afraid just to try to lead. Of course, there are also a lot of examples of women that succeeded in business and represent a good example to be followed by the other women.

Often, there is not a difference of training or competencies between men and women, but of confidence, self-esteem and attitude of a winner and leader. The concept used for encouragement of hiring also women in top or middle positions is gender diversity.

In 2011, in Romania, there was conducted a study regarding discrimination in our country – *Profiles of chances inequity in Romania, causes and effects*. Data collected from the entire surveyed population tend to show that the majority of respondents (45.8%) believe that recruitment discrimination against women is registered. Of these, 9.8% consider this problem as generally valid, while the remaining 36% report such cases to be sporadic (Table 1).

Table 1. Are women discriminated in recruitment?

	Frequency	**Percentage**
Yes	147	9.8
No	627	41.7
Sometimes	541	36.0
I do not know	180	12.0
I do not answer	7	0.5
Total	**1502**	**100**

Source: Profiles of chance inequity in Romania, causes and effects, September 2011

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As it was expected, men (52.6%) deny the existence of gender discrimination in employment in a higher proportion than women (36.1%). This can be explained because men are not directly under the pressure of discrimination and they are not completely aware of the problem.

Regarding prospects for career promotion, the share of respondents that women are disadvantaged compared to men is even greater. Thus, 53.1% of respondents stated that women face barriers to career promotion and 37.8% of respondents said that such obstacles are encountered sometimes (Table 2).

Table 2. Face women difficulties to promote?

	Frequency	**Percentage**
Yes	223	14.8
No	575	38.3
Sometimes	568	37.8
I do not know	128	8.5
I do not answer	8	0.5
Total	**1502**	**100**

Source: Profiles of chance inequity in Romania, causes and effects, September 2011

Share of respondents thinking that there is no difference in treatment between men and women at this level is 38.3%, while the volume of non-responses (do not know / no answer) rises to significant levels (9%).

Another important ethical issue regarding activity of women in business refers to verbal or sexual harassment at the workplace. According to a study realized by IMAS in 2007 in four towns: Cluj, Bucharest, Constanta and Iasi, 12% of the respondents said that they were harassed in the last year at the workplace, but very few of them adopted any solutions excepting the avoidance.

3. SITUATION IN OTHER STATES

Recent European studies found that the most friendly business environment for women is Norway: from 2008 all stock-oriented firms have the obligation to provide them 40% of management positions.

According to a study of Mercer on 40 countries in 2010, Romania is placed on an 8 place regarding the positions of top management held by women. 34% of management positions belong to women in our country. The worst situation is in Saudi Arabia where no single leading position is held by women. This is explained by the culture and traditions in the region.

But countries like Holland (19%), Germany (20%), Austria (21%) and Italy (22%) are under the percentage of Romanian regarding percentage of women in management positions. Women are most likely to promote on management positions in Lithuania (44%), Bulgaria (43%) and Russia (40%).

Figures for the Netherlands suggest that a country is very conservative in its approach to equality in the workplace. It is a conservative nation, like Britain, where a high level of women is working part-

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time. Part-time is a major determining factor of the small number of women occupying leadership positions and are avoided at the time of promotions.

The nine countries with the best representation of women in management positions are ex-communist countries. Specialists of Mercer consider that equity maintained from the communist period when women were encouraged to be involved in society and economy as well.

In Romania there are corporations that have policies on workforce diversity, but their share is not significant and, unfortunately, till now, legislation is not given much attention compared to other countries.

Some institutions encourage through different instruments the evolution of women in business and development of their careers. So, in February 2012, Garanty Bank announced that will finance small and medium enterprises, especially those owned or managed by women, as a part of a finance agreement with International Finance Corporation.

Financing packages for women entrepreneurs offered by Garanti Bank include two main components: a flexible loan for company with attractive commissions and a product specifically designed for women - Bonus Card credit cards with a mirror.

Regarding differences in remuneration of men and women in different countries, the study revealed that in Germany, women occupying the highest positions in the company earn 22% less than men holding similar positions in terms of total remuneration, taking into account bonuses. Differences are lower when talking about the basis salary. In the case of Germany, this is of 10%.

This tendency is also met in countries like Austria (-20%), Sweden (-19%), Spain and Greece (-18%), Holland (-14%), Romania (-14%), Denmark (-12%), Ireland (-10%), Italy, Finland, Britain and Portugal (-9%), Norway (-8%), Switzerland (-7%) and Belgium (-6%). Women receive as a total remuneration 5% more than men with similar positions in Bulgaria and 3% in Russia.

4. SUCCESFUL BUSINESS WOMEN IN ROMANIA

There are many examples in world and in our country also that show women can be good leaders. In the following paragraphs, we will present some of the successful stories in Romania in the business field.

In the book *Women in business: the changing face of leadership*, Hogue Werhane (2007) presents the cases of succesful business women in the world. It grasped our attention a case of a woman called Adela Cepeda. So, we better understood that problems and obstacles that women face with in business life are more complex.

Adela Cepeda tells about difficulties of being a woman, a young woman and also a Latina woman. Her success came from her trust and confidence in her capacities, but that does not mean to say you have all answers, because you do not have.

Camelia Sucu

Camelia Sucu is a business woman very well known and her name is synonymous with business success. Her career began with her ex-husband, Dan Sucu, with whom she built Mobexpert. After their divorce in 2007, Camelia left Mobexpert business for about 40 million euros. At present, she owns Natuzzi store and luxury furniture retailer Class Living.

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She says that "you have to love family and job; you have to accept that to gain something you lose something, it's very important to feel good about yourself and your taking time to relax and love". The success in economic area did not have a negative impact on his personal life. She is a beautiful woman with two daughters.

According to AgroBusiness, Camelia Sucu is interested in making a real commodity market; she works with the Ministry of Agriculture to develop a recovery plan for a collection system for producers' fruits and vegetables. Recently, she realized that there is deficiency in beef market not only at us, but also in Europe - about 500,000 tons.

So she came with the idea to invest in a farm cottage in Transylvania. Although currently she is not interested in agricultural land, it is possible that in the future to buy some fields, with the condition of being compact and in good areas.

Mihaela Stanoiu

She occupies the position of Marketing Manager of Samsung in Romania and Bulgaria from the end of 2009. This implies a great responsibility for her as a woman with family, also being the mother of a fourteen girl.

The business woman talks about the difficulties to coordinate the Bulgarian market from distance, because the markets are similar and do not raise other problems. She takes into consideration not only financial objectives, but also the concern for the environment and fights against pollution. This direction is integrated in Samsung policy at a worldwide level.

In researching the theme of environmental ethics, we found in the book of Light (2003) that there is a term called ecofeminism. This concept refers to the twin oppressions of women and nature and similarities of their life in a world mostly dominated by men.

The activity of Mihaela Stanoiu in managing positions at Samsung Electronics is not the first of this kind. Before of this, she was Head of Communication Planning within Starcom Media (part of Leo Burnett Group). Although there are two different industries, there are quite a few similarities between them, such as rate of development of new products to market.

Her family life is full; she has a girl, with whom she spends a lot of time, she likes to travel and go shopping, she was also a teacher at Economic Studies Academy in Bucharest and learned a lot of interesting things from her students.

She tried not to sacrifice family to career and made a family from an early age. This made her very happy and content with her life even that does not mean this equilibrium between family and profession is easy to be realized.

Rucsandra Hurezeanu

She graduated Medical Faculty in 1996 in Bucharest and after working many years as a sales representative in pharmaceutical field, Marketing Manager or Business Unit Manager, she founded her own company in 2006, Ivatherm, the first Romanian company of dermatocosmetics. With her experience in Europe and encouragement of her mother (also entrepreneur), Rucsandra Hurezeanu developed a local brand that became a powerful and successful brand.

In an interview of FIA (Femei in afaceri, in English translation Women in business), she says that presence of women in business is getting bigger and this phenomenon is welcome because it brings color and warmth to this competitive environment, tough and neutral. But she considers that success at

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early ages like 20 or 25 years is very difficult, because you do have neither experience, nor the studies needed.

Her management style is based on delegation of authority to members of her team, and she involves especially in research and development projects. She tried to create a strong organizational culture in her company. She also has a family, two kids and did not forget about our country in promoting its business, because Ivatherm products use Herculane water, good for sensitive skin. For her as a woman, it was normal to create her own firm, because in her family, women are entrepreneurs not men.

Oana Nastase

Communication adviser of Bucharest Stock Exchange and current director of corporate affairs of Rompetrol, Oana Nastase was named the most active business woman at the Successful Women Gala in Romania in 2011. Being at the seventh edition, the event is organized by Professional Celebrity and Chamber of Commerce and Industry of Romania and every year awards the most active business women in areas such as politics, diplomacy, music, fashion, television and so on.

Oana Nastase has over twelve years of experience in national and international communications, corporate relations, corporate responsibility, social engagement and social entrepreneurship, media, marketing, advertising, project and business management.

At Rompetrol, she deals with the corporate social responsibility of the company. There are competencies that are easily developed by women and one of these it is communication and the profession of being a communicator.

Her activity is not limited to that in Rompetrol, she involves in many social responsibility programs. So, together with Valeria Racila Van Groningen, a multiple European champion, she organized Bucharest Marathon, promoting ecological education and sports education. The National Programme *Impreuna pentru fiecare* (in english *Together for each other*) implemented within Rompetrol by Oana Nastase was also awarded as the most innovative program of grant making.

Maria Grapini

She is Chairman of the company PASMATEX, president of the Entrepreneur Association in Romania, has the same function in the Employers Federation of Light Industry in Romania (Romanian acronym FEPAIUS). Is also the Honorary Consul of India in Romania, Honorary President of the Association of Senior Citizens in Timisoara, vice president of the Conservative Party and chairman of the Foundation “Hope for You”.

She also has a management style based on delegation and involvement in social projects. She tries to influence public politics through her political activity. She defines herself as correct and professional. From her interviews for different magazines, we found out of the difficult road to success. She faced with the old mentality according to which men are superior to women in business or even as simple specialists at a workplace.

To realize equilibrium between career and family, there has to exist confidence and support from your life partner. A woman is strong when professionally she is independent and has made her career on the professional training and has a moral standing in society and family.

There are much more examples of successful business women in all countries that respect women as human beings with thoughts, values, beliefs and dreams. We chose to present briefly just a few of these examples, from different areas of economic field.

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They all have in common their trust, confidence, experience, training, studies, a great capacity to communicate and involve in social projects and not at last, the capacity to have a family and create a balance between their work and life.

5. CONCLUSIONS

In conclusion, we can say that the emancipation of women in all areas from the right to vote to the position to lead a company was difficult for women, because of discrimination in recruitment, promotion. As women themselves declare, for many of them, discrimination was manifested at many levels. For young women, the way to their dream was longer. The words of Adela Cepeda from Colombia are memorable: *I am a woman, a young woman and a Latino woman*.

Specialists in sociology consider that discrimination is not so obvious in countries former communist, because this ideology encouraged women to work. That does not mean that their evolution was easy. From the image of a woman having the right to work and be paid for her work to the image of a woman leading a company, negotiating with other business men, there was a difficult fight and also a continuous one to permanently show what they can do.

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ROLE OF THE ELDERLY IN BUILDING SUSTAINABILITY OF PENSION SYSTEM

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Abstract

Regardless of the fact that Latvian pension system seems to be advanced and modern, recently we have been questioning sustainability of our Pension system. What is the reason? The discussions have been aroused by the various alarming economic and social processes, like decrease of social budget, economic crisis and breakdown, outflow of population (in particular manpower drain), bad demographics, inhabitants' agedness, illegal national economy and inconsistent pension politics (i.e. together with the frequent change of national government, laws are being amended too often).

The aim of the paper is research and analyses of the conditions of building a sustainable pension system through involvement of the elderly in the labour market. In order to achieve the established aim and tasks, the following scientific research methods have been used in work: analytical method, comparative method, historical method, logically and abstractedly constructive method.

Key words: *Pension system, sustainability of pension system, ageing of population, official retirement age, sustainability of labour market.*

INTRODUCTION

An adequate and sustainable retirement income for EU citizens now and in the future is a priority for the European Union. Ensuring that public policies cater for sustainable, accessible and adequate retirement incomes now and in the future remains a priority for the EU. While Member States share similar fundamental challenges, there are considerable differences in the timing of demographic ageing, the design of pension arrangements, the growth potential and in constraints on account of the fiscal situation and external competitiveness.

The projected increase in public spending due to population ageing poses an important challenge to EU Member States. Policy action to improve the long term sustainability of public finances while ensuring adequacy of pensions is crucial. People nowadays are healthier and live longer than ever before – the increase is up to two and a half years per decade. But altogether the demographics are declining - we have fewer children. If nothing significant changes, most people in the EU, as well in Latvia, will live very long lives with the life expectancy at birth for men increasing by 8.5 years and for women by 6.9 years.

Due to these circumstances, over the last decade most European countries have reformed their pension systems with the aim to retain its sustainability and adequacy. These reforms have brought important progress. But not all countries which ought to do it have actually succeeded. Besides, there are signs that ongoing reforms might create risks regarding both adequacy and sustainability, since changes in pension systems will tend to make benefits more contingent on developments in labour and financial markets not delivering as expected. Budgetary consolidation, which is more urgent after the economic crisis, is essential in order to reduce public debt and contribute to financing the future increase in public pension expenditure.

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As said before, adequacy and sustainability are both relevant and interrelated. Meaning, people need to work more and longer to ensure both. The existing pension systems, though different, each has its strengths and weaknesses - they all need to consider the demographic and economic trends. Their aim must be reaching balance between sustainability and adequacy. Due to the crisis and the decrease in economic growth, it is important to strengthen awareness of available routes to adequate income in retirement.

Regardless of the fact that Latvian pension system seems to be advanced and modern, recently we have been questioning sustainability of our Pension system. What is the reason? The discussions have been aroused by the various alarming economic and social processes, like decrease of social budget, economic crisis and breakdown, outflow of population (in particular manpower drain), bad demographics and inhabitants' agedness.

1. COMMON OBJECTIVES FOR PENSIONS

EU Member States (EUROPEAN ECONOMY, Koopman, et al.2010, pp.16) are committed to providing adequate and sustainable pensions by ensuring:

- **Adequate** retirement income for all and access to pensions, which allow people to maintain, to a reasonable degree, their living standard after retirement, in the spirit of solidarity and fairness between and within generations;
- The financial **sustainability** of public and private pension schemes, bearing in mind pressures on public finances and the ageing of populations, and in the context of the three-pronged strategy for tackling the budgetary implications of ageing.
- That pension systems are **transparent** and **well adapted** to the needs and aspirations of women and men and the requirements of modern societies, demographic ageing and structural change; that people receive the information they need to plan their retirement and that reforms are conducted on the basis of the broadest possible consensus.

Park (2009, pp.6) in an Asian Development Bank paper suggests that a well designed pension system will have the following characteristics:

- Broad – based in terms of both coverage and the range of risks covered.
- Sustainable over time in terms of its actuarial and financial soundness.
- Robust so that it can withstand macroeconomic and other shocks.
- Affordable from individual, business, fiscal and macroeconomic perspectives.
- Providing reasonable levels of post retirement income.
- Providing a safety net for the elderly poor.

This list suggests a multiple set of objectives for any pension system and, as Park correctly notes, different societies will need to decide on the relative importance of each objective at a particular time. Furthermore, these priorities are likely to change over time as a society's economic and demographic circumstances change. Furthermore, comparing these systems is

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certain to be controversial as every system has evolved from each country's particular economic, social, cultural, political and historical circumstances.

There is no perfect system that can be applied universally around the world. Palacios (1994, pp.3) of the World Bank in its influential report "Averting the Old Crisis" recommended a multi-pillar system for the provision of old-age income security comprising:

Pillar 1: A mandatory publicly managed, tax-financed public pension.

Pillar 2: Mandatory privately managed, fully funded benefits.

Pillar 3: Voluntary privately managed, fully funded personal savings.

As a rule, the best system for a particular country at a particular time must take into account that country's economic, social, cultural, political and historical context.

Most of European countries implement multi-pillar pension system, Latvia as well. Since July 2001 there is a three pillar pension system in Latvia:

- The first - state obligatory non-funded pension scheme;
- The second - state obligatory funded pension scheme;
- The third - private voluntary pension scheme.

2. AGEING OF THE POPULATION

With the financial crisis and the economic downturn, EU countries, as well as Latvia, had to assess the short- and longer-term impacts on the various elements in their pension schemes. The crisis adds to the economic impact of demographic ageing, which has been much faster than expected, on pension provision, although the consequences will critically depend on the depth and length of the downturn. The budgets, capital markets and companies, all have suffered during the crisis. This has led to major structural changes in national pension systems, for instance, turning from the traditional Pay-As-You-Go (PAYG) system to funded pensions and eventually more risks to individuals.

The demographic trend that the countries all around the world, especially the developed countries, are facing today is ageing population. The average life expectancy is increasing, and the elderly are living longer lives.

As noted by professor Alan Walker from the United Kingdom, Sheffield University: "In fact the main issue for pension funding is not population ageing *per se*, but its combination with changes in birthrates, the structure of employment, and the practice of retirement. In a very short space of time there has been a major restructuring of the life course in most EU countries resulting from the truncation of employment prior to pension ages. In some EU countries this was a trend openly encouraged by public policy. Thus, paradoxically, as longevity has increased, the age at which people exit from Economic activity has fallen."

In Figure 1 the old-age dependency ratio in the EU27 is displayed. The ratio shows the population of people over 65 to working age (15-64) between years 2008 (in the Figure - actual, blue) and 2060 (in the Figure - projected, red) (Zaidi 2010). It can be seen that there has been a shift from 25% in 2008 to 54% in 2060, which is an enormous growth. The impact of this sharp rise of the old-age demographic

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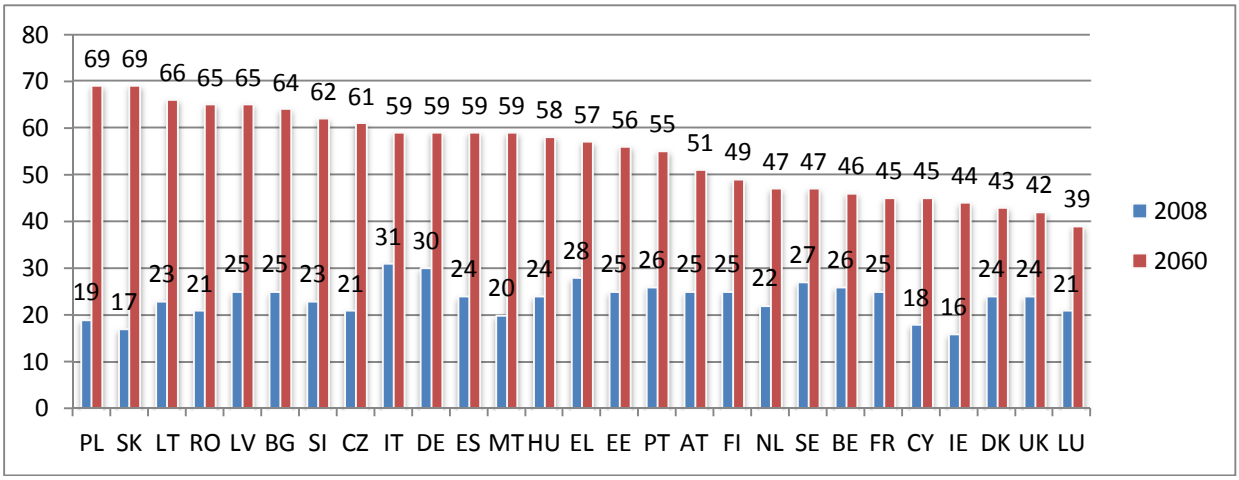
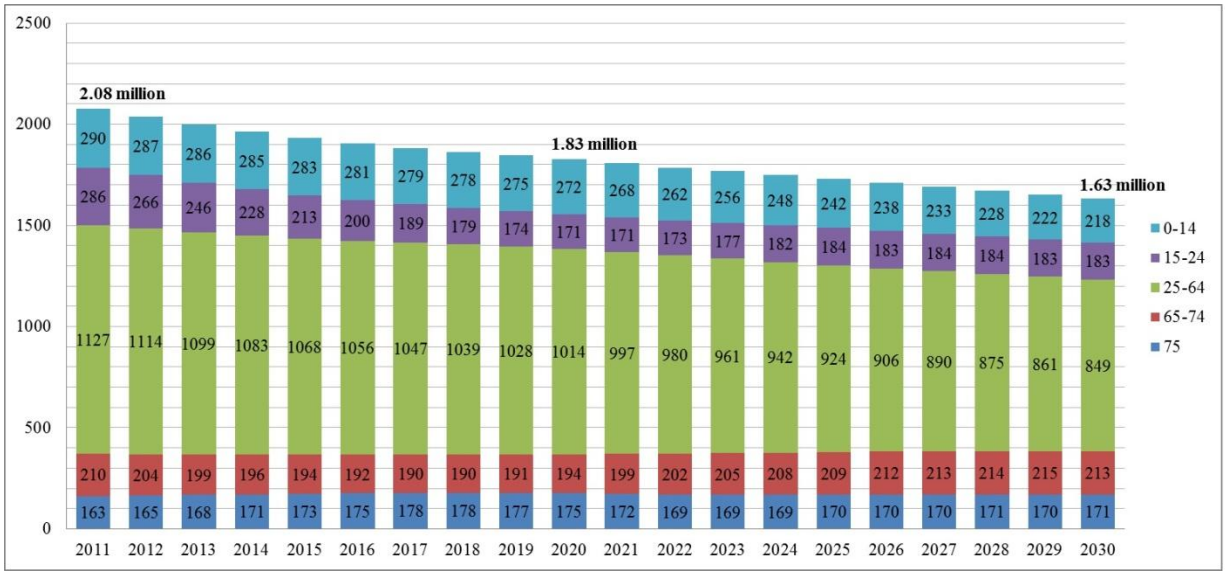
dependency ratio will significantly burden future public finances by rising expenses on pension, health and long-term care provision and as well will have bad impact on growth potential at national levels.



Sources: EUROSTAT, EUROPOP2008.
http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary: EUROPOP2008

Figure 1. Population Ageing in EU countries, 2008-2060, as given by the old-age dependency ratio (number of 65+/number of 15-64)



Sources: Ministry of Economics of Republic of Latvia. http://www.em.gov.lv/em/2nd/?lng=en&cat=3&lng=en

Figure 2. The number of population, age structure and dynamics prognosis 2011-2030

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The social policy, especially the pension system in Latvia and in other countries is inseperably linked to the state demographic and economic development. When the pension reform was launched, the Latvian demography was comparatively advantageous, but, as Hazan notes (2011), since then nearly 250 000 economically active people have emmigrated. Besides, since the 90s, there has been low birth rate which also added to the decrease in Latvian population As shown in Figure 2, with this tendency, the estimates show that in year 2030 there will only be 1.63 mil people living in Latvia. Besides, the ample cohort of people born in 1950 - 1960 will soon reach their retirement age.

According to the data of the Latvian Central Statistical Bureau, the life expectancy for both newborns and people above working age has increased. In 2010, the life expectancy for newborns was 73,8 years, whereas for men it was 68,8 years but for women – 78,4 years. After turning 65, the life expectancy for men was 13,2 years and for women - 18,1 years. Obviously, it is projected that this inscrease will continue. As a result, with the expansion of the proportion of old people and the decrease in the number of people in working age, the total demographic burden shall enlarge.

The EUROSTAT prognosis on Latvian demography made in 2010 show that the proportion of people above working age shall increase from 20.5% in 2011 to 38.6% in 2060 and the proportion of economically active people shall decrese from 65.8% in 2011 to 49.5% in 2060.

	1996	**2000**	**2008**	**2011**	**2020**	**2030**	**2040**	**2050**	**2060**
Under working age (0-14) %	20,5	18,0	13,8	13,7	14,9	13,0	11,9	12,3	11,9
Working age (15-61) %	57,2	58,9	65,6	65,8	62,0	59,9	57,2	51,2	49,5
Over working age (from 62) %	22,3	23,2	20,6	20,5	23,1	27,1	30,9	36,5	38,6

Sources: EUROSTAT, EUROPOP2008.
http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary: EUROPOP2008

Table 1. Age structure of the Latvian population

Due to the data of the Latvian Central Statistical Bureau, in the beinning of year 2011 there were 1466.9 thousand economically active people and 456.2 thousand poeple above the working age in Latvia. Hence, at that time there were 3.2 economically active persons on each pensioner. With this regard it is intersnting to note the prognosis of EUROSTAT (2010) – they say that in 2060 in Latvia there will merely be 1.3 economically active persons on each pensioner. The increase of the old age pensioners and the decrease of the socially insured have considerably burdened the social system.

In Figure 3, one can see the number of the listed pensioners (marked with blue line) on 1000 socially ensured persons and the number of peolpe above working age (marked with grey line) on 1000 economically active people at the beginning of year 2011.

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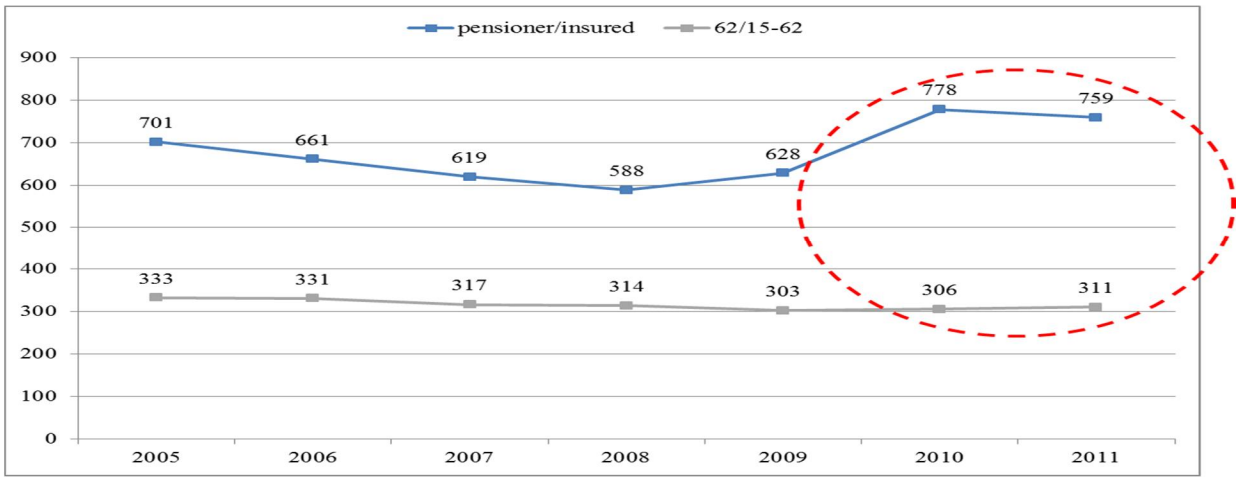
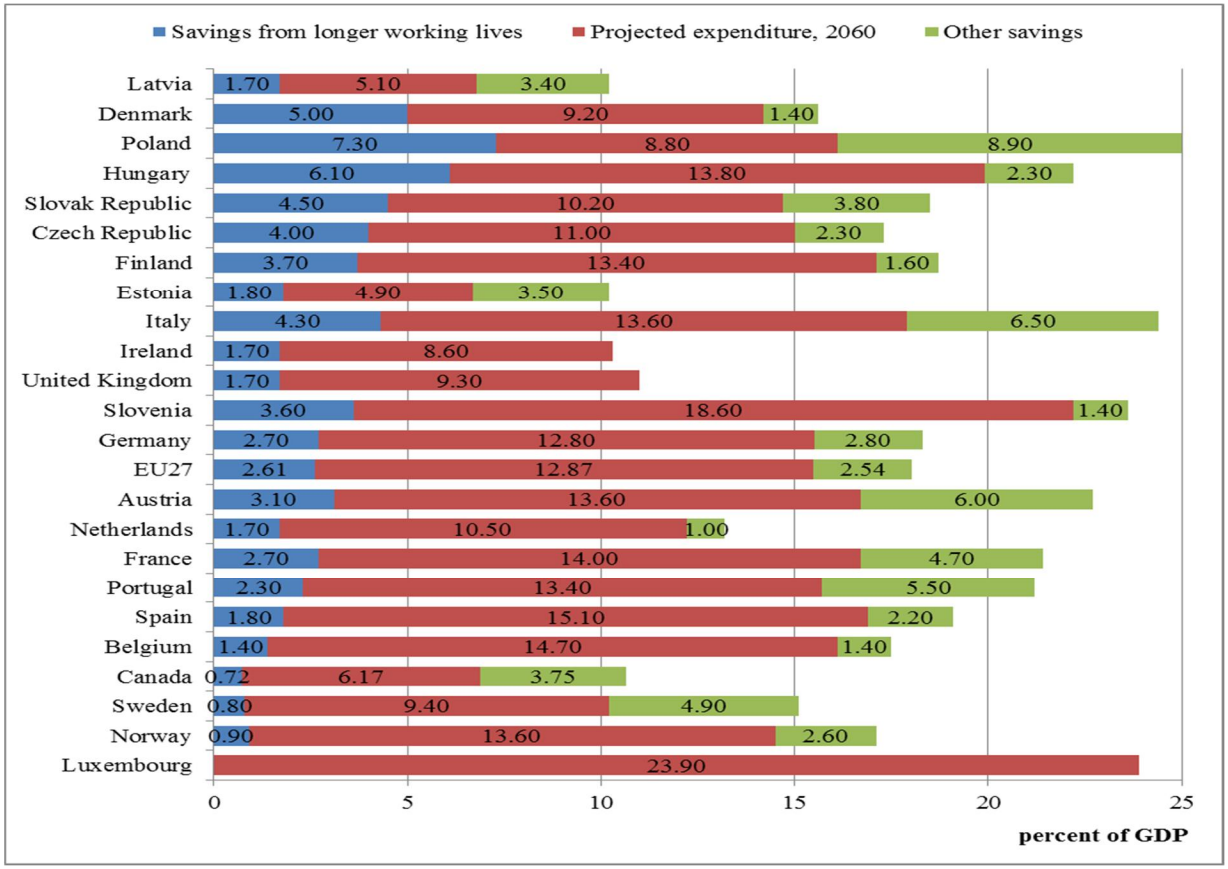


Sources: author's construction based on Statistics by Population and Social Processes of Latvia. http://www.csb.gov.lv/en/statistikas-temas/population-key-indicators-30624.html

Figure 3. Demographic and social insurance systems load



Sources: Pension at a Glance 2011. Retirement income in OECD and G20 countries. http://dx.doi.org/10.1787/888932370398

Figure 4. Decomposition of different effects on projected pension expenditure in 2060.

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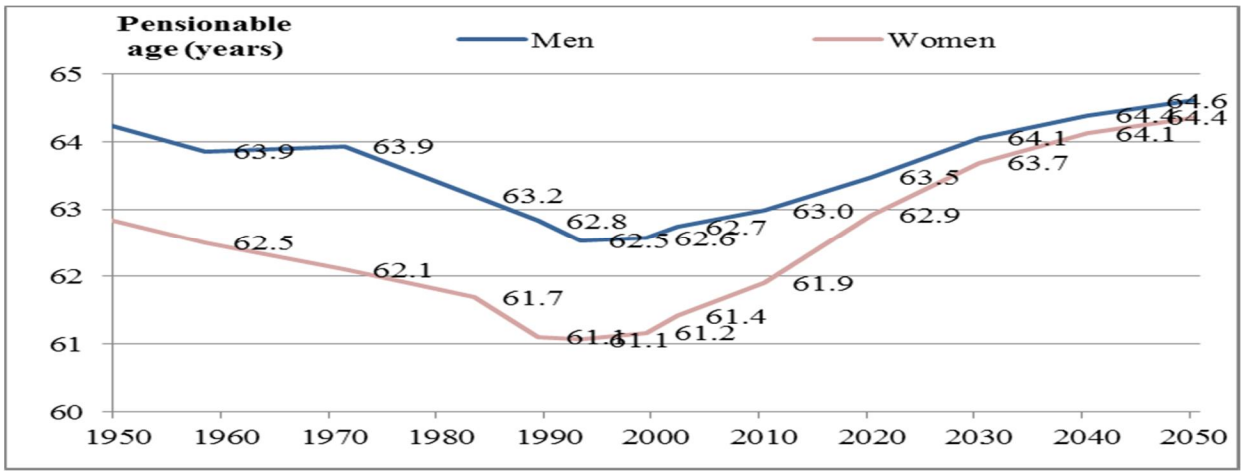
3. ELIGIBILITY FOR PENSION

In order to ensure sustainability of the Latvian social insurance system, the retirement age was raised, and in 14.06.2012. the national parliament Saeima passed amendments in law „On state pensions". In the middle of year 2012, in Latvia the official retirement age is 62 years, but as from the 1st of January, 2014 it shall be longer by 3 months. The gradual rise shall continue until in year 2025 the official retirement age will reach 65. The prolongation of the person's active working period, which is closely linked to the continuous growth of the average life expectancy, will eventually bring benefit in two directions – first, higher living standart and, second, more stable pensions.

The savings in pension spending from longer working lives is shown by the blue bars in Figure 4. The chart ranks countries: those with the greater reliance on longer working lives to ofset demographic pressures are towards the top. In absolute terms, longer working lives are expected to save 5% of GDP'S.

Rise of the official retirment age is topical not only in Latvia, but as well in the OECD and the rest of the EU. Figure 5 outlines the changes in retirement age throughout the OECD starting from year 1950. Until the 90s the official retirement age was gradually reduced, but as from the second half of the 90s it was increased. The author's opinion is that the current prognosis are too optimistic and the discussions on raising the official retirement age up to 70 and even more years are reasoned.



Source: Pension at a Glance 2011. Retirement income in OECD and G20 countries.
http://dx.doi.org/10.1787/888932370246

Figure 5. Average retirement age in OECD countries by sex, 1950-2050

Until now the following countries have decided to increase the official retirement age: in Estonia as from 2017 it shall be gradually raised to 65 years; the same in the Czech Republic during the period of years 2006 – 2030; in Germany during the period of years 2012 – 2027 the official retirement age shall reach 67 years; in Malta till 2027 the official retirement age shall be gradually raised to 65 years; in Netherlands as from 2020 it shall be 66 years and from 2025 – 67 years; in Austria during the period of years 2019 – 2028 the official retirement age shall be gradually raised to 65 years; in Slovenia it

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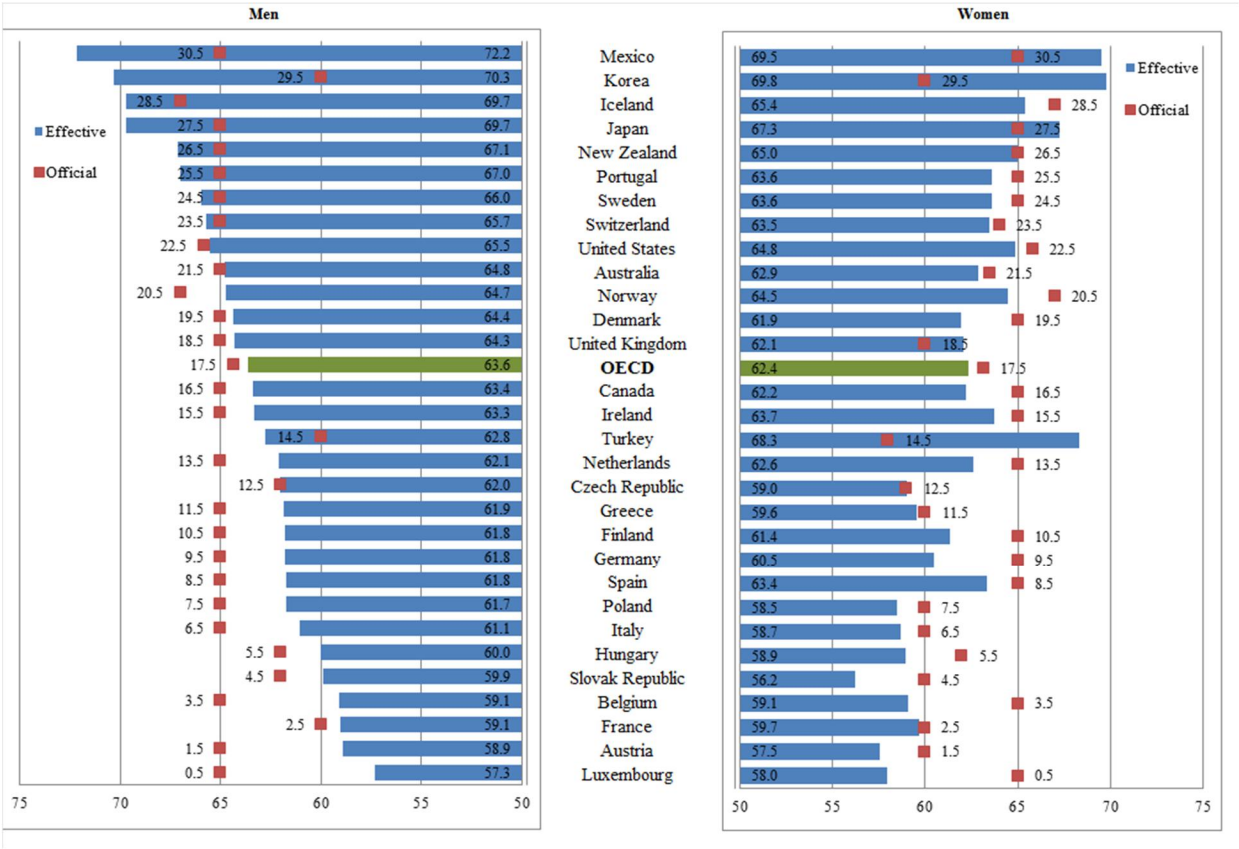
shall reach 65 years till year 2020; and in the United Kingdom during the period of years 2024 – 2026 the official retirment age shall be raised to 66 years.

Figure 6 shows, that the average age of exit from the labour force may therefore be different from the average retirement age. Most workers in most OECD countries leave the labour market before the official retirement age. Figure shows the recent average effective age withdrawal from the labour market, as well as pensionable, age in OECD countries for men and women. The men leave the labour market later than the pensionable age in 12 of the 30 countries shown, but the women leave the labour market later in 10 countries. The pension age is the most visible parameter of the retirement-income systems and it has an impact on the financial incentives to retire at different ages.



Note. Effective retirement age shown is for five-year period 2004-2009; pensionable age is shown for 2010.

Sources: Pension at a Glance 2011.Retirement income OECD and G20 countries.
http://dx.doi.org/10.1787/888932370341

Figure 6. Average effective age of labour-market exit and normal pensionable age

The same tendency is revealed by the current situation in Latvia. The studies show that a large part of the working population retires not at the time when the official retirment age is reached, but voluntarily several years earlier by making benefit of the so called early retirment option (which is

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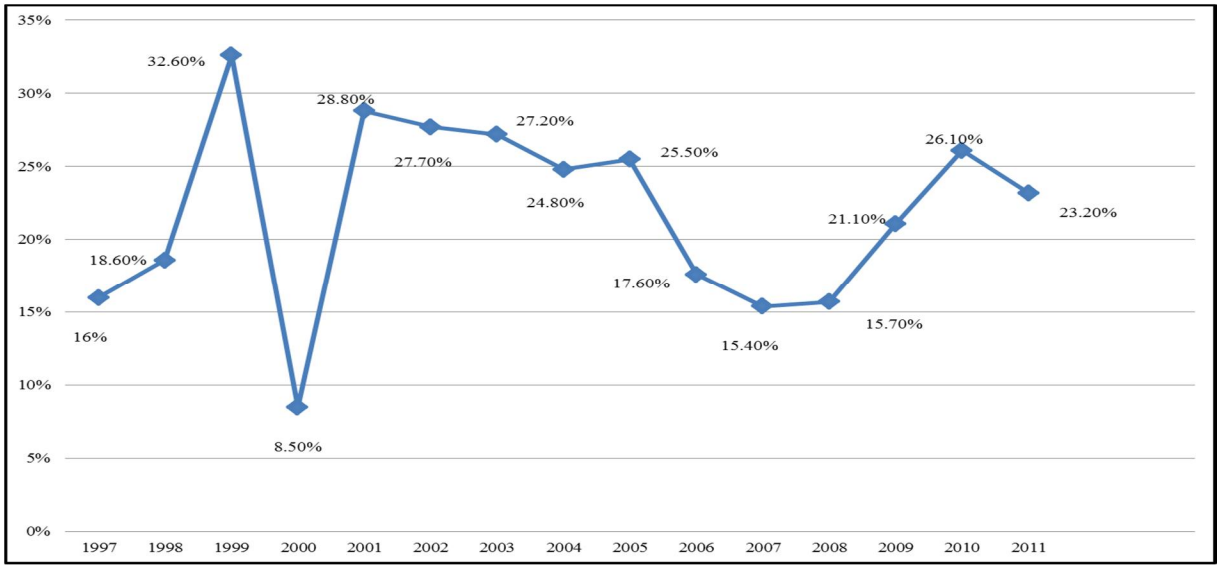
permitted by law) or due to health issues. Early retirment is tied to the economic condition of the country and legislative base regulating this institute. Both the deep economic crisis and the unclear future prospects have facilitated increase in the number of pensioners. In 2010, with comparison to 2007, the number of the granted old age pensions has grown by more than two times, whereas the early retirment pensions – even three times (see Figure 7).



Sources: author's construction based on data of early retirement.

http://www.csb.gov.lv/en/statistikas-temas/population-key-indicators-30624.html

Figure 7. The granted early retirment pensions from the total pensions granted (%)

By ensuring that the lenght of retirement, in comparison to the lenght of employment, does not increase, the current proportion can be preserved hence supporting the pension system.

4. SUSTAINABILITY OF LABOUR MARKET

In July 2010 the European Commission presented a Green Paper on the Future of pensions. The Green Paper reviews the European pension framework in a holistic and integrated manner, benefiting from synergies across economic and social policy and financial market regulation, which is why so many different topics are covered, such as: longer working lives, the internal market for pensions, mobility of employer insolvency, informed decision-making and governance at EU level.

In particular, it aims to address the following issues:

- Ensuring adequate incomes in retirement and making sure pension systems are sustainable in the long term.
- Achieving the right balance between work and retirement and facilitating a longer active life.

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- Removing obstacles to people who work in different EU countries and to the internal market for retirement products.
- Making pensions safer in the wake of the recent economic crisis, both now and in the longer term.
- Making sure pensions are more transparent so that people can take informed decisions about their own retirement income.

Asghar Zaidi (2010, p14.17) accentuates the importance of labour market policies as regards sustainability of pension system: "Some of the challenges for the labour market policies are obvious. They involve an improved (re-)integration of groups with typically low employment prospects, particularly women, older workers, disabled persons. Undoubtedly, a longer and less disruptive working career will promote both future sustainability and adequacy." For the EU countries, the challenge is encouraging older workers to stay in labour market.

Another author, Casey (2010) analyses the impact of raising the age of entitlement to an old-age pension towards adequate, sustainable and safe European pension systems. Raising of the age of pension eligibility has its impact upon the dependency rate effect (population 65+/population 15-64, the coverage or eligibility rate effect (pensioners/population 65+), the employment rate or labour market effect (workers/population 15-64) and the benefit ratio or generosity rate effect (the average pension/the average wage). As a result, raising of the age of eligibility reduces the number of pensioners and increases the number of workers. The conclusion is that keeping the elderly in the labor market is the basis for the sustainability of labour market and, in total, the pension system as a whole.

Mrs. Quintin (2001 - 2002) has stressed two lessons to draw from the reforms across Europe that have not lost their topicality even 10 years after their formulation, both implicitly related to the launch of a European coordination:

1. Policy makers have to learn from each other, in that they share the same objectives (building solid pension schemes), face the same problems (the imbalance between active and inactive part of the population), and comply with the same rules (sound public finances and high-level Social protection).
2. Policy makers should have to talk to other professionals who also play a role in making (pensions) building safe. That means there is a need for cross interaction between different policy areas (e.g. employment and public finances).

CONCLUSIONS

1. By ensuring that the lenght of retirement, in comparison to the lenght of employment, does not increase, the current proportion can be preserved hence supporting the pension system.
2. The labor market sustainability, achieved by keeping the elderly in the labor market, is the basis for sustainability of pension system.
3. Increasing employment among older workers is decision for real progress in ensuring long-term adequacy and sustainability of existing pension schemes.

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ANALYSIS OF THE EXPERIENCE OF THE REALIZATION AND THE ASSESSMENT OF THE CONTEMPORARY PROSPECTS OF THE MODERNIZATION AND TERRITORIAL MEGAPROJECTS IN RUSSIA

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Abstract

In the beginning and the second half of the XX century in Russia several large scale territorial projects were realized and their consequences are far from unambiguous. Today in Russia the era of the renaissance of the territorial megaprojects as a new tool of the territorial management has begun. In order not to repeat the mistakes of the past, it is necessary to reconsider in a critical way the available experience. On the basis of the two historic megaprojects – the construction of the Transsiberian railroad main and the development of the economic zone of the Baikal and Amur main – the reasons of their successfulness or unsuccessfulness are revealed, and the expert assessment of possible prospects of their modernization in the economic space of modern Russia is given.

Key words*: strategic territorial management, development, territorial megaproject, efficiency, modernization*

1. INTRODUCTION

Elaboration of strategies and programs (as the tools of their realization) of the region or the macroregion development on the basis of the evolution and genetic approach as well as on the program and goal oriented approach is determined by the necessity of the introduction of the newest achievements of the economic theory and the strategic territorial management into practice for the management efficiency rise on the meso level of the national economic system.

From the point of view of the evolution approach, the territory appears as a systematic, full of the forming conditions, potential resources and the interaction of the factors of the production being carried out in it and as the result of the latter. Evolution approach to the formation of the strategy of the social and economic development of the territory, to the target program of its realization rich in investment projects of different scale, territorial radius and the importance supposes the realization of dialectic principles namely: inner integrity and the aspect specification; relative isolation and the necessary coherence with the environment; project discontinuity and procedural continuity; absolute inversibility and inevitable heredity; forced selectivity and preferable constructive features; innovative variability and routine conservation; scantiness of resources and unboundedness of needs; objective determination and factoral appropriateness (Inshakov, 2011; Mitrofanova, 2011).

Full – grown realization of the antiinertial potential of large integrated programs of the territorial development is only possible only through the introduction of the efficient tools of the strategic territorial management on the basis of the combination of economic and planification principles,

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integration of the program-target and resource – industrial approaches to the process of the territorial stategizing. And the study of the national historic experience of the megaprojecting will allow to reveal the conditions, capable to ensure the organic entity of these approaches and to avoid the repetition of mistakes of both methodological and methodical character (Mitrofanova, Zhukov, 2010).

Strategic territorial management is a peculiar creative synthesis of the innovative changeability and routine conservation in the managerial and organizational mechanism. The assessment of the accumulated experience, modern tendencies and the explanation of the possible prospects within the evolution approach allow forecasting social and economic effects, to form adequate institutes of development and to take measures of the evening out of possible negative results of the megaprojetting (Inshakov, Inshakova, Mitrofanova, Petrova, 2009).

2. MATERIAL AND METHODS

Large scale investment projects of the beginning and the second half of the XXth century such as the construction of the Transsiberian railroad and the development of oil and gas resources of the Western Siberia are the most meaningful territorial mega projects of the pre-revolutionary and soviet periods. These mega projects remain fundamental in the contemporary national economy and create the potential for its future development (Kibalov, Kin, 2007).

The success of these territorial mega projects is explained by their high degree of the immunity from diverse risks, engendered by the fluctuations of the external environment as well as the complicatedness of the projects themselves. Risks arise in the situation of the indeterminacy, thought as the result of the incomplete knowledge, insufficient study of the natural and social phenomena, into sphere of which the project is broken. The measure, adequately taking into account the factor of the indeterminacy and protecting the projects from the risks, is a thorough and multiple aspect scientific preparation of the project, integral part of which are the assessment methods of its expected efficiency. And the latter in view of the relativity of any knowledge in every particul7ar moment of time must first, represent the fusion of the theoretical and empirical knowledge, and second, be based on the critical analysis of the available precedents.

From the point of view of the strategic territorial management the question whether the potential of the successful territorial megaprojects with be conserved and multiplied is important. This depends on the fact whether the authorities will be able to use efficiently the positive experience of the past in order not to repeat its mistakes and not to create the basis for new threats. The objective analysis of both successful and unsuccessful projects is needed for that.

Two main territorial megaprojects (Transsiberian railroad and a number of development projects of the oil and gas resources of the Western Siberia) in their initial intention had a strategic character and their preparation were led with the use of the serious scientific and research base and were grounded on the wide social expertise. So, the project of Transsib was discussed by the Russian public and was studied by the professionals in different variants since 1832 – from the beginning of the project idea till the beginning of the construction.

Mechanisms of the realization of these projects were different in principles of the functioning but turned out to be so “hindrance proof” that, for example, Transsib was efficient at the tsarizm, developed socialism and remains so in the conditions of the market economy. In spite of the differences in the mechanisms of the implementation, the territorial mega projects had a common feature: the state guaranteed the resource provision of the projects, and negative consequences were

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compensated also with the budget funds. And the guarantees were preserved in the historic perspective in spite of the changes of the forms of the national statehood during the whole life cycle of the projects. That is different forms of the state and the guarantors of the projects (in the language of the system analysis and program approach) turned out to be "terminal programs with a limited life cycle, … calendar plan developing resource projects, strategic supports of the Russian statehood in any of its modifications. The self organizing integrity, which life cycle is determined by the productivity of the resource (in different modifications) projects has arisen and keeps existing. And till it (the productivity) will not be exhausted and its mechanisms of its (integrity) actualization will not be destroyed, Russia will surprise the world with its "floodability" (Kibalov, Kin, 2007).

These specifications contributed to the decrease of the uncertainty of the future. Megaprojects were initially based on the large scale scientific groundwork, created by theoretical and applied researches of many years in the preproject period. However it is clear that the scientific groundwork is only the potential showing the possible efficiency of the investment project. That's why for the implementation of the possibility into the concrete results an efficient mechanism of the project realization is necessary.

The "pioneer" mechanism is the method of the Transsib project management, its principles of functioning in the form of the Committee of the Siberian railroad were offered and put into practice by S.Y. Vitte. In particular, the president of this committee was the emperor Nicolas II that allowed to solve many problems with the first person in the state efficiently and fully passing the bureaucracy hindrances.

Self organizing social and economic systems cope with the uncertainty at the expense of high adaptability, immanent to the decentralized managerial structure of these systems. From this point of view the phenomenon of the self organizing potential of Transsib can be explained by the fact of the balanced interaction of the negative (stabilizing) connections of the functioning (effect of state hierarchies) and positive (destabilizing) of the reverse connections of the development (social and economic, social, integrative effect of large scale investment projects).

However the presence of the self organization potential is an indispensible but not sufficient condition for the stable, safe, balanced development of social and economic systems of different levels of the hierarchy. An important factor is the accumulation by the territories of competitive advantages, aspiration to reach the parameters of the inclusive development and this at other different conditions, is ensured by the skill to elaborate and to realize territorial investment megaprojects with a high expected (i.e. realizable under the condition of uncertainty) efficiency. If under the condition of the glokalization (globalization and localization) of the development we disregard this fact, the positive effects of the successful historic megaprojects will be neutralized by unsuccessful modern megaprojects.

Most part of the scientists consider the project of BAM (Baikal and Amur railroad Main) as an unsuccessful one. However it should be noticed that this megaproject is one of four large scale projects of the Siberian development program including: Uralo – Kuznetsky, Angaro-Yenisseysky projects, programs of the formation of the West Siberian oil and gas complex and the megaproject (integrated program) of the economic development of the Baikal and Amur railroad Main zone.

The realization of the Uralo-Kuznetsky megaproject, elaborated in the second half of the XXth century, played an important role in the creation of large industrial centers to the east of the Urals. Aspects of the technical policy of the Siberian economy industrialization, connected wit the creation of new machines, the formation of the progressive structure, used to take an important place in the

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megaproject. A great importance was paid to demographic problems, to the formation of the working force balance, stuff training. Such areas like the organization of the scientific research and the projecting were isolated as separate tasks.

Angaro-Yenisseysky megaproject was the second after the Uralo-Kuznetsky not only chronologically but also in the compliance with the objective logics of the Siberian productive forces development. Concentration in the Angaro-Yenisseysky region of large reserves of hydroelectric resources with favourable conditions of their explotation and high concentration of raw materials became the prerequisites of the transformation of this region into the largest in its importance production center of cheap energy and the production of the power-hungry plants.

All the works in the Angaro-Yenissysky megaproject had an integrated character with a wide analysis of its reformatory role in the social and the economic life of Siberia. Already in prewar time the preparation of the scientific base of the project was realized. In the world practice of 1920-1930s there were no precedent of the construction of the hydraulic works and territorial - production complexes of such technical and economic complicatedness and that had predetermined the period of the scientific research, separated into the specific first stage. The second stage was connected with the elaboration and the implementation of the program of the Irkutsk hydro power works and the creation of the Irkutsk-Cheremkhovsk territorial and production complexes. On the third stage the formation of the Bratsk-Ilimsk territorial - production complex and the construction of the same name hydro electric plants were realized. The finishing fourth stage was connected with the construction of the Krasnojarsk and Sayano-Shushenskaya hydroelectoric plant and the formation of the corresponding territorial and production complexes (Aganbekian, Shniper, 1980).

The West Siberian oil and gas megaproject was the largest in the country. He was accepted in late 1960th and was calculated upon two five year plans. It was typical of this project quick in comparison with the world practice, speed of the development of oil and gas fields situated in marshes and tundra. The realization of the megaproject required the activization of geological prospecting works, realization of the corresponding growth rates of the oil refining, petrochemical, gas processing industry, and the acceleration of the development speed of the production infrastructure, and the overcoming of the office barriers.

In the 1970th the economic development of the Baikal and Amur railroad zone was positioned as the main task of the spatial development of the country, connected with the creation of the new industrial belt in the Nearest North, interacting with the first zone, created along the Transsib.

In constrast to the Ural-Kuznetskiy and Angaro-Yenisseysky megaproject, the preplan preparation of which was realized during several five year plans, the studies on the BAM project were started and led together with the process of the construction of the railroad itself. This fact could not but influence the organizational and methodical character of the works being carried out.

In connection with the finishing in general of the reconstruction period when the GNP of Russia reached the level of 1990 (generally at the expense of the sphere of paid services and the inflow into the economy of the “hydrocarbon” money) and the state, to a larger extent, and the business to a smaller extent had obtained far from always grounded “investment ambitions”. First of all, this statement deals with large scale transport projects financed by the state and directed to the creation of the economic infrastructure. That’s why the aspiration itself to invest into the transport projects should be welcomed but under the condition that large scale investments are not accompanied by ecological disasters and thefts of state funds in very large amounts. And under the “disasters” and “thefts” should be understood not the criminal actions both individual and in a group, made under the malicious intent

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but the ones, causing the damage without knowing, automatically, due to the project mistakes (Kibalov, Kin, 2007).

The integrated character of the economic development of the BAM zone was determined by the following factors: the construction of the latitudinal railroad main with the length more than 3000 km with the provision of the second exit to the ports of the Pacific ocean basin. The construction of the meridional main BAM – Tynda – Berkatit included into the economic use the territory of 1,5 mln square km, on which considerable natural resources are concentrated, before all, mineral raw materials and the wood, that could not be used in the production scale without the transport development of these regions. BAM was supposed to become a bearing railroad main, from which after some time other transport mains were thought to be built into the regions of the new industrial development. The economic development of the BAM zone according to the plan was supposed to create favourable prerequisites for the formation of the united energy system of the country on the basis of the consolidation of the of the Far East and South Yakutia energy systems with the energy system of Siberia. The realization of the BAM megaproject was forecasted to solve an important economic task of the inhabitation, of the eastern regions of the country. BAM was supposed to fulfill an important foreign activity function of the USSR relations reinforcement with the countries of the Pacific ocean basin (Aganbekian, Shniper, 1980).

In general sense megaproject BAM included not only the construction of the stem part with the length of 3100 kilometres from Us't – Kug as far as Komsomolsk –on–the Amur, put into operation on the starting complex in 1989, but also the project of the finishing of the North Muy tunnel, started in 1974 and brought into permanent service in 2003 and the construction of the branches to the Chineysky polymetallic deposit, completed by 2005 and to the Elghinsky coal deposit.

In order to answer the question, why the planned schedule BAM construction project proved to be unsuccessful even in soviet times, let's compare this project with the Transsib project taking into account the uncertainty factor.

Megaproject BAM as well as the BAM megaproject was thought to be strategic. Railroad main, running to the north of the Baikal lake, had been planned even before the revolution as the second exit to the Pacific Ocean, with all the desirable consequences for Russia in the achievement of its political, military and economic goals in the east of the country. The change of the political regime after the revolution of 1917, did not change her strategic goals in the Far East and in 1920s the suggestion of the construction of the railroad, similar to BAM was included into the GOELRO plan (State Electrification Plan of Russia) and in 1932 the Council of National Commissars of the USSR took the decision on the BAM construction (Sobolev, 1979).

However at the invariability of the strategic goals of both projects, the mechanism of their realization varied greatly. Although the politburo of the Communist Party though did not take the decision about the beginning of the railroad main construction on the BAM project, however politburo did not have the direct responsibility of its results and it is still unknown who on the level of the Soviet Government coordinated this project on the foundation stage of its realization. However it is known that the construction was transferred under the control of the State Political Department that organized BAMlag, having concentrated in it 300 000 of Russian prisoners and then 200 000 of imprisoned Japans. So the mechanism of the total constraint was created that was based inhrently on the labour of the prisoners.

It is not difficult to see the difference from the mechanism of the Transsib construction, based, in modern terms on the principles of the state and private partnership and market self organization. The

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committee of the Siberian railroad was openly and publicly presided by the first person in the state. The financial side of the project was supervised by the minister of finance of the Russian Empire and later the chairman of the Government S.Y. Vitte. On the remark of historians the construction contractors though "traditionally used to steal but knew the measure (the market made them automatically disciplined) and the working force was formed on free hiring".

Transsib was designed and built by the outstanding Russian engineers, specialists of the world level. But during the period of the repressions in the after war Russia, that affected considerably the railroad elite, both scientific and managerial was weakened for many years after. BAM was designed by the specialists of the BAMproject, selected by the Ministry of the Interior and BAMlag (later – General Camps Administration of the railroad construction). That's why scientific groundwork on the BAM project permanently turned out to be insufficient along the whole lifecyle of the project (Kibalov, 2001).

The attempt to change the situation in a radical way with the scientific provision of the megaproject by means of creation in 1975 of the Scientific council on the project of the economic development of the BAM zone under the guidance of the Academy of Sciences of the USSR was belated and, therefore did not give the expected results because of the lack of the studies financing.

In 1953 – 1974 construction works of the railroad main directly did not take place. Only in 1974 after that when the BAM construction was included into the XXth five year plan, the megaproject was resuscitated, though design and exploratory work was restarted some time earlier. This was connected with the aggravation of the soviet-china relations in late 1960th that predetermined the priority of the military goal of the BAM construction as the lateral road. Another target of the BAM was transit and strategic and it had the role of the oil transporting railroad into the countries of the Asian Pacific region. However officially these two priority goals of this megaproject were not voiced, at the XVII congress of the Allrusian Youth Communist Union it was declared that the construction of BAM was the first step of the large scale project of the Eastern Siberia and the Far East development. This program would result in the creation of the new industrial regions of the country, new cities and communities (Sobolev, 1979).

Because of the insufficient level of the scientific grounds of the preproject studies which, contrary to the logics of the scientific forecasting, were led in fact at the same time with the construction, both priority goals proved to be poorly grounded. In the West Siberian oil and gas complex the oil deposits that would make BAM railroad a profitable oil and gas transporting railroad were not found. Competent realization of the development goals of the Eastern Siberia and the Far East required an adequate approach to the construction (before all, the railroad itself), during which a large scale project would be realized in parts, so that by its completion on the full specialization and it would cover the expenses. It would be a mistake to lay at once 3100 km of the railroad from Us't – Kut as far as Komsomolsk –on– Amur without the creation of the capillary (auxiliary) road net around it. The railroad had to be built in latitudinal parts with meridional branches to the natural resources deposits, already prepared for the extraction. For instance, having built the western part as far as Chara, it would be useful to move not further to the East but to China and Udokan, having prepared them beforehand for the profitable extraction. Unique reserves of these polymetallic deposits, developed in short terms and delivered on the constructed fragment of BAM and other roads of the net to the consumers (national and foreign) would cover the expenses on BAM till its complete readiness.

However neither the complex explorative works nor the empirical industrial operation, nor the trustworthy technical and economic explanation in the BAM zone deposits are not still completed though "the golden link", being the sign of the through passage on the stem road of the BAM railroad,

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was already laid in 1984. For the lateral railroad and the oil transit such result is keystone. From the economic point of view the railroad of poor efficiency was constructed which was put through still not economically developed territories. The organizational and economic mechanism of the megaproject of BAM could not change, adjust to the transformation of the target accents, as it was departmental in its essence and it was disassembled after the starting complex was put into operation.

As the result economic goals of the business development of the BAM zone were not achieved. Economic life that started to activate in the zone near BAM in connection with the railroad construction, because of the lack of funds by 1989 returned into the initial state of the "economic desert", existing before 1974. And the losses of the empty BAM according to different estimates make about 1,5 – 2,6 mlrd. roubles (Yakunin, Porfiriev, Arbatov, 2006).

The decision of the Transsib construction was connected with the geostrategic interests of the tsarist Russia. Minister of Finance S.Y. Vitte said, that the Siberian, Zabaikalskaya and Ussuriyskaya roads were constructed mainly because of military and political intentions. But with the course of the design, explorative and construction work their results openly and widely were discussed by the public. In the end the public opinion was formed: megaproject Transsib – was not only the means of the solution of the military and political problems and the tasks of the economic development and the exploitation of large, rich in natural resources territories. In compliance with the achieved understanding, the priority goals of the project were changed. When transit traffic on the Transsib proved to be smaller than expected (excluding the war period with Japan), the accent was put on the development of the region of Transsib. The maneuver led to a swift increase of the production forces of Siberia that resulted in the insufficient freight capacity of the railroad that was eliminated by two reconstructions already during the construction – in 1989 and 1903.

By 1908 the Transsib project already became profitable. If the average speed of the BAM construction was 230 km per year on the Transsib railroad it was 480 km per year. In the author's opinion, the basic distinction of the implementation mechanism of the BAM megaproject from the Transsib Megaproject consisted in the fact that in the first case the state proved to be insolvent and did not provide corresponding funding of the project and the program (as the tool of its realization) of the economic development of the BAM zone neither in the soviet nor in the post soviet period. In the second case the project, excluding the years of the revolution and the first period of the market transformation in 1990s was financed on schedule, the road was technically reequipped and now represents a super modern railroad main, electrified on the whole distance, efficient not only economically but also from geopolitical and a military-strategic point of view.

But the mechanism of the megaproject BAM realization, despite its all disadvantages, was an organizational hierarchy of a mobilized type, and the first person of this hierarchy was conferred powers not only to legally dispose of the resources within the established limits, but also the power from the first person to attract into the project all the necessary additional resources in the circumvention of the bureaucratic distribution system (similar to the realization of the Transsib megaproject). This person was the member of the politburo of the Central Committee of the Communist Party of the Soviet Union A. Aliev – an outstanding statesman not only of the soviet times.

3. CONCLUSION

In spite of all its advantages and disadvantages, in modern conditions the interest for the megaprojects of Transsib and BAM is growing.

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The prospects of the Transsib development. The idea of the transformation of Russia into the terrestrial land transit bridge between Europe and Asia, voiced on the IV Russian-Singapore business forum, can become a key doctrine of the transport development of the country for the following decades. The base of the transit flows in the nearest future will become the transit of the container loads in the key international transport corridors, in the first place, transcontinental direction "East – West", the base of which represents the Trans Siberian railroad main.

The suggestions of the plan elaboration are voiced for the creation of the land bridge or of the second level railroad – Transsib 2.0. The main index of which should become the realization of the cargoes transportation from Asia to Europe up to seven days and the aggregate throughput capacity up to 10% of all the cargo traffic Asia – Europe.

In the process of the designing of the Transsib 2.0 and the programming of the Russian track expansion it should be processed from the unevenness of the development of the Russian extreme West and the Far East, making an emphasis on the advancing transport development the Far East of Russia and Siberia with the orientation of the Middle East (Iran, Afghanistan, Pakistan) (Krupnov, 2010).

The necessity of the forced development of the Far East, beside the transit problem is a keystone question for the national security and the national development. This is determined by the shift of the world center to the region of the Central and East Asia and the sharp discrepancy of the aggregate complex power of our Far East with the neighbour states and the Central and East Asia region in the whole. In connection with this the question about the Transsib 2.0 from a geoeconomic one becomes geopolitical and geostrategic one, what requires to connect the goals of the transport development with the task of the complex advanced development of the Far East and to make a large scale project a priority for the federal power (Krupnov, 2006).

Technological "extending" of the Transsib 2.0 project is possible using new technological principles, organization of fast and superfast roads, that's why to the geoeconomic, geopolitical and geostrategic significance of this project a visible geocultural meaning is added. Without a new culture – organization of life, settlement, production, integration of science, education, and industy – the realization of this project is of little probability.

Ipso facto the project Transsib 2.0 can become the foundation of the country's modernization as a whole. If the lengthening of the Russian track to Europe is the main geoeconomic action in the western direction, for Siberia and the Far East the most important task consists in the new organization of the space on the basis of the creation of the Far East and Siberian transport and logistic megajunctionss or megaclasters.

Russia with the view of the logistic independence provision should lead the policy of the logistic autarchy without allowing the cutting off the Far East and the Siberia from the march cargo traffic, and, instead, creating the system of the transporters' attraction into the movement on the Russian territory. This is the essence of the transport geopolicy of the standart 1520.

During the construction of Transsib 2.0 demographic and city construction aspects will dominate. Technological and economic adequacy of the realization of the Transsib 2.0 project requires the following task formulation: through the creation of the land bridge "to gush forth" to the seventh technological lifestyle (way of life based on bioinformative systems). This all leads to the necessity of the acceptance of the concept of the corridor of the development, as the main category of the transport and railroad development the corridor of the country.

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The corridor of the development is the consolidation with the goal of the obtaining the system effect of the development seen as the structural complication of life forms, thinking and activity, around the transport mains into the united infrastructure of the communication systems, energy flows, new technological solutions, future settlements – ecothechno towns, research centers, technology and institutes transfers. Within the Transsib 2.0 project two priority corridors of the development are considered: the Eastern one in the Russian Far East and in the Sibirsko-Iransky one, connecting the Western Siberia with the states of the Middle, Central and South Asia, i.e. a new crucial macroregion, which is supposed to be called New Middle East.

The Eastern development corridor represents a number of clusters, creating bases-junctions of the development: Sakhalinsky (biotechnological cluster, ocean economy), Komsomolsk-on-Amur (machine building, aviation clusters), Svobodnensky near the cosmodrome "Vostochny" (cosmic cluster), Eastern Siberia (energetic cluster). Sibirsky-Iransky development corridor is determined to give orthogonal support to cargo traffic of the land bridge and to allow Siberia to come close to the markets of "warm seas". For the Russian development this transport way can become more important than the virtual transport corridor "North-South".

If we speak about the "second life" of the Transsib megaproject, the main task today is to restore the Russian railroads their former historic role – not only the transport companies but also the pivot of the development of different countries and undeveloped territories, new development of old territories and stimulating inhabitation in the new interests of the Russian and world development. During 70 years of the planned economy in Russia the number of built railroads was a digit smaller than two decades before the First World War. "These projects, even not realized in full, will finally and definitely redraw the existing geometry and architecture of the geoeconomy" (Yakunin, 2005).

The prospects of BAM development. Not so long the decision on the BAM throughput capacity increase was taken, different suggestions on the elaboration acceleration of a complex of measures on the economic development of territories, adjoining the Baikal and Amur main. However the problem of the exact assessment of natural resources has arisen without which the planning of the capillary (auxiliary) railroad infrastructure, adjoining the BAM would be difficult. The first question is in the field of competence in the Ministry of the Industry and Energy and for the second one the Public Company "Russian Railroads" is responsible for and who would coordinate their activity in the zone, it is not quite clear. There is no exact information on who would finish the construction of BAM. Constructive capacities, that built the starting complex of BAM do not exist any more and to develop them using the market instruments will not be possible. In connection with that the suggestions to realize the completion with the help of military railroad builders, having repeated the experience of the construction of the eastern branch of BAM appeared. The quantity and complexity of such problems most probably would increase if a new mechanism of their solution, on the adequate complexity of the new stage of the BAM megaproject is not found.

Today the preplanned Russian territorial megaprojects (the Ural industrial – the Ural polar, BELKOMUR (The White Sea, Komi, the Ural), Complex development of the Lowest Priangarye, Complex development of the South Yakutia), the first three have entered the stage of the realization, and, in the opinion of the experts, will provide a considerable shift in the economic development of the eastern part of Russia. Ural, Siberia, Far East – are the macroregions where, in the nearest 15-20 years, according to the plans, the capital-intensive economic growth will dominate, based on the coordinated actions of the state and the business in the realization of the specific investment projects.

According to the value approach, an important condition of the choice of one or another megaproject is the conjugation, harmonization of the values (integration into the value system of the external

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environment) and the coordination of the management scale. For the intensive involvement of territory assets into the global exchange, an indispensible condition is its integration into the zone of the macro and meso space changes of the global character. That's why the strategic goal of the megaproject must reflect the aspiration of the territory (district, group of regions, region) to enlarge its participation in the system of global exchange and to increase its importance (through the capitalization) in this system, having increased the value of its assets, in the first turn, of the human capital, having improved the quality of the people's life environment.

Thereby, the historic experience proves that the factors of the successfulness of the territorial megaporjects realization were: a high level of the specialists' competence, high-capacity scientific groundwork, deep and large scale preproject research, separated into an independent stage; combination of the plan and market principles; the efficiency of the development institution in the form of the private-state partnership, high transparency, active social participation, supervision of the realization process at all stages of the project life cycle from the part of the "main stakeholder", that allowed to avoid all possible bureaucratic obstacles and to make necessary corrections promptly. The same historic experience proves that at the absence of the factors mentioned above the project will be condemned to failure.

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PROPOSAL OF AN OPTIMAL CORPORATE SOCIAL RESPONSIBILITY MODEL IN ROMANIA AND BULGARIA: THEORETICAL AND EMPIRICAL EVIDENCE

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Abstract

Considering the most recent communication of the European Commission in the field of corporate social responsibility (CSR) and the current economic and social context, the present paper aims to outline a strategic CSR model to be applied in Romania and Bulgaria as a synthesis of the co-responsibility between companies, governments and society as a whole. After presenting the main CSR models in the EU and the theoretical framework of an optimal CSR model, the research focuses on the specific requirements of consistent CSR policies in the two countries in order to consolidate economic competitiveness. The paper also offers a comparison at national and corporate level between CSR in Romania and Bulgaria and a potential method of quantifying the CSR involvement at national level. Finally, last part of the paper presents a set of recommendations regarding the delineation of a potential optimal CSR model in the two analysed countries.

Key words: *CSR model, CSR theoretical framework, co-responsibility, triple-bottom line, multi-stakeholder groups, Romanian companies, Bulgarian companies*

1. INTRODUCTION

In order to consolidate the level of trust in business in the context of the post-economic crisis and to reaffirm the necessity of a higher business involvement in the triple-bottom line objectives, the European Commission issued a new communication on corporate social responsibility (CSR) at the end of October 2011, changing the focus at least on the following three fundamental issues: a broader definition of CSR ("the responsibility of enterprises for their impacts on society") (EC, 2011, p. 6), that puts a greater emphasis than ever on the corporate contribution to sustainable development; a more pragmatic approach of CSR, emphasizing the advantages at community but also corporate level; a higher integration of the relationship between companies, governments and society as a whole.

Assuming a direct relationship between the level of CSR involvement and the economic development at micro and macro level, as well as a set of well-defined advantages that CSR could bring for the responsible companies (presented, in detail, in the specialized literature, see, for example, Iamandi, 2010), there still are a series of challenges associated with CSR considered by the European Commission as the main priorities for 2011-2014 period. Some of these lines of action envisage: the enhancement of visibility and transparency of CSR practices, as well as corporate disclosure of social and environmental information; the improvement of CSR self-regulation, co-regulation and reporting procedures and processes; the deeper integration of CSR into education, training and research; the highlight of the importance of national and sub-national CSR policies; the alignment of European and global approaches to CSR (EC, 2011, pp. 8-14).

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The great diversity of economic, political, social and cultural environments at the level of the European Union also determines a high variety of CSR approaches and related public policies (Knopf et al., 2011) or an inconsistency in their formulation and development, especially in the countries that have accessed more recently to the EU. Pointing out that CSR should remain a voluntary endeavour, with governments promoting CSR and/or offering the necessary general framework and companies implementing socially responsible practices, the present research focuses on the CSR situation in Romania and Bulgaria, in order to finally delineate a set of strategic action lines based on a potential optimal model of CSR. In this sense, the broad theoretical framework should be also complemented with an empirical analysis conducted at national and corporate level.

2. THEORETICAL FRAMEWORK OF CSR ANALYSIS

For a comprehensive CSR analysis, a detailed theoretical framework is compulsory. The specialized literature presents different approaches, models, theories, strategies and issues related to CSR (Carroll, 1991; EC, 2004; Garriga and Domènec, 2004; Kotler and Lee, 2005; Lozano et al., 2005; Székely and Knirsch, 2005; Galbreath, 2006; Iamandi, 2010; Dehelean, 2011; GRI, 2011), but a thorough framework was needed (Iamandi, 2012) for achieving the objective of proposing an optimal CSR model, especially at the level of EU countries.

The CSR theoretical framework emphasized in *Figure 1* synthesizes the relevant information in the field and presents it from a general to particular perspective based on four basic layers:

- *The fundamental level*: CSR dimensions, theories and related approaches;
- *The structural level*: CSR models for promoting and implementing CSR;
- *The strategic level*: CSR domains, action lines and corporate matrix;
- *The operational level*: CSR forms, instruments and general and specific indicators.

Using this theoretical framework as a basis for an optimal CSR model, a set of priorities could be underlined in order to align CSR in different countries (including in Romania and Bulgaria) with the main strategic action lines recently communicated by the European Commission:

- Considering also the discretionary or philanthropic responsibilities in the corporate business conduct, and not just the economic and legal responsibilities (Carroll, 1991);
- Consolidating a business conduct that also takes into account the social demands and the ethical values, positioning the responsible company at the confluence between CSR integrative and ethical theories (Garriga and Domènec, 2004);
- Adopting a set of characteristics from the CSR models applied by governments in promoting CSR in different European countries: public-private partnerships and co-responsibility between companies, governments and society as a whole (CSR "Partnership" model); central corporate role and "soft-intervention" of the states in implementing CSR, social cohesion, voluntary and transversality (CSR "Business in the community" model); companies seen as community citizens with rights and obligations and enhancement of sustainable development strategy (CSR "Sustainability and citizenship" model); importance of multi-stakeholder groups (CSR "Agora" model) (Lozano et al., 2005);

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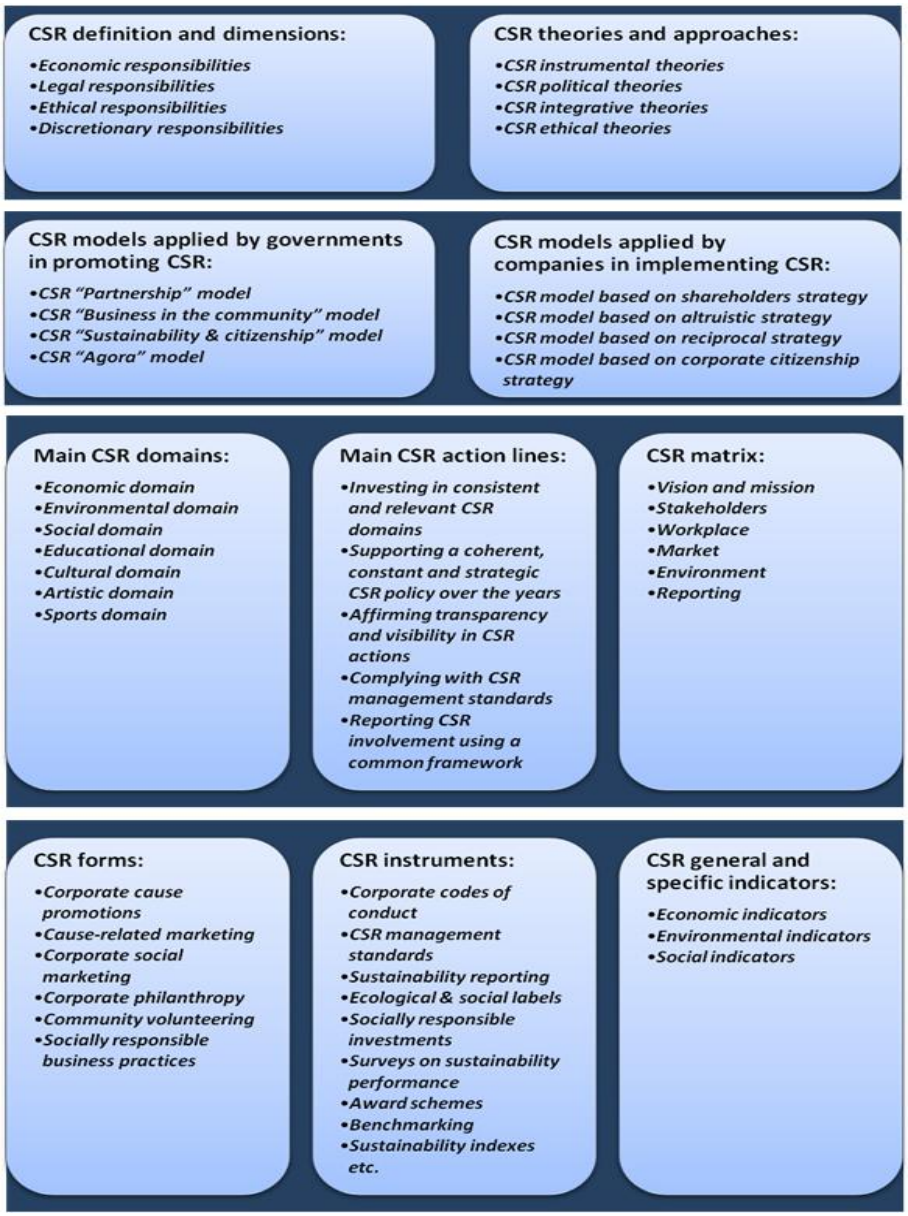

Figure 1: Theoretical framework of an optimal CSR model

Source: Authors' review and synthesis based on the specialized literature in the field. A more detailed form of the framework was presented in Iamandi (2012).

- Focussing on harmonizing economic, social, environmental and moral objectives in the corporate business conduct (CSR model based on reciprocal strategy) and balancing the competing demands of the various stakeholders (CSR model based on corporate citizenship strategy) (Galbreath, 2006);

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- Considering the involvement in the main CSR domains and action lines in correspondence with the community needs and the corporate strategic objectives;
- Identifying of specific CSR conceptual matrix at the level of each responsible company by formulating of strategies, policies and practices in the area of CSR (Lozano et al., 2005);
- Emphasizing the socially responsible business practices as the most appropriate CSR form for the responsible companies and societies as well (Kotler and Lee, 2005);
- Choosing socially responsible investments, sustainability indexes and corporate codes of conduct as the most efficient CSR instruments (Székely and Knirsch, 2005);
- Reporting according to Global Reporting Initiative indicators (GRI, 2011), simultaneously taking into account economic, environmental and social performances.

3. CSR IN ROMANIA AND BULGARIA: COMPARISON AT NATIONAL LEVEL

Romania and Bulgaria both acceded to the European Union in 2007 and, considering the development of CSR at national and corporate level, they are very similar in terms of advances and challenges in the field. For a CSR comparison at national level between Romania and Bulgaria, we suggest a set of five main elements to be taken into account:

- *Existence of a CSR strategy at national level*, with an emphasis on the main direction lines that should be followed in the next years;
- *Analysis of CSR reporting*, as a prerequisite of CSR development at national level;
- *Level of HDI* (Human Development Index – UNDP);
- *Level of CPI* (Corruption Perception Index – Transparency International);
- *Proposal of a method for quantifying the CSR involvement at national level*, especially designed for being taken into account at the level of the European countries.

Both Romania and Bulgaria have registered significant progresses in the field of CSR in the last years, especially because they have succeeded in formulating and implementing CSR national strategies (in 2009 in Bulgaria, for 2009-2013 period; in 2011 in Romania, for 2011-2016 period), with corresponding action plans and measures to be applied.

The Bulgarian Strategy for Corporate Social Responsibility 2009-2013 was initiated by the Bulgarian Ministry of Labour and Social Policy in July 2008 and it was approved by the Council of Ministers in late 2009, together with an Implementation Plan. The expert team preparing the document included a variety of representatives of the state administration, social partners, non-governmental organizations and stakeholders (ESC, 2009, p. 14). The strategy expresses the commitment of the government to support socially responsible practices and to ensure the preconditions for the active and voluntary participation of all stakeholders (Eurofound, 2010). The most important provisions of the Bulgarian strategy on CSR envisage at least the following aspects: the fundamental role of the state in communicating, promoting, stimulating and encouraging CSR balanced with the voluntary character of CSR, freely assumed by companies beyond laws and regulations; the encouragement and introduction of CSR in small and medium-sized companies; the formulation of systematic actions for combating corruption and the informal economy; the development and introduction of training

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programs into the curriculums of secondary and higher education institutions in Bulgaria; the promotion of transparency in the implementation of CSR initiatives (ESC, 2009, pp. 5-6).

The National Strategy for Promoting CSR in Romania 2011-2016 was developed in consultation with a large group of stakeholders and it was approved by the Romanian Government in September 2011. The main objective of the strategy is to increase the awareness regarding the importance and the benefits of adopting CSR and to consolidate the involvement of the public sector, the Romanian companies, the multinational companies, as well as the civil society in implementing CSR in Romania (2011, p. 17). The main action lines of the Romanian strategy on CSR mostly reflect: the development of an adequate framework for enhancing CSR by the public authorities at central and local level; the promotion of CSR application at the level of the Romanian organizations; the active involvement of the public sector in CSR initiatives; the participation of the decision-making factors at different levels in the area of CSR (2011, pp. 31-34). The strategy also contains strategic action lines for different economic, social and environmental sectors.

In what concerns *the analysis of CSR reporting*, the international survey conducted by KPMG (2011) is one of the most comprehensive researches in the field, by taking into account a number of 3,400 companies representing the national leaders from 34 countries around the world, including the largest 250 global companies based on the Fortune Global 500 ranking. As it appears in *Figure 2*, the 34 countries were grouped in four quadrants based on the companies that publish reports on CSR, by considering the quality of their communication and the level of process maturity. The four quadrants that resulted are the following: "Leading the pack", "Starting behind", "Getting it right" and "Scratching the surface", with both Romania and Bulgaria situated in the "Starting behind" quadrant, with low achievements both on quality of communication and level of process maturity (Romania registers a rather favourable position than Bulgaria). The results of the KPMG research indicate that companies in the "Starting behind" box have gained limited traction so far for either implementing or communicating about their CSR efforts and achievements, they tend to report using a single media channel and they are not demonstrating significant results regarding the growing maturity of their information systems and processes, meaning that they are restrictively using assurance to drive systems improvements and have not implemented information systems and processes to a level akin to the leaders (KPMG, 2011, pp. 4-5).

Regarding the *level of HDI* (Human Development Index – UNDP) and the *level of CPI* (Corruption Perception Index – Transparency International), both of them important indicators when it comes about analysing the CSR development at national level, Romania and Bulgaria register very similar values: 0.781 (Romania, 2011) and 0.771 (Bulgaria, 2011) for the HDI, the two countries being included in the high HDI cluster; 3.6 (Romania, 2011) and 3.3 (Bulgaria, 2011) for the CPI, both countries being considered corrupt and not very attractive for the foreign investors specifically because of this reason.

Finally, a comparison between CSR at national level in Romania and Bulgaria ends up with *the proposal of a potential method for quantifying the public policies related to CSR in different European countries* (Sweden – SW, United Kingdom – U.K., France – FR, Spain – SP, Romania – RO and Bulgaria – BG), as presented in *Table 1*. A comparative approach using these six countries was considered appropriate for positioning Romania and Bulgaria in relation with the most representative European countries in the CSR field. The proposed method measures the qualitative data presented in Knopf et al. (2011). In this sense, the 8 fundamental components of the CSR governmental public initiatives (1. General CSR supporting policy frameworks, including national CSR action plans and strategies; 2. Socially responsible supply chain management, with particular emphasis on human

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rights; 3. CSR reporting and disclosure; 4. Potential of CSR in tackling climate change; 5. CSR in small and medium-sized enterprises; 6. Socially Responsible Investments (SRI); 7. CSR and education; 8. Green, social and sustainable public procurement) were taken into account and applied for the Romanian business environment, using the 5 types of CSR instruments (1. Legal instruments [L] – laws, directives and binding regulations; 2. Economic and financial instruments [E] – taxes, tax abatements, subsidies and awards; 3. Informational instruments [I] – campaigns, training courses and websites; 4. Partnering instruments [P] – stakeholder forums and negotiated agreements; 5. Hybrid instruments [H] – combine two or more of the aforementioned instruments, like CSR centres and CSR action plans) presented in the same document. Using a specific methodology (that could be presented on request) for quantifying each of the 8 CSR components and for allocating weights to the 5 types of CSR instruments, relative values for the national CSR public policies in Romania and Bulgaria were determined (Iamandi, 2012).

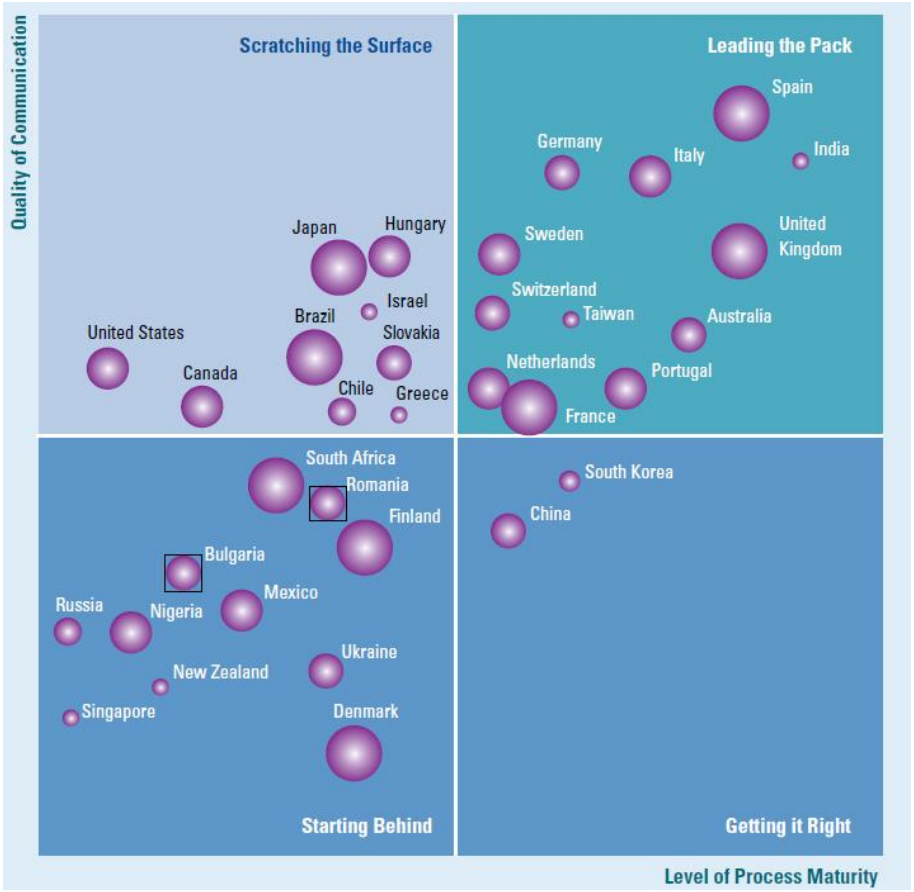

Figure 2: Overview of CSR reporting in 34 countries around the world

Source: KPMG (2011, p. 4).

The obtained results emphasize that, at the level of the European Union, there are countries where the governmental involvement in CSR issues is stronger based on a protectionist social policy (see the

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example of France) versus countries where the CSR issues are highly promoted through the voluntary corporate involvement that does not need external pressures for expressing a supportive business culture (see the example of Sweden). As was the case with the rest of the elements compared in this section, the values for Romania and Bulgaria were very similar, with a slightly advance of the Romanian performances in the field of CSR. Having a national CSR strategy put into practice is of a real help for the analysed countries in terms of CSR public policies, meanwhile the major weak point of both Romania and Bulgaria is represented by the lack of SRI.

Table 1: Quantifying the public policies of CSR: An European approach

Elements of CSR public policy (Governmental initiatives in the area of CSR, 2011)	**Analysed Countries**					
	SW	**U.K.**	**FR**	**SP**	**RO**	**BG**
1. General CSR supporting policy frameworks, including national CSR action plans and strategies	L, I, P, H **80**	L, E, I, H **85**	L, E, P, H **95**	L, I, P **55**	L, I, P, H **80**	L, I, P, H **80**
2. Socially responsible supply chain management (with special emphasis on human rights)	I, P, H **45**	E, P, H **60**	L, P, H **75**	P **15**	P **15**	P **15**
3. CSR reporting and disclosure	L **35**	L, I **40**	L, I **40**	L, E, H **80**	N/A **0**	I, H **30**
4. Potential of CSR in tackling climate change	L, H **60**	L, H **60**	L, I, P, H **80**	L, H **60**	L, H **60**	I, H **30**
5. CSR in small and medium-sized enterprises (SMEs)	I, P, H **45**	I, P **20**	L, E, I, H **85**	L, I, P, H **80**	I, H **30**	I, H **30**
6. Socially Responsible Investment (SRI)	L **35**	L, I, H **65**	L, I **40**	L, H **60**	N/A **0**	N/A **0**
7. CSR and education	N/A **0**	I, H **30**	L, P **50**	L, I **40**	H **25**	H **25**
8. Green, social and sustainable public procurement	P **15**	E, I, H **50**	I, H **30**	H **25**	P, H **40**	I, H **30**
TOTAL	315/800 **39.38%**	410/800 **51.25%**	495/800 **61.88%**	415/800 **51.88%**	250/800 **31.25%**	240/800 **30%**

Source: Authors' conception and adaptation using qualitative information presented in Knopf et al. (2011) and *National Strategy for Promoting CSR 2011-2016 in Romania* (2011). The detailed methodology could be presented on request.

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4. CSR IN ROMANIA AND BULGARIA: COMPARISON AT CORPORATE LEVEL

Both in Romania and Bulgaria the concept of corporate social responsibility was introduced at the end of 1990 and the beginning of 2000 through the multinational companies, that began to apply their responsible practices also in their business activities in the two mentioned countries. In current times, although national companies have begun to demonstrate their interest in CSR, the inter- and multi-national companies developing their business activities also in Romania and Bulgaria still are the leaders in the area of CSR, an assertion that was highly proved by the empirical research presented in this paper.

For the analysis of CSR at corporate level in Romania and Bulgaria, we considered the top 10 companies by revenues from sales according to Central Europe Top 500 Companies (Deloitte, 2010) in each of the two analysed countries. In this regard, the companies in Romania taken into account were the following (the figure in brackets represents the position of the company in CE Top 500 Companies): Petrom (25), Automobile Dacia (48), Rompetrol (70), Metro Cash & Carry Romania (92), ArcelorMittal Galati (94), Orange Romania (144), British American Tobacco Romania (145), Carrefour Romania (147), Vodafone Romania (157) and Kaufland Romania (172). The companies in Bulgaria were: Lukoil Neftochim Burgas (47), Lukoil Bulgaria (77), Natsionalna Elektricheska Kompania EAD (NEK EAD) (85), Aurubis Bulgaria (139), OMV Bulgaria (264), Mobiltel (277), CEZ Electro (294), BTC – Vivacom (347), Metro Bulgaria (386) and Naftex Petrol (396). Most of these companies in Romania and Bulgaria were partially or totally owned by international or multinational groups and the CSR involvement of the group was taken into account when data was unavailable at the level of the national subsidiary.

The twenty companies (10 in Romania and 10 in Bulgaria) were compared according to seven main elements:

- *Main CSR domains of corporate involvement* (*Figure 3*);
- *Publicly communicated CSR budgets* (*Figure 4*);
- *Regular and structured CSR reporting* (*Figure 4*);
- *Reporting according to GRI standards* (*Figure 4*);
- *National signatory of the United Nations Global Compact* (UNGC) (none of them was included in this category);
- *Adoption of ISO 26000 standard for social responsibility* (*Figure 4*);
- *Adoption of other management standards* (e.g.: SA 8000, AA 1000, ISO 14001, EMAS etc.) (*Figure 4*).

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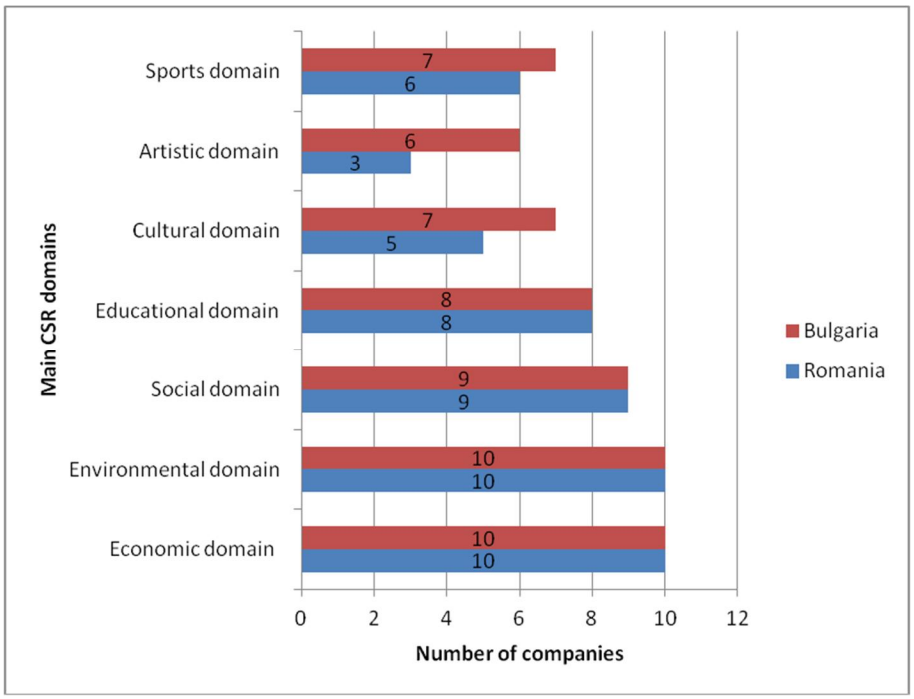

Figure 3: Corporate involvement in main CSR domains in Romania and Bulgaria

Source: Authors' conception and graphical representation using public data available on the web sites of the analysed companies. The methodology could be presented on request.

Figure 3 presents the number of companies (out of the 10 analysed in each country) that engage in economic, environmental, social, educational, cultural, artistic and sports issues as part of their CSR policy. A deep CSR involvement is due to the fact that we are mainly considering international or multinational companies (assuming the financial power and the market position as prerequisites of their representativeness at the country level), and the situation in Romania and Bulgaria is rather similar from this point of view.

In *Figure 4* we presented a graphical illustration of the rest of the CSR strategic issues in Romania and Bulgaria, with a special focus on the accomplishment of the CSR related management standards. In this sense, only one company in Romania is implementing the ISO 26000 standard for social responsibility (Orange Romania), and only one company in Bulgaria is implementing the EMAS standard for ecological accountability (Aurubis Bulgaria), out of the 20 analysed companies in our research. Most of the large analysed companies that do regular and structured CSR reporting are using the GRI criteria when presenting their triple-bottom line performance.

A major difficulty encountered in collecting the data for this research was already mentioned and it envisages the lack of available information strictly dedicated to national subsidiaries of the international or multinational companies and the availability of the information only at the group level, which actually hinders the possibility of structuring the analysis at national level.

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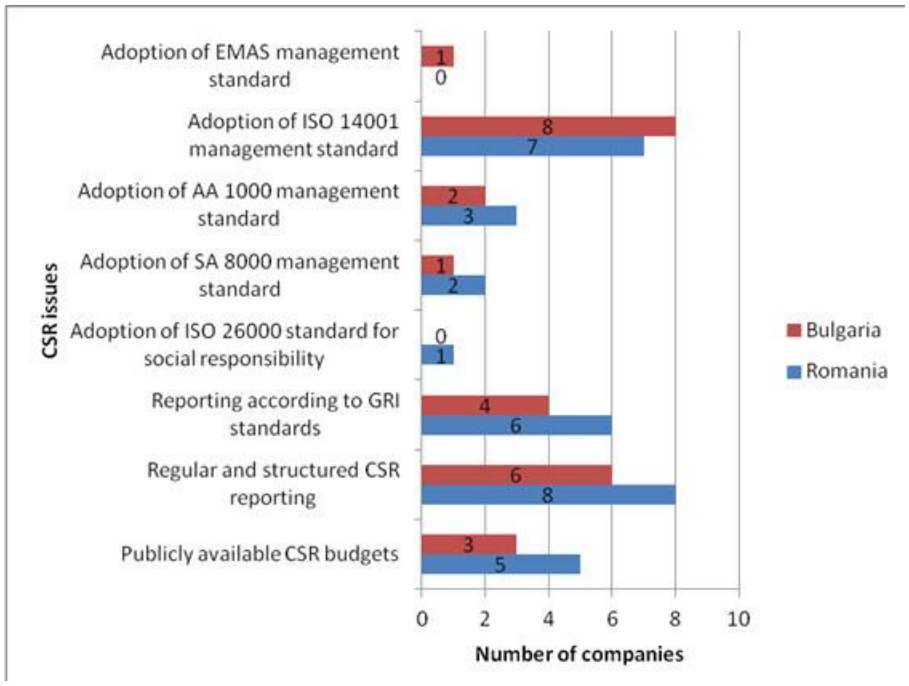

Figure 4: Corporate involvement in CSR strategic issues in Romania and Bulgaria

Source: Authors' conception and graphical representation using public data available on the web sites of the analysed companies. The methodology could be presented on request.

5. RECOMMENDATIONS REGARDING AN OPTIMAL CSR MODEL IN ROMANIA AND BULGARIA

Our proposal for *an optimal CSR model in the European Union* is based on at least the following three elements:

- The application of ESADE (Escuela Superior de Administración y Dirección de Empresas) relational model in the area of CSR (Lozano et al., 2005);
- The recommendations of the European Commission for CSR (EC, 2011);
- The basic characteristics of the four CSR models of public policies applied by governments in promoting CSR (Lozano et al., 2005).

The main conclusions of the potential CSR optimal model in the EU are:

- Promotion and enhancement of CSR in Europe need a microeconomic approach (at corporate level) and a macroeconomic one (at country level), both of them being highly necessary and inter-related;
- Legislation in the area of CSR is not enough, but the voluntary involvement of the companies is needed; on the other hand, more important than the legislation in itself is its framing in a broader political perspective in order to promote and enhance CSR;

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- State should create the general framework of CSR and promote the corporate involvement, and companies should voluntarily apply appropriate CSR measures in the economic, social, political and cultural environment in which they operate;
- Importance of co-responsibility (sharing responsibilities between governments, companies and society as a whole) in the fields of common interest;
- Importance of multi-stakeholder groups (Lozano et al., 2005).

In what concerns our proposal for *an optimal CSR model in Romania and Bulgaria*, the theoretical and empirical research conducted in the field complement the above mentioned general action lines with the following specific elements:

- The necessity of taking into account the theoretical framework presented in Section 2 when proposing a specific CSR model at corporate level;
- The governments in Romania and Bulgaria should play a supportive and incentive role in promoting CSR issues at national, sectoral and regional level;
- The companies in Romania and Bulgaria should highly co-relate their business and CSR objectives in a strategic approach with benefits at corporate and community level;
- The difference between philanthropy/charity and CSR should become clear for all the companies in the analysed countries;
- The transparency of the CSR involvement is a prerequisite of a strategic CSR policy;
- The CSR reporting and social audit procedures are to be considered top priorities in the next years for companies in Romania and Bulgaria;
- The stakeholder engagement is another element that could lead to obtaining strong competitive advantages by the companies involved in CSR practices;
- The support for small and medium-sized enterprises in implementing CSR into their day-to-day business operations could consolidate the position of these companies on the market;
- The socially responsible investments (SRI) should be developed in both countries;
- The incorporation of ISO 26000 standard for social responsibility may offer relevant guidance in the field of CSR.

The above mentioned recommendations are to be balanced with the general and specific objectives of the companies applying them.

6. CONCLUSIONS

The research presented in this paper was aimed to position CSR in Romania and Bulgaria in a broader European perspective and to compare the corporate involvement in the two countries in order to delineate a set of strategic measures for the coming years.

In this sense, the achievements of the two countries in the field of CSR after their accession to the European Union are highly consistent and the transformation and learning process is similar in the newest members of the EU. Although Romania and Bulgaria were situated on the last two places when approaching the CSR development in terms of national public policies in six EU countries, one should

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take into account the fact that they were compared with the European leaders in the field of publicly supported CSR initiatives.

Finally, at corporate level, the CSR involvement still is leaded by the international and multinational companies developing their business activities also in the analysed countries. In order for the national companies to gain a better position, we proposed a set of measured that could be perceived as prerequisites of an optimal CSR model in Romania and Bulgaria.

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THE EFFECT OF MOTOR FUEL PRICES ON ESTONIAN ECONOMY

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Abstract

This paper describes the general theoretical aspects of the fuel market; analyses the factors that influence oil and fuel prices; provides an overview of the international oil market and Estonian fuel market in 2008–2010; studies the factors of fuel pricing; attempts to find correlation relationships between fuel prices and various price indices (consumer, producer, construction, import and export price indices) in Estonia.

Since not all information on fuel market and fuel prices are publicly available the authors wish to thank the fuel company Neste for providing high-quality and thorough information on the Estonian as well as international fuel market and also on fuel prices.

Key words: *liquid fuel, motor fuel (gasoline and diesel), fuel market, fuel prices, fuel taxes, fuel VAT, excise rate, price indices (consumer, producer, construction, import and export price indices).*

1. MOTOR FUEL MARKET: STRUCTURE AND FACTORS

1.1. Structure of a typical fuel market and state regulation: theory aspects

Oil is intrinsically a fossil fuel and one of the non-renewable resources of the nature. Oil is one of the most important natural resources used mainly as raw material for producing fuel and chemical products. Hence fuels as well as oil are material goods. Fuel market is a commodities market that deals with the trade and supply of various fuels (this paper analyses fuels used in motor vehicles – petrol and diesel). Oil market, however, is a market of resources used for producing fuels.

Commonly known factors influence the fuel market. Price inspires the behaviour of all market agents: when fuel prices fall one can notice how waiting lines in filling stations grow longer – consumers wish to buy more fuel at a lower price. Fuel is a normal good – people do not want to replace it when their incomes increase. As driving a car requires also consumption of petrol, a price rise of a complementary good lowers demand for the other good; hence, usually car sales decline when fuel prices have been going up for some time. Fossil and biofuels are substitute goods, and since the prices of biofuels are very high today consumers buy mostly fossil fuels. Fuel supply is essentially influenced by the price of oil as the resource required for fuel production. Substitute goods are petrol and diesel as the same resource, oil, is used for their production. Hence, since the resource can be used for the production of either of the goods, a price rise of one good motivates to produce more of this good thereby reducing supply of the other good. Fuel has very few substitute goods and these are as a rule expensive (for example, biofuel). Hence, when the fuel price changes (irrespective of whether upwards or downwards), consumers still buy it at whatever the price; the adaptation period to a new price is

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very short. When fuel prices rise consumers do not buy biofuel since it is still more expensive. Fuel demand is inelastic. Since the production of fuels has few alternatives, also supply of fuels is inelastic.

Fuel market is a typical oligopoly (Noguera & Pecchecnino): reciprocally dependent and competing fuel companies sell identical but at the same time differentiated goods (fuel – diesel, gasoline E95, gasoline E98, diesel for specific purposes) (Greene). Entry into the fuel market is complicated since it is difficult for the new firms to compete with the existing ones whose products the consumers have accepted so far. Although international cartels are widely known, they are still prohibited in most countries. Firms may find ways to evade the restriction using other types of collusion. One of them is the price leadership model. Estonian consumers also suspect fuel companies operating in the local market of having concluded a cartel agreement, as prices in different filling stations are nearly the same. They suspect that Statoil is the price leader since their prices are often the highest and Statoil is the first to raise fuel prices.

Very few prices in Estonia are regulated by the state today. Fuel market can be theoretically regulated in several different ways:

- Through taxes: an artificial rise or lowering of taxes has an impact also on fuel prices (fuel price contains three types of taxes: excise, VAT, liquid fuel stockpiling fee).
- With subsidies: the state subsidises and supports local producers and therefore the fuel prices of this producer are lower compared to rivals (this method of regulation is prohibited in the European Union).
- By establishing activity permits and licences: to regulate market access of new firms.
- By establishing maximum or minimum fuel prices.
- with public procurement: demand for fuel increases and prices should fall theoretically.
- By prohibiting cartel agreements: the state restrains cartels and prohibits any kind of price agreements.
- Competition law – restrains oligopolic power and price leadership.

A problem is that private consumers do not know the fuel pricing principles and what the components of a fuel price are; however, notwithstanding the small size and scope of the Estonian fuel market it has a significant impact on the economy as a whole, most of all during a financial crisis.

1.2. International oil market

Oil, various oil products and fuels are the biggest articles of export in many countries and a considerable expense for enterprises and private consumers. For example, Estonia imports 95% of the motor fuel consumed here, Europe – 90% of oil products, USA – 60% of the oil used there and these amounts are growing constantly (Research of Estonian fuel market…). Therefore many countries depend on what is happening in the international oil market. It is important to comprehend the oil price behaviour over time and what might happen to it in the future. This knowledge can be used for prognosticating prices of motor fuels and of other consumer goods.

The authors use the Brent crude oil price as the basis for world market prices. Brent Crude is the oil quality standard sourced from the North Sea. The Brent oil price is used as one of the main oil types traded in international exchanges (Brent…). Internationally most widely known unit of oil volume is barrel (b). One oil barrel is equal to 42 gallons or approximately 159 litres.

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Oil prices have remarkably fluctuated over years. In the period 1940–1970, the price was even as low as 2.5 US dollars a barrel ($/b) and the price peaked in 2008 when oil cost nearly 150 $/b. In 2010, the price of crude oil stayed long in the corridor of 70–85 US dollars; hence the annual average price of oil then was ca 80$/b (see Figure 1).

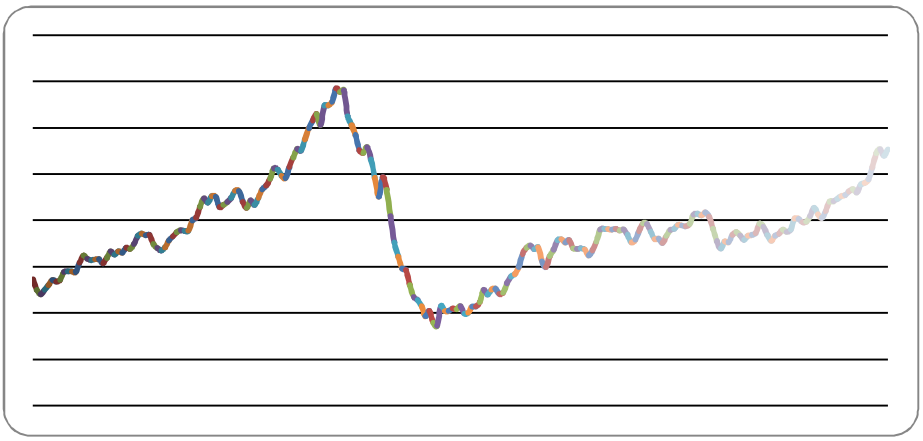

Figure 1. Crude oil price dynamics since the beginning of 2007: prices in USD per barrel

Source: World crude oil prices 2007-2011

Oil consumption in the world has been increasing persistently on average by 1.8% annually over the period 2008–2010. The growth has been clearly bigger in developing countries. While in the USA the consumption increased from 17.7 million barrels per day (Mb/p) to 20.7 Mb/p over the period 1995–2005, consumption in China increased from 3.4 Mb/p to 7 Mb/p over the same period, continuing the growth rate of 8% annually. Considering that car sales are increasing and 70% of the oil products in the USA and 55% in the world are consumed in road vehicles or in transport, it is reasonable to prognosticate a strong growth of oil demand also for the next decade (Miller & Ratti).

Oil consumption is extremely inelastic: in 2008, at the time of crisis, worldwide GDP fell 2.1% and prices rose on average 5%; but oil consumption decreased only 2.3% a year – from 87 Mb/p to 85 Mb/p (World data…). Why is demand for oil products inelastic? Today fuels account only for approximately 20% of the road transport costs (assuming that the car purchase cost and other costs are ca 4,200 euro annually and the annual driving distance is ca 40,000 km). In order for a person to significantly cut the driving distance, fuel should account for 40–50% of total transport costs. An analysis by Deutsche Bank indicates that for a large-scale replacement of petrol and diesel cars for electric and hybrid cars the total costs of the latter should be 20–30% smaller so as to provide a sufficient motivation to replace a familiar vehicle (Corporate Social…). This means that the oil price should be constantly 150 $/b or more than 1.41–1.53 euro per petrol or diesel litre that consumers would stop using them and demand for motor fuels would decrease. When the motor vehicle price stays lower than that, consumers do not wish to replace them with substitute goods because the price of the latter is higher this year.

The law of demand and supply in economics states that when supply is higher than demand, the price falls and vice versa, when demand is higher than supply the price rises. In the period 2008–2010, the production of oil in the world fluctuated around 85 Mb/p, demand, however, increased approximately

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87 Mb/p, or demand exceeded supply by a mere margin (World data…). But this caused a fast rise in oil prices, especially in 2008 when oil cost 147 $/b. Hence oil supply is also inelastic.

Oil in the world is produced mainly by large oil companies like Shell, BP, Exxon, Statoil etc. 94% of the world's oil reserves are actually under control of national oil companies. The main oil producers and reserve holders have formed a cartel, which with any normal goods would be illegal in Europe (Research…). Cartels are permitted in the world but prohibited in Europe. Supply by national oil firms participating in the cartel agreements as a rule is inelastic and political, production inefficient, often corrupt, control over their reserves is impossible. The world's best known cartel is OPEC (*The Organization of the Petroleum Exporting Countries*). The cartel was founded in 1960 by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. OPEC countries have control over 80% of the world's oil reserves and they cover more than 40% of the world's oil production. OPEC convenes at least twice a year to evaluate the needs of the oil market and on the basis of this adjusts production quotas (OPEC…).

One unpredictable factor that raises the oil price is the fiscal impact of oil producers – they impose taxes on oil exports and subsidise domestic oil products. For example, Russia charges a very high tax on exported oil barrel (40 $/b) and the price of one litre of petrol in Saudi Arabia and in many other oil producing countries is only 0.29 euro because of subsidisation (World crude oil prices).

Probably the main oil and its price related problem is that although reserves are available in the world, the easy-to-extract and cheap-to process oil has been exploited. For example, oil reserves in Norway, United Kingdom, Mexico, Canada, Venezuela and Nigeria are past the peak level and production volumes are in inevitable decline. Also many of the large oilfields in Saudi-Arabia require more expensive pumping-up technologies – oil production has been decreasing 4% annually over the past two years. The output of the world's biggest oilfield (4.5 Mb/p, or 70% of the production of Saudi-Arabia), Ghawar, is declining since increasingly more water is coming from production wells (Research…).

The price of oil affects not only fuel prices but also prices in other economic sectors. For example, a sharp oil price rise occurred in 2008 all over the world. The price of oil rose mainly in connection with growing demand for oil in growing economies and in countries with expanding industries (China, India etc.). Since oil producers could not under increasing demand increase oil supply fast enough, oil prices rose sharply in July 2008. This had a direct impact on agricultural produce: prices rose as a result of higher production costs: due to more expensive fuel of agricultural machinery and transport. The price rise of fossil fuels led to an increase in production of bio fuels from agricultural crops as an alternative source of energy. At the same time, this brought about a shift in the purpose of using agricultural land from food crops to biomass production, as a result of what supply of foodstuffs decreased and prices of foodstuffs started to rise (Victor).

Hence the depleting reserves and decreasing production of oil cause growing demand for oil and push oil prices upwards. The longer the price stays high, the more negative the impact on global economic growth. Estonia also suffers from the constantly rising raw material prices: economic activity is declining and this complicates binging down of inflation. When local macroeconomic factors combined with the economy cooling down start lowering the rate of inflation (wage growth, domestic consumption and cooling of the real estate market), then global factors push price levels upwards and won't let the inflation fall.

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1.3. Estonian fuel market 2008–2010

The Estonian fuel market is one of the smallest in the European Union (EU). The total volume of the Estonian fuel market is nearly 1 million m^3, or 1 billion litres annually; approximately 800 million litres of this are sold through the retail networks (Service Station…). Although the Estonian fuel market is relatively small in terms of volume, in comparison with other EU countries, several times more fuel sellers operate here than in other countries. 365 fuel sellers are registered in Estonia, hence the sharp competition in the Estonian fuel market (Register of Economic Activities). For comparison, Finland has fewer than twenty fuel sellers.

Fuel for the purposes of the Estonian fuel excise law is unleaded and leaded petrol, aviation spirit, kerosene, diesel fuel, diesel fuel for special purposes, light heating fuel oil, heavy fuel oil, shale-derived fuel oil, liquefied petroleum gas, coal, lignite, coke and oil shale, natural gas and unconventional fuel-like mineral oil, and components and additives thereof (Fuel Excise Duty Act). Motor fuel can be sold in Estonia only by companies who have entered into a liability insurance contract with the minimum amount of insurance coverage of at least 31,950 euro prescribed for compensation for the potential proprietary damage caused to third parties as a result of the activities of the fuel undertaking (Fuel Excise Duty Act). This paper discusses only fuels used in motor vehicles, which are automotive petrol and diesel fuel (hereinafter fuel).

In order for the analysis of the Estonian fuel market to be as objective as possible the authors used investigations carried out by two research companies. One of them is international research company Datamonitor, and the other TNS EMOR, Estonia's leading market research and consulting company. According to a survey conducted by Datamonitor, the Estonian fuel market is relatively concentrated: five big retail sellers control 86.5% of the market. Nevertheless, many small fuel companies are also operating in Estonia. The number of filling stations is growing from year to year. In 2009, there were ca 450 petrol stations in Estonia, in 2010 550 already (Service Station…). Five largest fuel sellers own only 41% of all filling stations in Estonia. Therefore they are planning to expand their stations network also in the future.

A survey conducted by Datamonitor as well as TNS EMOR in 2010 demonstrated that the market leaders are still Statoil and Neste. In 2009 and 2010, Olerex achieved a good market position due to its vigorous advertising campaign. The market shares of Statoil and Neste have not significantly changed over the period 2008−2010: nearly one third of the car drivers regard both of them as their main petrol station, Statoil by a couple of percent more than Neste. Next come three large fuel companies, Olerex, Alexela (Uno-X) and Lukoil, who are struggling for their market share (Ibid.). Their shares in the fuel market go up and down from year to year. The authors draw attention to that the market share of other small filling stations has been increasing constantly in the years 2008−2010. In 2010, their market share was nearly three-fold bigger than in 2008. Statoil had in terms of fuel quantity the biggest market share in Estonia, Alexela, however, had the largest stations network. One third of the filling stations in Estonia are unstaffed, or automated. Every fifth retail seller has an automated filling station. Neste has only automated filling stations although ten of them are operated by Neste's cooperation partners providing also other services, for example, car accessories or car wash. One third of the smaller fuel firms have automated filling stations.

There are no oil processing plants in Estonia and therefore all required fuel has to be imported. The Estonian fuel market is therefore dependent on fuel imports. The authors investigated also the main regions from where motor fuel is imported to Estonia. Liquid fuels are imported to Estonia mainly by sea from the west and north. Shipment quantities range from 3,000 to 5,000 tonnes (Research…). Until the year 2007, fuel was also imported by rail from Russia. However, the April events in Tallinn

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in 2007 and the global financial crisis had a negative effect on trade and economic relationships between Estonia and Russia. Today it is not possible to import petrol from Russia because Russia makes petrol with higher sulphur content than permitted by Estonian law. Instead of Russia Estonia now imports the bulk of fuel for domestic consumption from Lithuania, from Mazeikiai oil refinery. Liquid fuels are imported to Estonia mainly from two oil processing plants located in the neighbouring countries: from Finland, Porvoo refinery (belongs to Neste OY) and from Lithuania, Mažeikiai factory.

The authors conducted an analysis of the firms operating in the Estonian fuel market in addition to fuel sellers. The service of offloading fuel from vessels is provided by such large transit firms as Pakterminal, Vesta Terminal, Scantrans etc, as well as storage terminals for local market such as Vopak E.O.S., Vesta Terminal Tallinn, Oiltanking Tallinn, Tartu Terminal, Saare Kütus Terminal etc. Liquid fuel is transported from terminals to wholesale companies or filling stations by road transport. Trucking services are provided by such firms as Saurix Petroleum, Eurodelta etc.

The Estonian fuel market is relatively small, but many more fuel sellers operate here than elsewhere in Europe. Notwithstanding that the market is concentrated into five major fuel firms, competition is strong here. This affects the motor fuel pricing.

2. MOTOR FUEL PRICING IN ESTONIA

The authors used for the analysis average prices of the Estonian fuel leader, Neste, in the period 2008−2010. Since competition in the Estonian fuel market is very sharp, these prices represent also average prices for Estonia. In general, the fuel retail price consists of three components. The authors calculated the weight of each component in the final fuel price:

1. Purchase price, which depends on the world market price of oil and the exchange rate of US dollar and Euro (USD/EUR, until 2011 US dollar and kroon – USD/EEK) – accounts for approximately 38% of the retail price;
2. Taxes, duties and fees (excise duty, VAT, liquid fuel stockpiling fee) – account for approximately 55% of the retail price;
3. Retail seller's mark-up (fuel seller's income and expenses) – accounts for approximately 7% of the retail price (Iorina & Koljajeva).

Next we explain the pricing of every fuel price component and of the motor fuel final retail price.

The petrol and diesel purchase prices are influenced mainly by world market prices, exchange rate fluctuations and differences in purchase prices of seasonal products. Filling stations do not sell crude oil but products thereof: automotive petrol and diesel fuel. Although oil is the main raw material for automotive fuel production, the raw material price is not the only factor influencing the world market prices of finished products. Automotive petrol and diesel fuel have separate product markets and their prices are influenced also by the supply-demand ratio of finished products (Pricing…).

Sale transactions and fuel market prices are based on quotations, which show average prices of fuel sold a day before in major ports. Most of the fuel sellers operating in Estonia buy fuel on the basis of Platts European Marketscan quotes. These are quotes published daily by the information agency Platt, which serve as the basis for fuel trading. Retail price is the market price calculated on the basis of the arithmetic mean of lowest and highest quotes of the respective type of fuel published in the Platts European Marketscan quotes publications' column „Cargoes CIF NWE/Basis ARA" in the week

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preceding the dispatch of fuel. For petrol the line "Gasoline 10ppm" is used and for diesel fuel – Diesel 10ppm NWE.

At the beginning of 2008, the world market prices of fuel were quite high. By the end of the year they fell sharply, caused primarily by the economic crisis: many economic sectors as well as private consumers cut their fuel consumption. In summer 2009, oil prices started to rise again (World crude oil prices).

Since the transaction currency in the fuel market is US dollar, the fuel prices are influenced also by the exchange rate of the US dollar. All automotive fuels sold in Estonia are imported and purchased in for the USA dollars. When before 1 January 2011, the US dollar rose against the Estonian kroon, it raised the product cost price and thereby retail price. The exchange rate of the US dollar has a contrary effect on the crude oil price: when the US dollar grows weaker, incomes of oil traders from selling oil decrease, and therefore they raise the selling price of crude oil to maintain their incomes. A price rise of crude oil caused by the weakening of US dollar affects prices of finished products or motor fuels, because oil is the main raw material. Consequently, strengthening or weakening of the US dollar exerts a relatively fast impact of the motor fuel prices, since products have to be imported to Estonia for USD. It should be mentioned that a crude oil price rise caused by weakening of the US dollar has an effect with a time lag: when the price of oil in the world market rises, the fuel price rise in the Estonian market is expected after a couple of weeks (see Figure 2). Hence the fact that fuel prices in the international oil market and Estonian oil market are changing in the same direction but with a two weeks delay, was verified.

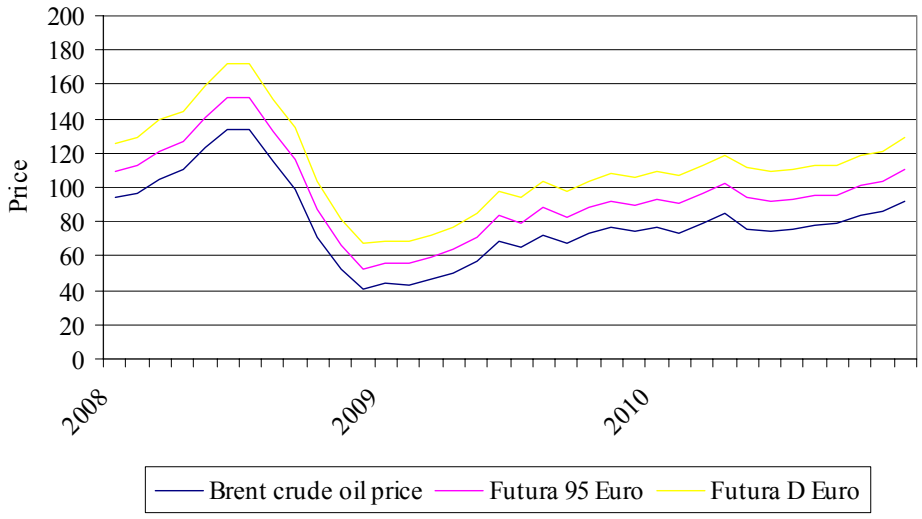

Figure 2. Comparison of Brent oil price and automotive fuel prices in Estonia

Source: Neste intranet

Figure 2 shows that fuel prices in Estonia and the Brent oil prices are changing in the same direction. Fuel prices in Estonia change in connection with a Brent oil price change with a small delay. Hence it is possible to prognosticate on the basis of Brent oil price the fuel prices in the Estonian fuel market.

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However, a situation might occur where the prices of oil and oil products fall in international markets but the exchange rate of US dollar rises and the price in local currency remains constant.

Fuel purchase prices are also influenced by weather and season. Winter diesel contains an antifreeze component that needn't be added to the summer diesel. Based on the frost resistance of diesel fuel the anti-freeze share in products varies: the lower the temperature where diesel fuel can be used, the higher the content of anti-freeze additives, which raise the cost price of the product (Pricing…). The above is the reason for higher retail prices of winter diesel.

Taxation of energy production in the European Union is regulated by the Energy Taxation Directive 2003/96/EC that came into force on 1 January 2004 (Excise duties and energy taxation). The authors calculated that taxes account for the bulk of motor fuel taxes in Estonia – more than 50% on both petrol and diesel fuel price. Fuel price contains the following taxes: minimum reserve, VAT and excise duty.

In 2008, the minimum stocks fee rate was 0.040 kroons (0.0026 euro). This was raised in 2010 by 50% – to 0.080 kroons (0.0051 euro). In 2011, the minimum stocks of liquid fuel fee rate was 0.005 euro per litre (Liquid Fuel Stocks Act). The current overall VAT rate in Estonia since 1 July 2009 is 20% (previously 18%) of the taxable value. It should be mentioned that the VAT rate rise on 1 July 2009 raised the fuel price by 25 sents (0.016 euro).

A liability to excise duty on fuels in general arises upon release for consumption or bringing them into Estonia from other Member State outside an excise suspension agreement. The taxable period for excise warehouse keepers and registered consignees as a rule is one month and the due date for submission of excise duty returns and for payment of excise duty is the 15th day of the month following the taxable period. A liability to excise duty for a consignee of excise goods released for consumption in another Member State (for example, excise warehouse keeper) arises on the date of receipt of such goods or arrival of such goods in Estonia and the excise duty returns should be submitted and excise duty paid within 5 days (Excise on fuel). Excise rates have been rising constantly over years (see Table 1). Here it should be mentioned that in 2011 excise on petrol was 422.77 euro and on diesel 392.92 euro per 1,000 litre.

Table 1. Motor fuel excise rates in 1995– 2010 (kroons per 1,000 litres)

Type of fuel	Date of establishing									
	15.11. 1995	1.01. 1997	1.12. 1997	1.12. 1998	1.09. 2000	1.04. 2003	1.05. 2004	1.01. 2008	1.07. 2009	1.01. 2010
Gasoline	1 170	1 800	2 500	3 000	3 500	3 500	4 500	5 620	6 228	6 615
Diesel	850	890	1 610	2 320	3 040	2 550	3 840	5 165	5 787	6 148

Source: Kütuseaktsiisi ajalugu. – Homepage of Ministry of Finance of the Republic of Estonia

Retail mark-up in automated filling stations is on average 75–95 sent, or 5–6 euro sent per litre, in staffed filling stations somewhat higher. Hence the fuel retail marginal is between 7 and 10% of the fuel price (Pricing…). This must cover investments, fixed costs (import costs, retail network costs, marketing and administrative costs etc.); as well as enable to earn profit, which under sharp

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competition and in small market is difficult. In addition to the above fuel price components, politics, world economy and competition in the domestic market also exert a strong impact on fuel prices.

Comparing the Estonian fuel market to the European, it appears that Estonia is one of the smallest motor fuel consumers in Europe. In 2008, Estonia consumed 500,000 tonnes of diesel fuel and 320,000 tonnes of petrol. The economic recession caused a reduction in consumption and in 2009, these indices were 466,000 and 294,000 tonnes, respectively (World crude…). The biggest consumers of motor fuel are Germany, Spain, France, Italy and UK (see Appendix 1). A comparison of fuel prices in Estonia and the European average are given in a separate table (see Table 2).

Table 2. Comparison of motor fuel prices in Estonia and Europe

Year	E95 price in Europe	E95 price in Estonia	E95 price difference	Diesel price in Europe	Diesel price in Estonia	Diesel price difference
2008	1,32	1,03	0,29	1,27	1,13	0,14
2009	1,15	0,92	0,24	1,01	0,90	0,11
2010	1,33	1,10	0,23	1,17	1,10	0,07

Source: Research of Estonian fuel market by TNS EMOR for 2008-2010. Neste intranet.

Figure 3 shows that motor fuel prices in Estonia are slightly lower than on average in Europe. Differences between Estonian and European prices have been decreasing over the period 2008–2010. Consequently, the difference between Estonian and European prices won't stay constant but is decreasing. This is caused primarily by the rising excise rates in Estonia. The excise rate has been rising repeatedly in Estonia over the period 2008–2010. The petrol excise was 5.620 kroons per litre in 2008; it rose to 6.228 kroons in 2009 and to 6.615 kroons in 2010. Diesel excise has also risen every year: in 2008 – 5.165, in 2009 – 5.787 and in 2010 – 6.148 kroons.

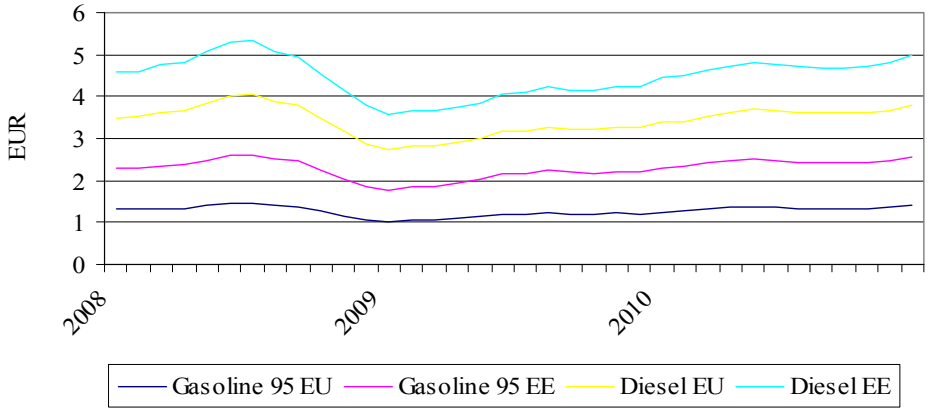

Figure 3. Comparison of Estonian motor fuel prices with European prices

Source: Research of Estonian fuel market by TNS EMOR for 2008-2010. Neste intranet.

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It should be mentioned that the European Union has established with the Directive 2003/96/EC fuel excise minimum rates: on petrol 0.359 euro and on diesel 0.330 euro. Every country still has its own fuel excise policy (Council Directive…). For example, in some countries (Bulgaria, Germany, Finland) the excise rates have not changed over the three years (2008–2010). However, there are such countries where excise rates change several times a year: Belgium, Greece, Slovenia, UK (see Appendix 2).

It turned out that the fuel price consists of various interrelated components. The fuel prices in Estonia are influenced the most by an excise rate rise.

3. THE IMPACT OF MOTOR FUEL PRICING ON THE ESTONIAN ECONOMY DURING THE PERIOD 2008-2010

The authors study the relationships between petrol and diesel prices and economic indices. These phenomena are divided by the authors into pairs, which they analyse separately. The authors base the analysis on the currency used in Estonia in 2008−2010, the Estonian kroon, and on two methods of analysis: linear pair-wise correlation and regression analysis.

3.1. Effect of motor fuel prices on price indices

The Estonian economy started to cool down in 2008. This was caused primarily by a global financial crisis. However, the following factors contributed to the economic recession at the national level: decline in economic activity, rise in energy and food prices in the world market, consumers' lack of confidence for the future, conservative banks, decline in demand, etc (Economic comments…). The economy started to rise again in 2010.

The financial crisis and standing the crisis in 2008−2010 are revealed also in statistical indices: GDP growth in 2008, in comparison with 2007, was very small – 1.76% only; and the decline in 2009 was dramatic – nearly 14%. GDP started to increase again in 2010: in comparison with the previous year nearly 5% (see Figure 4).

The rate of inflation is characterised by various price indices: consumer, producer, construction, import and export price indices. Figure 5 describes the Estonian price indices in 2008−2010. The authors analysed changes in every price index over the period 2008−2101 separately and identified the causes and factors.

As given in Figure 5, the consumer price index is changing constantly. In 2008, the CPI was influenced the most by housing expenses and heat price rise (rise more than 50%), alcoholic beverages and tobacco (21.4%), and motor fuel, which in January 2008 cost nearly one fourth cheaper than a year before. In 2009, the biggest price rise in January, compared to the previous January, was that of motor fuel (36.9%), which also had the biggest effect on the consumer price index.

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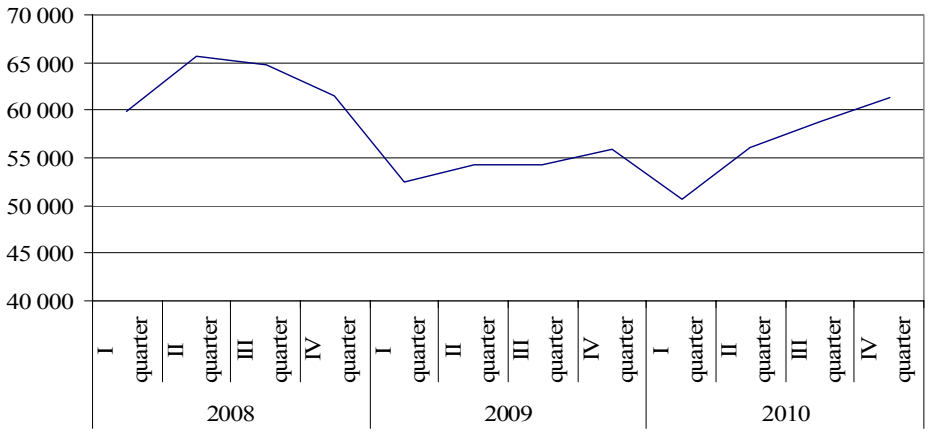

Figure 4. Estonia's gross domestic product in 2008-2010, million kroon

Source: Statistics Estonia homepage <http://www.stat.ee/en>.

Other factors that had a major effect on CPI were 6.2% cheaper food and 11.5% cheaper heat. In January 2010, in comparison with January 2009, the index was influenced the most by an 11.4% rise of food and non-alcoholic beverages, which contributed a half of the total rise. A major influence was also exerted by a 6.1% price rise of electricity, heat and heating, and a 12.7% rise of motor fuels, which together contributed nearly one fourth of the index change (Statistics Estonia…).

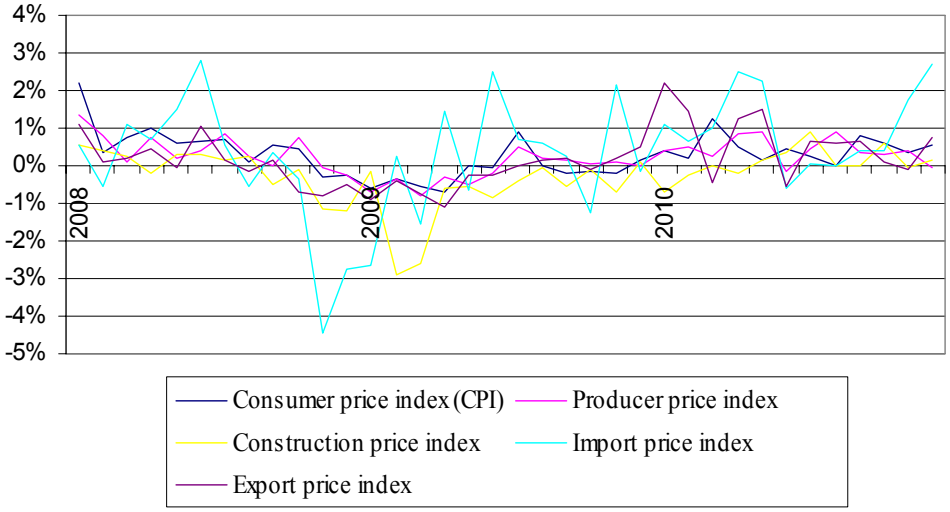

Figure 2. Estonian price indices in 2008–2010

Source: Statistics Estonia homepage <http://www.stat.ee/en>.

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In 2008, the producer price index was most affected by price changes in the energy sector, mining and in the manufacture of metal and metal products. The major factors in 2009 were prices in wood-processing, manufacture of food, mining and quarrying, and power engineering. In 2010, the producer price index was influenced the most by prices in wood-processing, manufacture of metal products and food (Ibid.).

The construction price index reveals changes in construction production costs at the level of direct input costs. The direct costs are divided into three main groups: labour, construction vehicles and machines, and materials. The construction price index in 2008 was influenced the most by the price rise of labour and of construction vehicles and machinery. In 2009, the construction price index fell in three successive quarters, mostly caused by the cheapening of labour, by 18.4%. The price index of construction machinery and materials was still falling also. In 2010, the decline of the construction price index slowed down, although it was still affected the most by the cheapening of labour. A small growth in the index at the end of 2010 was due to the market prices of construction vehicles and machinery, which were the only ones that rose in 2010. Prices of construction materials remained at the level of 2009.

The authors learned that the import price index is influenced by fluctuations of mineral fuel, agricultural produce, timber and electrical installations, as well as clothes and footwear, metal and food prices. The import price index has been affected the most over years by changes in mineral fuel prices. The export price index is influenced by the following factors: prices in the manufacture of chemical products, metals and metal products, building materials, machinery and equipment, food, wearing apparel and footwear, and of rubber and plastic products.

Price indices in general are changing in the same direction; some of them are less volatile than others. Hence the price indices reveal what is going on in the Estonian economy. The authors decided to analyse relationships between every price index and fuel prices over the period 2008−2010.

Consumer price index (CPI) measures price changes in many commodity groups (to learn about the CPI weighting system see Table 3). The share of transportation expenses has been within the limits of 14% of the income from year to year. The direct weight of motor fuel in the Estonian private consumer basket of goods, however, has varied from year to year: in 2008, it was nearly 6.6%, in 2010 8.5%. Such a growth in consumer expenditure reveals first of all a faster growth of motor fuel prices in comparison with the consumer price index – in the middle of 2010, the private consumer basket of goods in Estonia was on average 6% more expensive than at the beginning of 2008, whereas the prices of motor fuels rose 13% in the same period (Economic issues 2008-2010).

Table 3. Consumer price index (CPI) weighting system, percentage %

Tally	2008	2009	2010	2011
TOTAL	1 000,00	1 000,00	1 000,00	1 000,00
Food and non-alcoholic drinks	229,30	235,70	235,70	242,10
Alcoholic drinks and tobacco	75,30	77,40	77,40	77,70
Clothes and shoes	58,90	57,10	57,10	54,10
Lodging	158,00	169,70	169,70	177,30
Household	46,50	45,50	45,50	44,90

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Hygiene	38,10	44,50	44,50	41,20
Transport	147,70	133,70	133,70	132,20
Communication	47,20	50,30	50,30	49,00
Leisure time	81,50	73,80	73,80	81,30
Education	18,10	18,30	18,30	17,20
Food outside home, accommodation	45,10	37,40	37,40	31,60
Miscellaneous goods and services	54,30	56,60	56,60	51,40

Source: Statistics Estonia homepage <http://www.stat.ee/en>.

Fuel prices have been one of the most rapidly growing subcomponents of CPI in recent years. Because of the quite high variability of fuel prices they could notwithstanding their relatively low weight exert a remarkable impact on CPI changes (Overviews of Estonian economy…).

The authors pointed out that because of the relatively low price sensitivity the faster growth of fuel prices compared to other components of CPI will lead to a relative growth in the share of fuel expenses in total consumer expenditure (Iorina & Koljajeva). Hence when fuel prices change, their weight in the consumer basket of goods will change.

The correlation analysis gave a result that the correlation coefficient between petrol and CPI is 0.71485, which implies a strong correlation. Diesel and CPI are also quite strongly correlated – the coefficient is 0.70499. The regression analysis demonstrated that on the basis of fuel prices it is possible to prognosticate CPI with the precision of more than 50%. The regression equation demonstrates that a fuel price change by 1 kroon will cause a change in CPI by nearly 0.2% (see Figures 6a and 6b). Since CPI comprises many components, the 50% precision is very good for fuel prices. Fuel price is an important component of CPI and affects also other components.

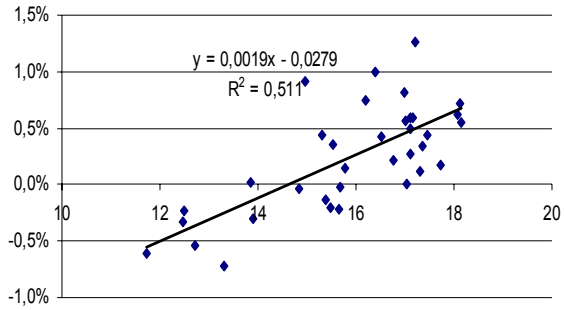

Figure 6a. Regression analysis of gasoline and consumer price index

Source: Appendix 4

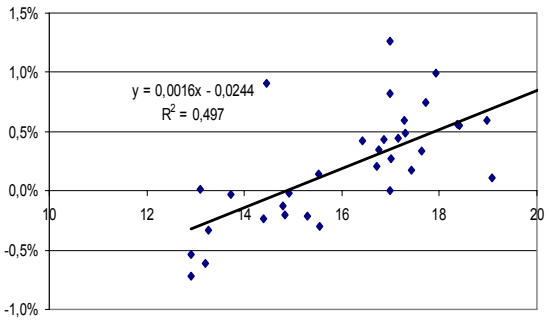

Figure 6b. Regression analysis of diesel and consumer price index

Source: Appendix 4

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The correlation between petrol as well as diesel and producer price index is over 65%, indicating a strong correlation. On the basis of the regression analysis it is possible to conclude that fuel prices enable to prognosticate the producer price index with higher than 40% precision. Like in CPI, a change in fuel price by 1 kroon will cause a change in producer price index by nearly 0.2% (see Figure 7a and 7b).

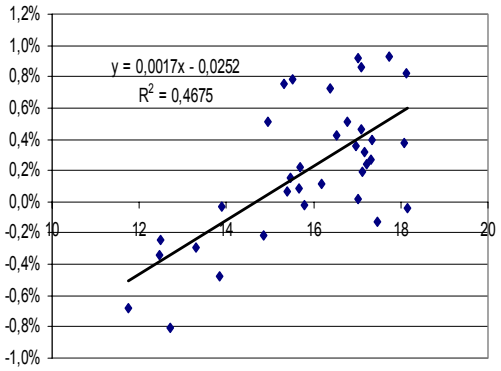

Figure 7a. Regression analysis of gasoline and producer price index

Source: Appendix 4

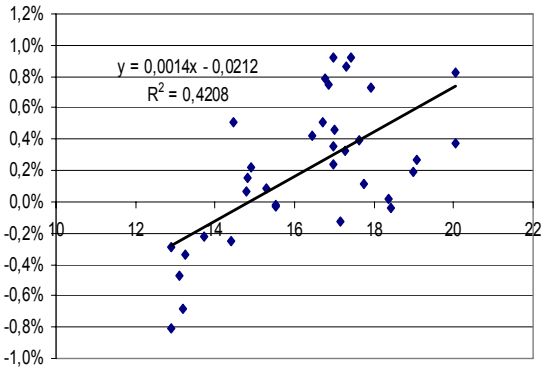

Figure 7b. Regression analysis of diesel and producer price index

Source: Appendix 4

The correlation between fuel and construction price index is also quite strong, like in the two above described price indices – over 60%. Construction price index can also be prognosticated quite precisely on the basis of fuel prices – with higher than 40% precision (see Figure 8a and 8b). A change in fuel price by 1 kroon will cause a change in construction price index by 0.2−0.3%. The authors believe that a 0.2% change in price indices caused by a fuel price rise by 1 Estonian kroon is quite big, since the price indices consist of many components and every component has a different effect of the index. Fuel prices contribute only a small share of the price indices, but because of their great variability they exert a significant influence on the price indices.

Correlation and regression analyses revealed a strong correlation between fuel prices and three price indices (consumer, producer and construction price index). It is positive that on the basis of fuel prices it is possible to prognosticate the indices quite precisely. Since information on petrol and diesel prices is publicly available, this can be used, for example, for economic prognoses.

The above consumer, producer and construction price indices are used in Estonia for measuring the rate of inflation.

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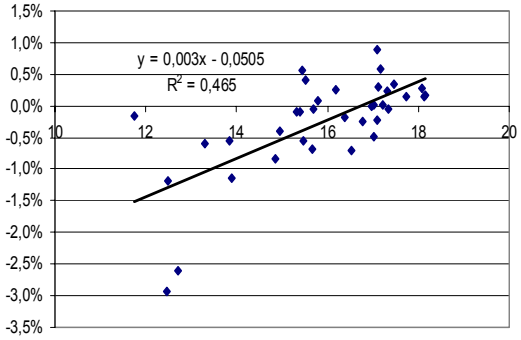

Figure 8a. Regression analysis of gasoline and construction price index

Source: Appendix 4

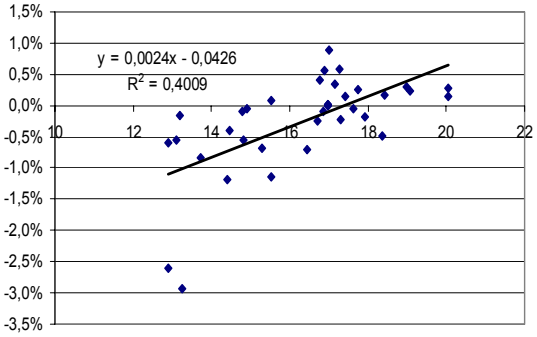

Figure 8b. Regression analysis of diesel and construction price index

Source: Appendix 4

The above consumer, producer and construction price indices are used in Estonia for measuring the rate of inflation. Therefore, on the basis of the analysis conducted by the authors it is possible to argue that a change in fuel prices will cause a same directional change in the prices of other goods (Iorina & Koljajeva). Consequently a growth of fuel prices accelerates inflation and this partial hypothesis was confirmed also.

3.2. Impact of motor fuel prices on Estonian balance of payments

In summer 2007, mainly induced by a domestic demand decline, economic growth started to slow down. The private consumption growth rate was falling incessantly and private consumption early in 2008 was 0.4% smaller than a year before (Estonia's balance…). An analysis conducted by the authors pointed out that consumption was mainly limited by a general decline in confidence although wage growth was fast still and unemployment low. Moreover, households' purchasing power was lowered by a faster growth of consumer prices than expected.

Because of the sharp decline in the world economy and rapid decline in domestic demand, the current account deficit of the balance of payments decreased by more than half during 2008 and amounted to 9.4% of GDP. The absolute value of the deficit was 23.4 billion kroons (Ibid.). The decrease in the current account deficit was induced by all current account components, but the biggest was the decline in the current account deficit of goods.

In 2008, the goods account deficit in the balance of payments was 29.3 billion kroons, which was 11.8% of GDP. In comparison with 2007, the foreign trade deficit decreased by one third or 14.2 billion kroons. Export of goods at current prices was 133.6 billion kroons, and increased 6% within the year; imports amounted to 162.9 billion kroons, which means a decrease 4%. 16% of merchandise exports were mineral products (mainly motor fuel), which together with chemical products were the largest groups of goods in deficit. Estonia's largest export partners were Finland, Sweden, Russia and Latvia; import partners were Finland, Germany, Sweden, Latvia and Lithuania (Ibid.).

Early in 2009, the value of exports of goods and services stabilised; however, the domestic demand decline continued at a decreasing rate until the end of 2009. A faster decline in domestic demand compared to external demand, which accompanied the global economic depression, had a considerable effect on the current account of the balance of payments in 2009. This turned from the previous years'

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deep deficit into a nearly 10 billion kroon worth surplus. The surplus amounted to 4.6% of the GDP (Ibid.).

In 2009, the goods account deficit in the balance of payments decreased in comparison with the previous year nearly four-fold and was 9 billion kroons, accounting for only 4% of the GDP that year. Merchandise exports decreased by one fourth and imports by one third, amounting to 102 and 111 billion kroons, respectively. The reduction of foreign trade deficit was most induced by groups of transportation vehicles, machinery and equipment, and mineral products (mainly motor fuels), where the deficit decreased by a total of 20 billion kroons (Statistics Estonia). The current account of Estonia's balance of payments was in surplus also in 2010 (see Figure 9).

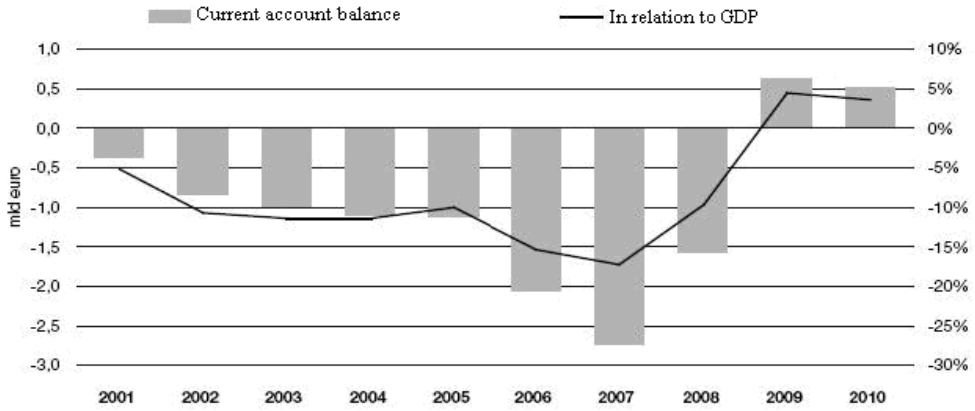

Figure 9. Current account deficit in relation to GDP 2010

Source: Estonia's balance of payment statements for 2008-2010. Tallinn: Bank of Estonia.

The authors found that both export and import of goods increased at an increasing pace, the growth of exports faster than imports: merchandise exports increased 35% and imports 27% annually. The surplus of exports-imports of goods and services increased 40% annually, and was nearly 17.2 billion kroons or 7.6% of GDP, and the current account surplus was 8 billion kroons or 3.6% of GDP (Estonia's balance…). Export of goods increased by more than one third. Trade deficit diminished in 2010 in comparison with 2009 more than 60% and amounted to 3 billion kroons or only 1.5% of GDP (Ibid.). The deficit was so small last in 1994.

The authors estimate that the growth of exports and imports was induced mainly by the chapter of machinery and equipment. The foreign trade deficit decreased mainly because of the surplus of wood, paper and products thereof, and of furniture increased and the deficit of mineral products (mainly motor fuels) decreased. Finland and Sweden continued to be the main partner countries for Estonia, in terms of credit as well as debit turnover. Among five major partner countries by both were also Latvia and Russia, by credit turnover also Germany and by debit turnover Lithuania (Statistics Estonia).

Recovery of external demand in 2010 increased the turnover of goods account: export of goods increased 35%, amounting to 137 billion kroons; imports increased 27% and amounted to 145 billion kroons (Estonia's balance…).

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In 2010, export of goods increased remarkably in all commodity chapters. The growth of exports was most facilitated by the chapter of machinery and equipment, where exports increased 1.5-fold within the year, and exports of mobile communication equipment, which increased 2.5-fold. The next largest commodity chapter was mineral products, first of all motor fuels, which were imported to Estonia for reprocessing from Russia, Latvia and Lithuania and then exported mostly outside the European Union (USA, Nigeria, Canada).

Import of goods in 2010 increased remarkably in all commodity chapters also. A 1.5-fold growth of imports of machinery and equipment had the biggest effect here also. Mineral products (motor fuels for reprocessing and domestic consumption, gas and electricity) were bought from Russia, Lithuania and Latvia (Ibid.).

Foreign trade deficit decreased in comparison with 2009 37% and was nearly 7.8 billion kroons (see Table 4). Table 4 demonstrates that the major commodity chapters that contributed to the reducing of the deficit were wood products and other manufactured goods, where surplus increased notably, and mineral products (mainly motor fuels) and foodstuffs, where deficit decreased.

Estonia is a fuel importing country. Hence the Estonian fuel market is dependent on the oil world market price: when the price of oil changes, the fuel price in Estonia also changes after some time. The authors try to find out what happens to the import and export price indices and Estonia's current account when the price of oil and hence also the fuel price in the local market change.

Table 4. Foreign trade balance in major commodity chapters, million euro

	2008	2009	2010
Articles of food	- 5 522,7	-4 352,9	-2 921,2
Mineral goods	-11 083,3	-5 270,6	-3 706,7
Chemical goods	-10 703,6	-8 107,6	-9 093,8
Clothes	-4 015,1	-2 571,2	-3 019,8
Timber, paper and goods	7 166,5	6 022,9	9 259,7
Metal	-2 265,3	55,0	-481,9
Machinery and equipment	-8 078,2	-2 165,3	-3 044,8
Transport	-8 288,4	-446,2	-1 370,6
Furniture, toys, sports	5 577,9	5 539,3	7 186,5
Others	-794,7	-944,1	-597,7
Total	38 007,1	-12 240,8	-7 790,3

Source: Estonia's balance of payment statements for 2008-2010. Tallinn: Bank of Estonia.

The correlation analysis gave the following results: petrol and import price correlation 0.581745 and diesel and import price correlation 0.379482. Based on the regression analysis, we can prognosticate the import price index on the basis of petrol price with the precision of more than 30%, and on the basis of diesel price with the precision of nearly 14% (see Figure 10a and 10b).

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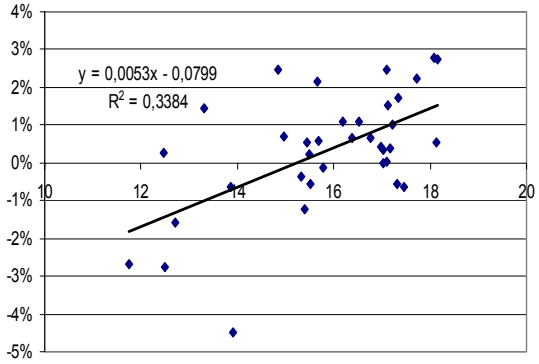

Figure 10a. Regression analysis of gasoline and import price index

Source: Appendix 4

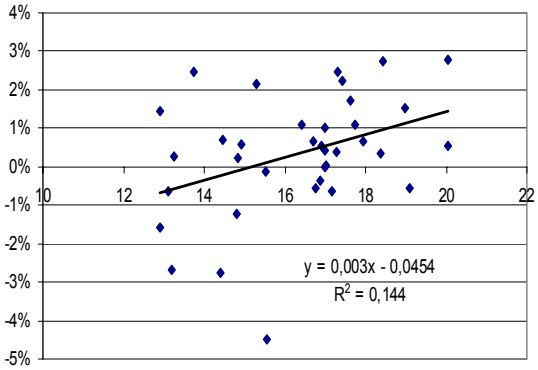

Figure 10b. Regression analysis of diesel and import price index

Source: Appendix 4

Exports in the Estonian current account are represented by motor fuels imported into Estonia for reprocessing from Russia, Latvia and Lithuania, which after that are exported mostly outside the European Union. Hence Estonia is a fuel transit country. Consequently, when the oil price rises, importers of fuel into Estonia are more eager to sell fuel and import more fuel into Estonia for reprocessing and then export it. For Estonia the oil price rise for transit is a positive phenomenon, since it encourages import and leads to a reduction in the current account deficit.

This is confirmed by statistics also: when oil price was very high in the autumn of 2008, import increased in September 2008 in comparison with September 2007 nearly 1.1 billion kroons, and amounted to 15.6 billion kroons (Statistics Estonia). The increase in import was caused by increase in fuel import by nearly one billion kroon. Importers were interested in selling fuel outside the European Union and imported into Estonia fuel for re-exportation. Also export of goods increased by 2.3 billion kroons in comparison with September 2007. The export growth was caused primarily by increase in re-export of fuel by nearly one billion kroon – fuel importers wanted to sell fuel at a high price outside the European Union. A winner was Estonia as a fuel transit country.

The biggest contraction in Estonian exports happened immediately after the April riot in 2007. The biggest contraction was on account of goods typical of transit (mineral fuels, transport vehicles, machinery and equipment). In addition to the contraction of transit, the trade in mineral fuels was considerably affected by oil price fluctuations in the world market. When the crude oil price as well as fuel price fell sharply at the beginning of 2009, Estonian exports decreased by 2.2 billion kroons or 19% in comparison with November 2007 (when the prices started to fall) (Ibid.) . The contraction in exports was caused mostly by a contraction of fuel exports. Russia stopped importing fuel into Estonia and imports to Estonia decreased by 3.2 billion kroons in comparison with November 2007. Decline in domestic demand (as a result of the economic crisis) also contributed to the decrease in imports.

The correlation of petrol and export price index is 0.228488 and that of diesel and export price index – 0.205945. Export price index can be prognosticated on the basis of fuel prices with approximately 50% accuracy. Considering that imports consist of many commodity chapters and the share of fuel is not very high (in the period 2008−2010 fuel accounted on average for 14.8% of total exports and 17.6% of imports), the author thinks these indicators can be regarded as significant.

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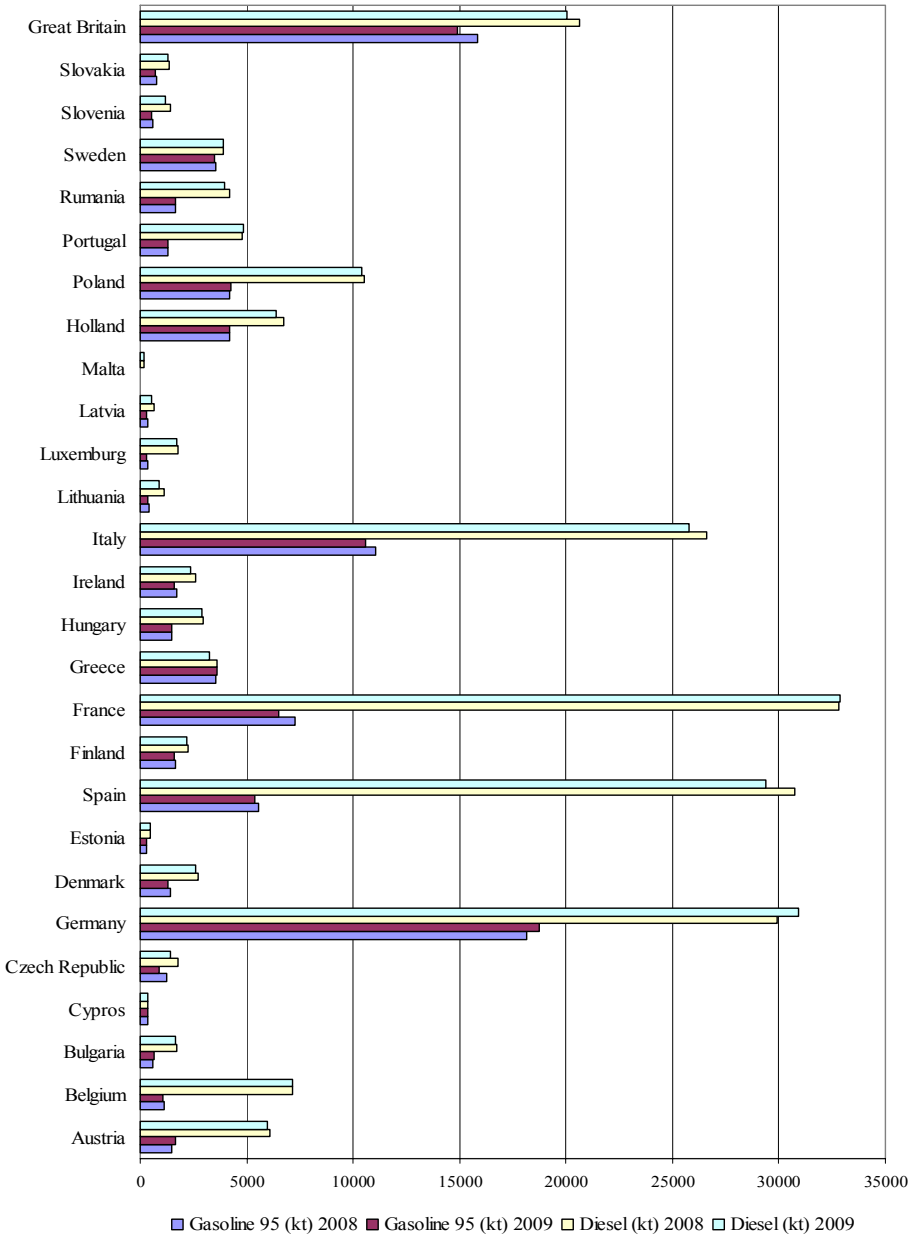
Appendix 1. Consumption of motor fuels in Europe 2008-2009, kilotons



Source: European Commission homepage. http://ec.europa.eu

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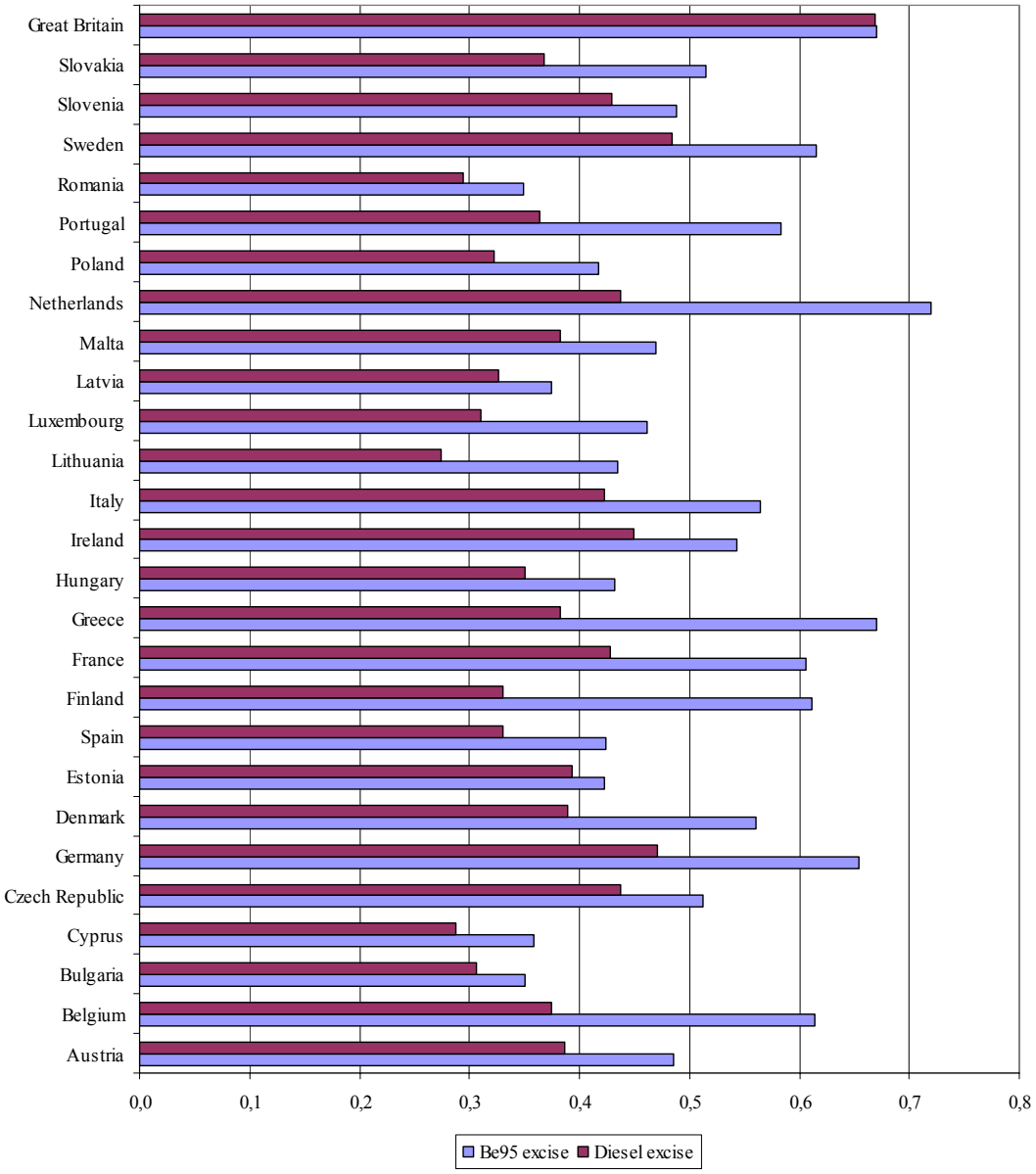
Appendix 2. Fuel excise duty rates in Europe



Source: Eurostat homepage

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Appendix 4. Initial date for correlation and regression analysis

		Consumer price index	Producer price index	Construction price index	Import price index	Export price index
2008	January	2,20	1,33	0,56	0,54	1,11
	February	0,35	0,79	0,41	-0,57	0,09
	March	0,75	0,11	0,25	1,10	0,19
	April	1,00	0,73	-0,18	0,68	0,44
	May	0,59	0,19	0,31	1,52	-0,03
	June	0,63	0,38	0,28	2,80	1,05
	July	0,72	0,83	0,15	0,53	0,13
	August	0,11	0,27	0,23	-0,55	-0,15
	September	0,56	0,02	-0,48	0,33	0,14
	October	0,43	0,75	-0,09	-0,36	-0,70
	November	-0,30	-0,03	-1,14	-4,47	-0,78
	December	-0,23	-0,25	-1,18	-2,76	-0,49
2009	January	-0,61	-0,68	-0,17	-2,66	-0,92
	February	-0,33	-0,34	-2,92	0,27	-0,39
	March	-0,54	-0,81	-2,60	-1,57	-0,73
	April	-0,72	-0,29	-0,60	1,44	-1,12
	May	0,02	-0,48	-0,56	-0,64	-0,24
	June	-0,04	-0,22	-0,83	2,48	-0,23
	July	0,91	0,51	-0,39	0,68	0,02
	August	-0,02	0,22	-0,06	0,58	0,15
	September	-0,20	0,15	-0,56	0,24	0,22
	October	-0,13	0,06	-0,10	-1,23	-0,12
	November	-0,21	0,09	-0,69	2,15	0,19
	December	0,15	-0,02	0,08	-0,14	0,50
2010	January	0,42	0,42	-0,71	1,08	2,22
	February	0,21	0,51	-0,25	0,66	1,47
	March	1,26	0,24	0,01	1,01	-0,45
	April	0,49	0,86	-0,22	2,48	1,24
	May	0,17	0,92	0,14	2,23	1,49
	June	0,44	-0,13	0,34	-0,62	-0,54

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July	0,27	0,46	0,89	0,04	0,66
August	0,01	0,92	0,01	-0,02	0,62
September	0,82	0,36	-0,01	0,41	0,66
October	0,59	0,32	0,58	0,38	0,10
November	0,34	0,40	-0,04	1,73	-0,09
December	0,55	-0,04	0,17	2,72	0,75

Source: Statistics Estonia homepage <http://www.stat.ee/en>.

Notes: As the absolute values of fuel prices are confidential information, these data is not presented in the table.

CONCLUSION

The demand and supply of fuel are inelastic, due to short adaption time. The fuel market in Estonia is a typical oligopoly. Analysis revealed the fuel prices in the international oil market and the Estonian fuel market move in one direction but with a small time delay, which is usually two weeks. However the differences between Estonian and European fuel prices are not the same, but steadily declining. Increased rates of excise in Estonia lead to this.

Since the economy of Estonia relies heavily on private consumption, fuel prices are playing huge role in the economy, which form a large part of the consumer's spending. Rising costs of fuel accelerate inflation and also affect consumer price index. Estonian income compared to average EU level is relatively low, so the proportion of fuel in the consumer basket of Estonian households is higher than elsewhere. Due to high fuel price volatility, this constitutes a significant part of the consumer price index changes.

To sum up, it may be argued that despite that Estonian consumers do not benefit from a rise in oil and fuel prices, an oil and fuel price rise benefits to the Estonian balance of payments as a whole, since it leads to an increase in imports and exports and a current account surplus. Estonia is a fuel transit country in the international oil market: fuels imported to Estonia are re-exported. It has a positive effect on exports as well as imports when prices rise, and a negative effect when prices fall. Constant rise in fuel prices has a positive effect on the Estonian balance of payments.

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METHODOLOGY OF SYSTEM INTEGRATED ANALYSIS AND ASSESSMENT OF OPERATIONAL EFFICIENCY OF A TECHNOLOGICAL SYSTEM (E-PROFIIL AS CASE STUDY)

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Abstract

The cognitive possibilities offered by the index theory are insufficiently employed to solve business and technical problems in practice. The authors believe that the use of methodology of system integrated analysis in exploring the interrelations of the main results of business entity's activities provides one of the most promising possibilities to improve the level of analysis.

The aim of this article is to introduce the use of the system integrated analysis methodology to the assessment of operational efficiency of a technological system, which is an unprecedented tool to detect hidden influences among system elements.

Numerical examples provided in this article are drawn from the data of an Estonian company E-Profiil AS, which has specialized in manufacturing large steel structures and equipment for offshore oil and gas industry.

Key words: *system integrated analysis, operational efficiency, technological system.*

1. INTRODUCTION

The method of system integrated analysis to assess the company's economic efficiency was introduced under the guidance of professor Uno Mereste between the years 1970 and 1991. Two decades ago system integrated analysis methodology was extensively applied in practice. Built on combination of system integrated analysis with matrix modeling method and theory of indexes it became an alternative approach for analyzing an enterprise's business activities. Unfortunately today, for various reasons the methodology has almost been forgotten.

The purpose of this paper is to acquaint the reader with a system integrated analysis methodology for assessing operational efficiency of a technological system (TS) in an Estonian manufacturing company. Authors believe that use of index matrices in the analysis of relationships between main indicators of business activities is one of the most promising opportunities that can raise the level of analysis by using more effectively the technical and business information in company management (Tootmisjuhtimise operatiivtasandi uuring).

Methods of system integrated analysis can be applied in business research and also in technical problem solving, such as assessing the level of TS organization; operational efficiency analysis and development of TS; assessing of TS innovations efficiency.

The data, used in numerical examples, were provided by the Estonian company E-Profiil AS, a manufacturer of complex large steel structures and equipment for oil and gas industry. This paper

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considers only discrete TS and assesses the operational efficiency of the company's TS based on the methodology developed by U. Mereste, which has been adapted to assess the performance of production-technological system introduced by M. Puusepp.

A methodology of system integrated analysis, ready to be implemented was published in Mereste's monograph *The System Integrated Analysis and Efficiency* in 1984 (Mereste 1984). Several PhD dissertations have been defended on specific problems of system integrated analysis: H. Luur (1982), A. Root (1983), R. Volt (1989), M. Sarap (1989), U. Varblane (1989). A short description of system integrated analysis as well as analysis of dissertations mentioned above can be found in paper by E. Startseva and J. Alver (Startseva & Alver 2011).

This article may be useful for companies' top management, economists, production managers and technologists as well as for students who have specialized in financial and technical fields.

2. PRODUCTION SYSTEM

In accordance to the system approach to production management, a production system (PS) is a system that uses various company resources to transform incoming production factors ("input") into products or services ("output"). PS is a part of a company's production-economic system where only technological and production functions are realized. PS contains TS in itself (Figure 1).

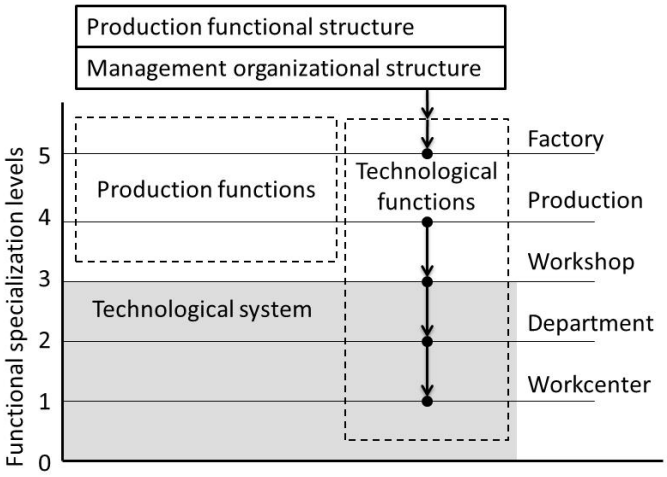

Fig. 1. Functional method of TS determination (Tamm, Puusepp & Tavast 1987).

Technological system is a set of functionally interrelated technological equipment, production items and performers that have been designed to execute given technological processes within production environment or operations in accordance with the normative-technical documentation requirements.

TS consists of subsystems, selected by functional or structural principle (Tamm, Puusepp & Tavast 1987). In this paper production process of one product – an element of an Active Heave Compensation system for deep-water drilling vessels – is analyzed (Figure 2).

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Fig. 2. AHC system element (E-Profiil AS 2011).

This product is manufactured by company E-Profiil AS, which was founded in Tallinn in 1997. Since 2005 the company's main business has been production of large, highly labor intensive constructions and equipment for the offshore oil and gas industry (cranes, pulleys, winches, etc.). The enterprise employs 169 people, 50 of whom are engineering and technical employees, 119 are the shop workers, whose responsibilities include supportive functions. Production is concentrated in one production facility with the total area of 12,900 m^2. Some technological equipment is unique in the entire Baltic region.

A product is developed and designed by a client, while E-Profiil AS is acting as contract manufacturer. Thus, the only way for the manufacturer to reduce manufacturing costs is to improve the production process in order to increase efficiency (E-Profiil AS 2011).

Production

Department:	Technological stage:
Preparation	1 Preparation
Machining	2 Machining I
	3 Machining II
Assembly	4 Assembly
Welding	5 Welding
	6 Welding, portal
Installation	7 Installation
Painting	8 Painting

Fig. 3. Main stages of production process for a typical AHC element at E-Profiil AS (E-Profiil AS 2011).

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Main competitiveness indicators are reduction of manufacturing costs and shortening the delivery time. Main phases of manufacturing process for a typical AHC element are presented in Figure 3. The stages are determined by production technology requirements. Organizational hierarchy is built according to the aggregation of main technological functions.

3. PRODUCTION SYSTEM EFFICIENCY AND TS OPERATIONS ANALYSIS OBJECTIVES

The term "economic efficiency" (productive efficiency) is used as the name of the indicator, which is equal to the ultimate output of the economic system performance to the resources utilized. The term "technical efficiency" is regarded to as the ratio of the actual and basic values of system technical characteristics.

It should be noted that in this paper a TS operational efficiency assessment is considering both economic and technical efficiencies.

Let us consider TS of a company as 'input – process – output' system, e.g. as the mechanism of resourses transformation through consumption (labor, capital and natural resources) into final results (Figure 4). The subsystem 'input' contains the technical-economic (e.g. labor and cost) and design-technological (e.g. product design and required technological operations) characteristics of manufactured products, while subsystem 'output' – quantitative and qualitative indicators of finished products (for example, output of quality products).

Fig. 4. System view of TS.

Obviously, TS operational efficiency is increasing when its input (resources) parameters are decreasing and the output (resultative) parameters are increasing.

Mereste claimed that to measure the economic efficiency such an approach is needed, which most of all would cover qualitative individual phenomena that affect economic efficiency while being changed. This way of modeling allows covering the entire area in which the efficiency is formed, and reflect, without any exception, all associations. In such case, the economic efficiency is modeled not only by using a single factor (e.g. the result of dividing two absolute numbers), but through full-association model, which covers all direct qualitative indicators, which exist between the most important results of the company business.

The possible range of tasks, which allows analyzing and directing the performance of the TS through application of a matrix model, is shown in Figure 5.

The first task (Z_{10}) is per-element comparison of models A_1 and A_0. It allows estimating the level of **TS organization** that is described with model A1, with respect to the base organization of the TS, described by a model A_0. The second task (Z_{21}) is the problem of assessing **operational efficiency of TS**. The comparison is based on one original model A_1 at different times. The third task Z_{20} – operational efficiency of TS compared with base normative level of organization. The fourth task Z_{31} – assessment of **TS development efficiency**.

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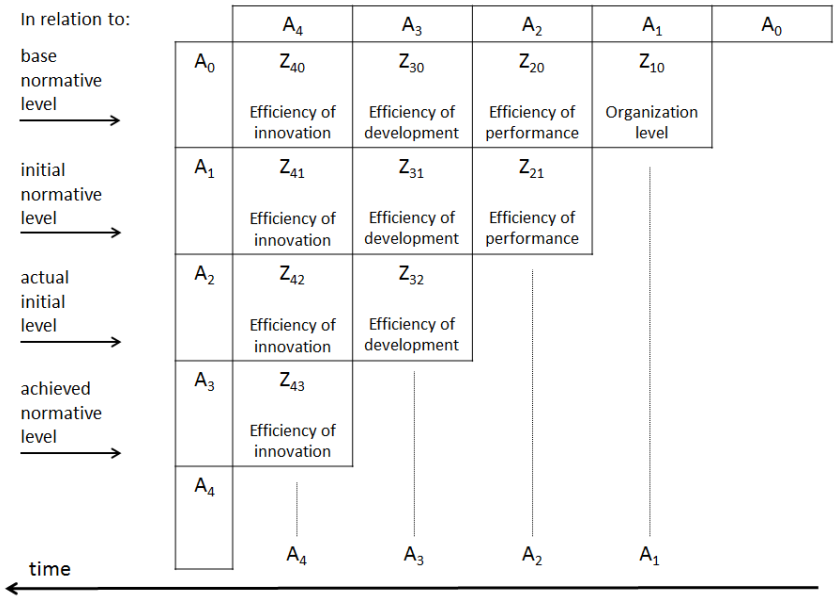

Fig. 5. Tasks matrix of TS efficiency analysis (Tamm, Puusepp & Tavast 1987, p. 144).

Model A1 is compared against itself after period of time, during which the improvements were introduced from the organizational and technological aspects and so on. Then it is possible to compare the model A3 with model A1 to evaluate the efficiency of TS development.

Assessment of the efficiency of innovations. When evaluating the efficiency of implementing of a major organization-technical innovation in specific TS, it is necessary to construct a model of the A4 and compare it with one of the previously constructed matrices. Thus, the problem of preliminary (before implementation) evaluation of innovations efficiency is formulated.

The article posed the following problem of a numerical nature: enterprise E-Profiil AS would like to improve its production system through the development of new technological tools and increase of automated operations share. However, that requires increase of production area at a certain phase of the technological process. Thus, the efficiency of the TS performance needs to be assessed before planned innovations have taken place.

4. MATRIX MODELS OF TS OPERATIONS

The following matrix model is proposed for the analysis and quantitative assessment of TS operations at E-Profiil production (Figure 6), where each element has a specific techno-economic interpretation. To compile the model following parameters were selected:

1. Labor intensity for manufacturing one product *h* (man-hours per product).

2. Total required production area to produce one product *s* (m^2).

3. Total duration required for producing one product *t* (weeks).

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4. Number of operators required for producing one product *m* (men).

The choice of model parameters depends on the goals of analysis and model elements interpretation possibilities. The analysis can be conducted on a level of Technological Operation (TO), and on TS level as a whole.

To decide which model parameters to choose, a manufacturing company may, for example, consider performance indicators adopted by the Enterprise Estonia (EAS) – one of the largest institutions within the national support system for entrepreneurship and regional development. According to EAS-certified production consultant R. Zahharov (EAS), to apply for EAS support for an efficiency and productivity improvement project a company is required to provide comparative analysis before and after the implementation of the improvement projects, using at least two parameters out of the seven listed below (Enterprise Estonia):

- scrap/defect reduction (not right first time),
- increase in stock turns per annum,
- overall equipment effectiveness,
- people productivity,
- improved space utilization,
- on-time delivery improvement,
- value added per person.

As the aim of this article is to familiarize readers with the analysis methodology, thus the question of parameters choice shall not be further elaborated.

Let us consider the question of arrangement of initial parameters. Final analytical task of the matrix model application is the determination, by means of the index method, of relative growth rate of resultative factor in total and as a result of some causal factors (Saarepera 1987). Thus, to solve the above stated problem initial parameters in the matrix shall be arranged in descending order according to the desired growth rate reduction (read from left to right). Indexes, numerical value of which should increase with the efficiency increase as per general theoretical considerations, will be located below the matrix model diagonal. Matrix model of TS (Table 1) consists of elements, with the increase of their values shall lead to increased efficiency of given TS, in accordance with our previous considerations.

Table 1. Matrix consisting of efficiency indicators

Initial indicators	1. Labor intensity γ_1	2. Production area γ_2	3. Number of operators γ_3	Process duration γ_4
1. Labor intensity α_1	1			
2. Production area α_2	Labor intensity per unit of area	1		
3. Number of operators α_3	Labor intensity per one operator	Production area per one operator	1	
4. Process duration α_4	Labor intensity per unit of duration	Production area per unit of duration	Number of operators per unit of duration	1

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The matrix consists of four quantitative input parameters, which are indicated in the titles of the table columns γ_j and rows α_i. According to table structure all matrix elements are interconnected (Mereste 1984).

$$\beta_{ij} = \gamma_j / \alpha_i \qquad (1)$$

where

β_{ij} – matrix element at position *ij*;

i – row number of cell location, (i = 1, 2, 3, ..., m);

j – column number of cell location (j = 1, 2, 3, ..., n).

All efficiency matrices are quadratic matrices m = n. If it is stated $\alpha_i \beta_{ij} = \gamma_j$, then it is possible to consider the γ_j as an resultative phenomenon, while α_i and β_{ij} as factors that are influencing γ_j. According to the general theory of statistics, β_{ij} is a quantitative factor (extensive), while β_{ij} is a qualitative (intensive) factor (Mereste 1975).

For example, the qualitative factor β_{12} should be read as "factorial system 12". Factorial system defines which specific questions can be answered with specific integrated analysis. Since the constructed matrix contains major results of E-Profiil AS TS operation, this matrix can be regarded as the efficiency matrix the E-Profiil AS TS. Four main results of TS operation selected for analysis, have numerical data known for current year and expected data for the next year, after implementation of organizational and technological improvements (Tamm, Puusepp & Tavast 1987, pp. 114–118). Consequently it is possible to observe all phenomena by six different two-factor systems.

Factors influencing the labor intensity. Changes in labor intensity can be analyzed on the basis of efficiency matrix by three (4 – 1) equal factor systems, which allow to measure:

- the change of labor intensity under the influence of changes in floor space and labor intensity per unit of area,
- the change of labor intensity under the influence of changes in the number of operators and labor intensity for one operator,
- the change of labor intensity under the influence of changing the duration of the production process and changes in labor intensity per unit of time.

The factors which affect the area, the number of operators and duration of the process are analyzed similarly.

The table of E-Profiil AS TS operations results integrated assessment, composed by the authors, is presented below. Calculation formulas of indexes are in line with system analysis methodology (Mereste 1984).

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Table 2. E-Profiil AS Primary Results of Technologic System Operation (E-Profiil AS 2011)

Technological module	Labor intensity, man-hours per product		Production area, m^2		Operators, men		Production duration, weeks	
	h0	h1	s0	s1	m0	m1	t0	t1
1 Preparation	1,840	1,480	75	75	9.0	7.2	7.7	7.7
2 Machining I	262	262	135	135	1.5	1.5	3.3	3.3
3 Machining II	804	336	90	90	1.5	1.5	6.7	2.8
4 Assembly	2,405	1,835	135	135	10.5	8.0	8.6	8.6
5 Welding	3,833	2,796	195	195	12.0	8.8	12.0	12.0
6 Welding, portal	444	756	45	45	1.5	1.5	3.7	6.3
7 Installation	2,059	1,404	525	2250	7.5	5.1	10.3	10.3
8 Painting	696	516	300	300	6.0	4.4	4.4	4.4
Total value	**12,343**	**9,385**	**1,500**	**3225**	**49.5**	**38.0**	**56.7**	**55.4**

Table 3. E-Profiil AS Technological System Operation Results Integrated Assessment Table Set

I Average values of qualitative measure

M1	12,343	1,500	49.5	56.7
12,343	1			
1,500	8.23	1		
49.5	249.35	30.30	1	
56.7	217.69	26.46	0.87	1

M2	9,385	3,225	38	55.4
9,385	1			
3,225	2.91	1		
38	246.97	84.87	1	
55.4	169.40	58.21	0.69	1

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II Index matrices

M3 Composite indexes

0.76	2.15	0.77	0.98

M4 Quantitative measure indexes

0.76	0.76	0.77	0.78
1.55	2.15	1.50	1.60
0.77	0.77	0.77	0.80
0.99	0.99	1.00	0.98

M5 Qualitative measure indexes (constant composition)

1.00	2.84	0.99	1.25
0.49	1.00	0,51	0.61
0.98	2.80	1.00	1.22
0.77	2.18	0.76	1.00

M 6 Variable composition indexes (structure)

1,00	2,83	1,01	1,29
0,35	1,00	0,36	0,45
0,99	2,80	1,00	1,27
0,78	2,20	0,79	1,00

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M7 Structural changes indexes

1.00	1.00	1.02	1.03
0.72	1.00	0.70	0.74
1.01	1.00	1.00	1.04
1.01	1.01	1.03	1.00

III Absolute increments matrices

M8 Absolute total increase

-2,958	1,725	-11.5	-1.3

M9 Absolute impact value of quantitative factor

-2,958.00	-364.79	-11.25	-12.51
6,765.29	1,725.00	24.64	33.84
-2807.23	-347.14	-11,50	-11.26
-156.00	-20.77	0.18	-1.30

M10 Absolute impact value of qualitative factor

0.00	2089.79	-0.25	11.21
-9,723.29	0.00	-36.14	-35.14
-150.77	2072.14	0.00	9.96
-2,802,00	1,745.77	-11.68	0.00

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M11 Absolute total increment of qualitative factor average value

0.00	0.22	0.00	0.00
-5.32	0.00	-0.02	-0.02
-2.38	54.57	0.00	0.31
-48.29	31.76	-0.19	0.00

M12 Absolute impact of qualitative phenomena individual changes to its average value

0.00	0.22	0.00	0.00
-3.01	0.00	-0.01	-0.01
-3.97	54.53	0.00	0.26
-50.58	31.51	-0.21	-0.02

M13 Structural changes impact onto average value of qualitative phenomena

0.00	0.00	0.00	0.00
-2.30	0.00	-0.01	-0.01
1.59	0.04	0.00	0.05
2.29	0.25	0.02	0.00

Application of matrix form during representation of the results allows concentrating data in observable data blocks, which are connected to each other through: first, index systems, and secondly, the key table of integrated analysis (Table 1).

In the first part of the table there are 2 matrices with average values of quality indicators – in the baseline period (M1) and projected period (M2). Data shall be read with help of the key matrix (Table 1). Key matrix element 21, for example, is such as labor intensity per unit of area; it means that the matrices M1 and M2 corresponding elements are labor intensity per unit of area. As the corresponding elements table reveals, the average labor intensity has decreased: its value was 8.23 and is now 2.91.

Matrices contain only numbers. By operating the units of measurement contained in the table of initial values, these numbers should be read with a measured man-hour labor per square meter, i.e. on 1 m^2 of

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production area had 8.23 man-hours to produce one product in the base period; and 2.91 man-hours of labor intensity per square meter in the projected period.

In this case, the table elements were read in accordance with the key matrix, the "key matrix-table". It can be read vice versa as well "table-key matrix". For example, element 42 in the matrices M1 and M2 is equal to 26.46 and 58.21 respectively. Key matrix element 42 – production area per unit of production process duration, which is increased from 26.46 m^2 for one week of production process to 58.21 m^2 for one week of production process correspondingly.

In the second part of table set there are 5 index matrices. The first of them is M3 row vector consisting of the indexes of the initial quantitative parameters, which are located in the vector in the same sequence in which they were taken into the key matrix. Those are composite indexes; generalizing and not analytical indicators. With the vector of composite indexes there is inextricably linked vector M8 of absolute total increase, the numbers of which are easier to understand with the relevant summary indices. The first numbers of the row vector (M3) are 0.76 and 2.15 and Delta (M8) -2,958 and 1,725 respectively. It should be understood as follows: total labor throughout of TS has decreased by 24% or 2,958 man-hours, while the production area has increased by 115% or 1,725 m^2.

A. Data regarding the impact of quantitative factors.

The following two index matrices M4 and M5 are analytic. M4 includes the index values of the quantitative factors. When reading this matrix one should be bear in mind that each element of the matrix expresses the influence of quantitative factor of the corresponding row in key matrix to quantitative phenomena, associated with an element at an appropriate place.

Let us analyze, for example, an element located on the position 21 – index value 1.55. According to the above formulation this index expresses the relative impact of changes in the production area onto labor intensity, because β_{21} is connected with resultative phenomenon, which is labor intensity. As a result, with the increase of manufacturing area labor intensity should have grown by 55%. The index matrix M4 is connected to the matrix of absolute impact M9, the element of which is located on the same position and has value of 6,765.29 man-hours. As a result of the growth of the production area, labor intensity to a product should have increased to 6,765.29 man-hours. In fact, labor intensity has decreased by 2,958 man-hours (see M8). Difference in the results is due to a decrease of qualitative indicator – labor intensity per unit of production area.

Data above is well in tune with the above described influence of the production area onto total labor intensity. Labor intensity did not increase as much as it was determined by increase in the production area, since part of the increase was covered by a decrease in labor intensity per unit of area:

$$1.55 \times 0.49 = 0.76 \text{ (M4) and } 6{,}765.29 + (-9{,}723.29) = -2{,}958 \text{ man-hours.}$$

Analysis steps: we consider pairs of corresponding elements in matrix M4 (M9) and M5 (M10), starting with the first column, revealing, which qualitative phenomena (M4 and M9), designated in the heading row of the matrix influenced the resultant phenomena to a greater extent, identified in the column header. Then discovering which quantitative phenomena in the appropriate cell of the matrix influenced to a greater extent on the resultative phenomena, identified in the column header. Thus making it possible to understand which factors have unidirectional and which have counter directional influence.

For example, in addition to changes in production area and labor intensity per unit area as previously discussed, changes in the number of operators and labor intensity for one operator have impacted labor intensity as well. Element in location 31 with value is 0.77 (M4) and 0.98 (M5). The index in M4

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represents relative effect of change of operators' number onto total labor intensity. As the number of operators was increased labor intensity should have been decreased by 23% (M4 β_{31}) or in absolute value by 2,807.23 man-hours (M9 β_{31}). As the result of labor intensity decrease per one operator, labor intensity should have been decreased by 2% (M5 β_{31}) or 150.77 man-hours (M10).

In fact, the labor intensity has decreased by 2,958 man-hours (M8 and M9 β_{11}):

(-2,807.23 – 150.77) = -2,958 man-hours.

The reasons for this decrease in labor intensity are the following:

a) a change in the number of operators – has the effect of decreasing labor intensity;
b) a change in the labor intensity per one operator – has the effect of decreasing labor intensity.

Note that the changes in both factors are unidirectional, resulting in a decrease in labor intensity.

Further, the influence of production process duration change and the labor intensity per unit of duration change onto labor intensity shall be analyzed. Similarly, influence of factors onto resultative phenomena, such as production area, number of operators and duration of the process shall be investigated. The one conducting analysis shall examine all connections and influences formed in matrices M4, M5, M9 and M10, according to the method described above. This will result in detection of important information about "hidden" processes and shifts occurring as results of the organization operations.

B. Data regarding the impact of quantitative factors.

The influence of structural changes is reflected in M7 and M13 matrices. Since these indices are considered in the theory of analytic indices, they express the influence of structural changes onto corresponding element of the matrix model, but not on the quantitative resultative phenomena. This means that the structural changes indices matrix and the general matrix of level indices are directly related to the matrix indices of the variable structure M6.

Matrix M7 index at location 21 is equal to 0.72, which corresponds to the absolute phenomena -2.30 (in M13). Meaning that as a result of the restructuring of the production area average labor intensity per unit area has decreased by 28% or in absolute terms by 2.3 man-hours per unit area.

Structural changes are taking place in more or less hidden way. With regard to measuring the impact of structural changes, the corresponding general method has long existed, but it is used relatively infrequently and rather than systematically. In any given production company the changes in the structure of all quantitative results, affect all qualitative phenomena. This means that if the analysis covers four key operations outputs, as in the current case, there is a reason to consider the impact of changes that have occurred in the structure of 4 different events on 6 different qualitative events.

One should examine the phenomena of changes that have occurred in the structure of quantitative events onto all qualitative events. There is a principle that is encoded into methodology of system integrated analysis is to measure the impact of changes in the structure of the quantitative events onto all the qualitative work results.

Concluding, matrices of the structural changes impact M7 and M13 allow one conducting analysis an unprecedented tool to detect these hidden influences. Reading the structural changes indices matrix M7 row by row, one can decide onto which of the qualitative result of economic operations, some quantitative event structure change had the greatest impact.

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5. INDEX OF SYNTHETIC EFFICIENCY

Index of synthetic efficiency – average efficiency indicator of a given TS can be found by the formula:

$$I_{E_f} = 2\sum I^*_{\beta ij} /(n^2 - n) \qquad (2)$$

where

n – the number of initial model parameters of the model;

$I^*_{\beta_{ij}}$ – variable composition indexes (structure) (M6).

Efficiency assessment according to (2) returns following result:

$$I_{E_f} = 2 \times (0.35 + 0.99 + 0.78 + 2.8 + 2.2 + 0.79)/(4^2 - 4) = 1.32 \qquad (3)$$

Meaning, that E-Profiil AS TS operational efficiency has increased by 32% within projected period (after implementation of improvements) against basic period.

6. CONCLUSION

Using method of system integrated analysis allows manufacturing company to analyze operations of the technological system, considering prioritization of certain parameters, simulate various scenarios of enterprise development, production and technological systems, by changing the values of quantitative and qualitative parameters that matrix consists of, and to assess the impact of changes onto all final resultative phenomena.

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DISPROPORTIONATE RULES OF ALLOCATION

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Abstract

Fairness of division is usually defined as equal distribution of burdens and benefits between individual units. In the existing legislation there can be identified situations in which the principle of equal allocation is not maintained. Most frequently it occurs in tax ordinances and electoral systems. The paper shows how the current electoral laws may violate the principle of equalallocation of seats in collegial bodies.

Key words: *degressive proportionality, elections, European Parliament, over-representation, fair division*

1. INTRODUCTION

One of the basic social problems is the problem of fair distribution of goods and burdens. This problem was already indicated in antiquity, and references to understanding the concept of justice of division can be found for example in the Bible (Łyko, 2011). Distribution of goods was associated with the division of spoils of war or division of jointly produced goods. Burdens were at that time related to the obligation to serve and pay tribute. In modern civilization, one of the most valuable assets to be distributed is the right to represent of specific social groups, the electoral mandates. The biggest burden is still the tax liability. For this reason, these are the most numerous and most precisely defined by law areas of rules distribution. Many legislative acts interpret what is currently understood as the concept of fair distribution and determine derogations from the rules are socially acceptable. Essentially, the topic of the reflections will be one of the identified threads of the problem, namely the rules, legally accepted and included in the electoral law, allowing exceptions to the generally accepted rules for proportional allocation of seats. A similar analysis in the case of the of tax ordinance is more difficult because of the many exceptions, exemptions or relief formulated by legislators.

2. PROPORTIONAL DIVISION

In the case of allocation of seats in split in the collective bodies undoubtedly the key principle of the division is the principle of proportional allocation in relation to population size or support. This means that in this case, justice is understood as such a distribution of seats, in which the individual constituencies or political parties are represented by the number of deputies in proportional to their population, or possibly proportional to support gained in elections. Assuming that one must distribute S seats among n constituencies ($S \geq n$) with a population of $p_1, p_2, \ldots, p_n$ and denoting by P the sum of population of all districts $P = p_1 + p_2 + \ldots + p_n$, the said proportionality should be understood as an equality of:

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$$\frac{p_i}{P} = \frac{s_i}{S}$$

where s_i is the number of seats allocated to district i. Accordingly, one can understand the allocation of seats in parliament between the political parties which during the election obtain a certain percentage of support. In this case, the percentage of the population ratio $\frac{p_i}{P}$ can be replaced by the percentage votes $\frac{v_i}{V}$ cast for particular groups, where V is the sum of all votes cast, that is, $V = v_1 + v_2 + \ldots + v_n$. It is convenient, depending on the context in which the considerations are carried out, to mark ratio r_i the quotient $\frac{p_i}{P}$, or $\frac{v_i}{V}$. Assuming a reasonable statement that both p_i and that v_i are positive numbers, one can see that $0 < r_i \leq 1$.

Usually, correct proportions are preserved only approximately resulting from rounding of the quotas allocated to particular districts or political parties to integers. This means that equality $\frac{s_i}{S} = r_i$ is practically true only for the real values of s_i, and the appropriate division only approximates the theoretical proportions. The issue of this approximation is the main stream of discussion devoted to the issue of design of principles of electoral systems (Young, 2003). The solutions proposed in the eighteenth and nineteenth centuries lived to see the mathematical studies in the twentieth century and up till now function as a practical resolutions of this issue.

The above mentioned roundings lead to a situation in which in practice there is, generally small, under- or over-representation of certain constituencies or political parties. Over-representation can be understood in two ways. In the first approach it is the result of the following $\frac{s_i}{S} - r_i$, a difference between the ratio of actually received mandates to their overall number and the theoretical ratio r_i resulting from the population of specific constituency or gained support. In the second case, it is the ratio of these quantities, namely the $\frac{\frac{s_i}{S}}{r_i} = \frac{s_i}{Sr_i} = o_i$. Revealing of a disproportion in the distribution in form of difference in percentage points does not always accurately represent the actual over-representation. Indicating, for example, a difference of 30 points has a different significance in the case of the theoretical ratio r_i at 1% and another at 30%. Therefore, the over-representation in quotient terms better shows the possible distortion of classical proportions, and as in the rest of the considerations the quotient will be the measure of inequality of distribution.

Quotient o_i can take on any nonnegative value. Equality $o_i = 1$ indicates perfect proportions. Indeed, the given number of seats in proportion to their total number is then equal to the ratio of r_i resulting from population of the constituency or support for the political party. Values o_i greater than one indicate over-representation and lower than one – under-representation of district or a party with the number i. Value o_i equal to zero is obviously a complete lack of representation.

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3. ELECTORAL TRESHOLDS

In many electoral regulations the provision legitimizing disproportionality of division is a prerequisite introducing the so-called electoral threshold. If there is such a record the political party taking part in elections to become part of a collective body, such as parliament, must reach a minimum threshold of support. Otherwise, the distribution of seats shall be in proportion between groups that have already reached the threshold as if those that did not reach it were not there. The idea of this construction is a natural condition. The point is that the body representing the voters – the parliament was not too fragmented as large number of groups forming a collective body hinders its work. It is more difficult to create a coalition, and therefore these bodies do not function well. An example is the Polish Sejm (lower house of parliament), whose composition was chosen in 1991 in elections where there was no electoral threshold in force. There were twenty-nine parties that entered Sejm at that time and they represented the politically fragmented Polish society. This parliament only lasted eighteen months. Although probably this was not only due to fragmentation, during the following term's elections there was an electoral threshold rule. Then in turn occurred a significant distortion of opinion of the electorate. Some groups received far more seats than they should get based on the actual social support. For example, the SLD and PSL coalition received 65.9% of the seats with only 35.81% support (Misztal, 2012).

Determining the threshold in elections always results in overrepresentation of larger electoral districts or parties at the expense of smaller groups. Those groups that do not reach the threshold transmit their seats to those which are larger and reach the threshold. Natural question arises about the scale of over-representation and under-representation, which may occur on the introduction of an electoral threshold.

In an extreme case, regardless of the size of the threshold, under-represented o_i can of course take value equal to zero. It would be enough if there existed a political group i which does not reach the threshold. Then $s_i = 0$ and thus o_i is also equal to zero.

In case of over-representation matters are different. It turns out that its maximum size depends on the size of the electoral threshold. Assuming that an electoral threshold described by a percentile is determined by a number of t within the interval [0, 1] it can be shown that for any $S > 0$ and every $t \neq 0$ there exists a finite sequence of numbers $r_1, r_2, \ldots, r_n,$, that for a certain i $o_i = \frac{1}{t}$ and is the maximum value that can be achieved by o_i at a fixed t.

Indeed, assuming that $r_1 = \mathrm{t}, r_2 = r_3 = \ldots = r_{\left[\frac{1}{t}\right]+1} = \frac{1-t}{\left[\frac{1}{t}\right]}$, where $\left[\frac{1}{t}\right]$ denotes the integer part of $\frac{1}{t}$, it can be seen that $r_1 + r_2 + \ldots + r_{\left[\frac{1}{t}\right]+1} = t$ and moreover $1 - t - t\left[\frac{1}{t}\right] = 1 - t\left(1 + \left[\frac{1}{t}\right]\right) < 0$, than $\frac{1-t}{\left[\frac{1}{t}\right]} < t$, thus the electoral threshold is achieved only by the first group and the first group takes all the seats from the pool, with the total, relative support of t. Hence, $o_1 = \frac{1}{t}$. It is at the same time the maximum number of seats obtained with a minimum supported, so maximum value of o_1 at a fixed t.

The obtained result is surprising. If there is no threshold, i.e. when $t = 0$, the over-representation can be equal to one. For a fixed sequence $s_1, s_2, \ldots, s_n$ one can indicate a sequence $r_1, r_2, \ldots, r_n$ such that

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for each i, $o_i = 1$ it is only sufficient to determine $r_i = \frac{s_i}{S}$. A possible, greater than one, over-representation in electoral systems in which there is no threshold is only a result of roundings of theoretical ratios to integers. When $t = 1$, there is no over-representation. All seats are accrued by the group which has full support. For certain i, $r_i = 1$. However, in case there is a threshold to achieve, the maximum possible overrepresentation increases to infinity with the threshold decreasing to zero. In conclusion, lower electoral threshold may lead to higher over-representation than a larger.

4. DEGRESSIVE PROPORTIONALITY

A different situation has been introduced in the Lisbon Treaty by the principle of degressive proportionality. Large disparities in the population of EU member states have led to the formation of regulations favoring less populous countries. Not wanting to marginalize the role of the smallest member states by granting small, proportional to population, the numbers of seats in the European Parliament a structure was created that was then called degressive proportionality. (The Treaty of Lisbon, 2010): *"The European Parliament Shall Be Composed of Representatives of the Union's citizens. They shall not exceed seven hundred and fifty in number, plus the President. Representation of citizens shall be* ***degressively proportional****, with a minimum threshold of six members per Member State. No Member State Shall Be Allocated more than ninety-six seats."*

Rather general wording of the Treaty is clarified in the annex to the draft resolution of the European Parliament (Lamassoure, Severin, 2007). Presented in the document two principles explain the idea of degressive proportionality. The first of these, the principle of equitable distribution says that a country with a larger number of people cannot get less seats than less populated country. The second, referred to as the principle of relative proportionality, states that the larger the country, the greater number of voters should be represented by one member of parliament. Taking this into account it can be concluded that the sequence $s_1, s_2,\ldots,s_n$ is degressively proportional with respect to $p_1, p_2,\ldots,p_n$ if and only if:

(1) if $p_1 \geq p_2 \geq \ldots \geq p_n$, then

$s_1 \geq s_2 \geq \ldots \geq s_n$, and

(2) if $p_1 \geq p_2 \geq \ldots \geq p_n$, then

$$\frac{p_1}{s_1} \geq \frac{p_2}{s_2} \geq \ldots \geq \frac{p_n}{s_n}$$

The first condition determines how disproportionate can a degressively proportional allocation be. In other words, it sets the maximum possible over-representation and under-representation. Such a division is of course $s_1 = s_2 = \ldots = s_n$, namely division, in which each country regardless of the population receives the same number of seats in parliament. In this way, favors the less populous states at the expense of those that have the largest population. If for each $S > 0$, each country receives the number of seats independent of its population, the same if S is divisible by n, assuming that $p_1 \geq p_2 \geq \ldots \geq p_n$ is equal to the maximum over-representation $o_n = \frac{s_n}{S_{r_n}}$, and the minimum under-representation $o_1 = \frac{s_1}{S_{r_1}}$.

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Hence the conclusion that the smaller r_n, which is the ratio of the population of the smallest country p_n to the size of the whole population P, the greater its over-representation. It is practically unlimited, since r_n can theoretically take any small positive value. So again the solution departing from the classic proportions can lead to arbitrarily large over-representation.

Minimum under-representation in this case concerns the most populous country, and amounts to $o_1 = \frac{s_1}{S_{r_1}}$. If S is divisible by n, then equality is realized $s_1 = s_2 = \ldots = s_n$ and $o_1 = \frac{1}{nr_i}$, if not, the most populated country may have only one seat more than the least populated and, therefore, $o_1 = \frac{\frac{1}{n} + \frac{1}{S}}{r_1}$.

Concerning the fact that $r_1 \leq 1$, for a fixed S and n the minimum under-representation is limited by $o_1 = \frac{1}{n}$ or $o_1 = \frac{1}{n} + \frac{1}{S} \leq \frac{2}{n}$. It is easy to notice that with increasing n, it decreases to zero, that is, in theory it can take arbitrarily small, positive values.

5. CONCLUSIONS

In the current electoral laws one may find ways to accept a disproportionate allocation of seats. Deviations from the principle of proportionality may, for example, as electoral thresholds, favor large groups or in the case of degressive proportionality, small ones. In each of these cases, you can talk about the over-representation or under-representation understood as the ratio of seats allocated to the number of seats a party would receive, with an accuracy of rounding to integers, resulting from a perfectly proportionate allocation. It turns out that deviation from the classical proportions could in theory be unlimited. The over-representation may take an arbitrarily large value, and under-representation in some cases is complete – i.e. there is no representative of the group, however in some cases it close to zero. As a result, theoretically, in extreme cases, legal solutions accept totally disproportionate divisions made on their basis.

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VENTURE CAPITAL AND PRIVATE EQUITY INVESTMENTS IN THE CENTRAL-EASTERN EUROPEAN REGION

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Abstract

The attributes of the Central-Eastern European (CEE) region's venture capital and private equity market differ from its more developed Western-European counterpart in several ways due to the specific past of the countries consisting the entire CEE area. The paper's aim to present the most substantial characteristics of the CEE region's venture capital and private equity market, focusing on the changes that happened in the recent near decade. The findings are mainly based on statistical data and information from the business press. Nevertheless, the paper also deals with the CEE countries' relative position concerning their venture capital and private equity market's state of development.

Key words: *venture capital, private equity, Central-Eastern European region (CEE), characteristics, fundraising, investment activity, exits*

1. INTRODUCTION

Venture capital investments have a crucial role in financing of start-up or early stage companies with high growth potential. Transactions are made by financial intermediaries specialised in venture capital activity by purchasing ownership in a given enterprise for an interim period. Beside the provision of capital during the term of investment venture capitalists ensure indispensable services (e. g.: giving advice in strategic or business planning) to their portfolio companies in order to promote an appropriate value increase. For the investors, the primary aim of the transaction is to realize a return above the average by selling the ownership stake at the end of the investment term. It is important to mention that according to the terminology's interpretation, venture capital financing makes only the subset of the so called private equity investments, which provides equity financing in a similar structure for enterprises in growing or even more in mature status.[8]

Regarding the geographical importance, private equity investments are widely used in the Anglo-Saxon area (United States of America, United Kingdom). On the other hand as the developed Western European and American private equity markets reached a more mature status, the investors' focus started to orientate to emerging markets referring the existence of promising investment opportunities with higher return in the region. Within the emerging markets, the Central-Eastern European (CEE) countries form a specific group due to the economic transition what they passed through in the late

[8] In the remaining part of this study the expression private equity refers to venture capital investments as well.

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1980s and in the early 1990s. Simultaneously with this process and the developing of the financial systems, private equity investors appeared in the CEE region as an alternative source of financing.

The aim of this study is to examine the development of the CEE countries' private equity industry based on the near decade's (2002-2010) statistical data. The analysis will be presented from three main aspects which also give the structure of the entire study. Firstly, the paper presents the annual amount and the source of funds raised for private equity transactions, which will be followed by the annual value and type of investments also mentioning the most important sectors which were benefited from this type of equity provision. Finally, the third aspect concentrates on the divestments, their annual aggregate amount and the changes of the different exit methods' relative importance within the entire time period. Beside the data which relates to the entire CEE region the paper also deals with country specific information along different considerations (e. g.: private equity investments as a percentage of GDP). Therefore it will be possible to follow which countries had a more developed private equity market among the others and to what extent their relative position changed during 2002-2010. The study ends with the conclusions drawn from the analysis.

Data used in the paper derive from statistical surveys made by the Central and Eastern Europe Task Force, a special team created by the European Private Equity and Venture Capital Association (EVCA), in the early 2000s with the aim of focusing on the private equity industry only in the entire CEE region.[9] When registering the annual value of funds raised for private equity investments the Task Force concentrates to funds which have declared CEE as their target region,[10] whereas investments and divestments are considered by the target location of the transactions. It means that data concludes equity provisions to European companies and divestments from European companies, regardless of the location of the private equity firm (EVCA, 2011). Exits are measured at investment cost as investors decline to publish their real value for private reasons.

2. FUNDRAISING FOR PRIVATE EQUITY INVESTMENTS IN THE CEE REGION

In the Central-Eastern European region, the amount of funds available for private equity investments was primarily determined by how much these countries could benefit from foreign direct investments (Karsai, 2012). The high level of dependency on foreign capital flow can be explained by the fact that the short time period (around twenty years) following the economic transmissions in the CEE countries wasn't enough to accumulate appropriate amount of capital for private equity investments.

Although we couldn't find available annual data about funds raised for private equity investments before 2000, according to the EVCA's estimation during the recent twenty years, the total amount of capital allocated for private equity transactions in the CEE region was approximately 18.5 billion euro (Karsai, 2012). On the other hand, as of 2002 the changes of the CEE countries' attractiveness can be followed more specifically which showed a really dynamic improvement until 2007 (*Figure 1*).

[9]In their most recent Special Paper. the Task Force defines the Central-Eastern European region as the group of Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Slovakia, Slovenia and Ukraine (EVCA, 2011).

[10] By the EVCA Special Paper, it means that the annual funds raised for private equity investments don't "*include those funds that may allocate a portion of their capital to the CEE region but whose primary focus is elsewhere."* (EVCA, 2011, 33. pp.).

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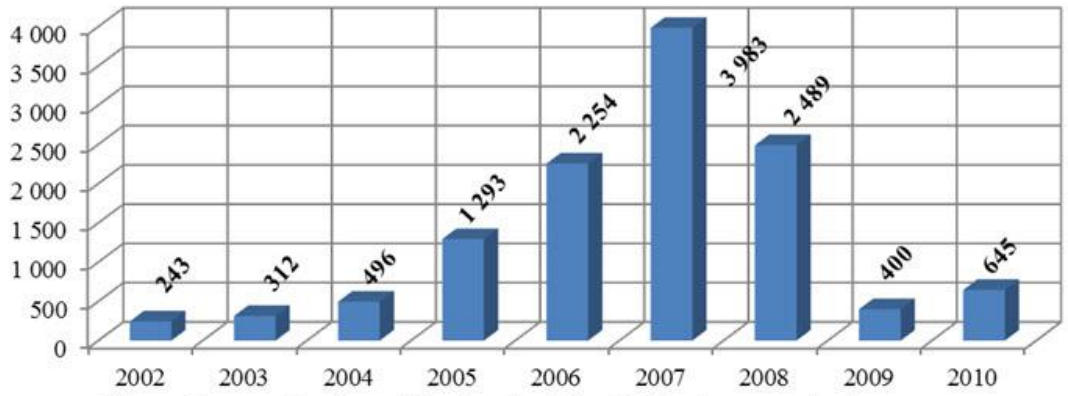

Figure 1: annual value of funds raised for CEE private equity investments, 2002-2010 (in € million)

Source: EVCA (2011), 5. pp; EVCA (2004), 6. pp.

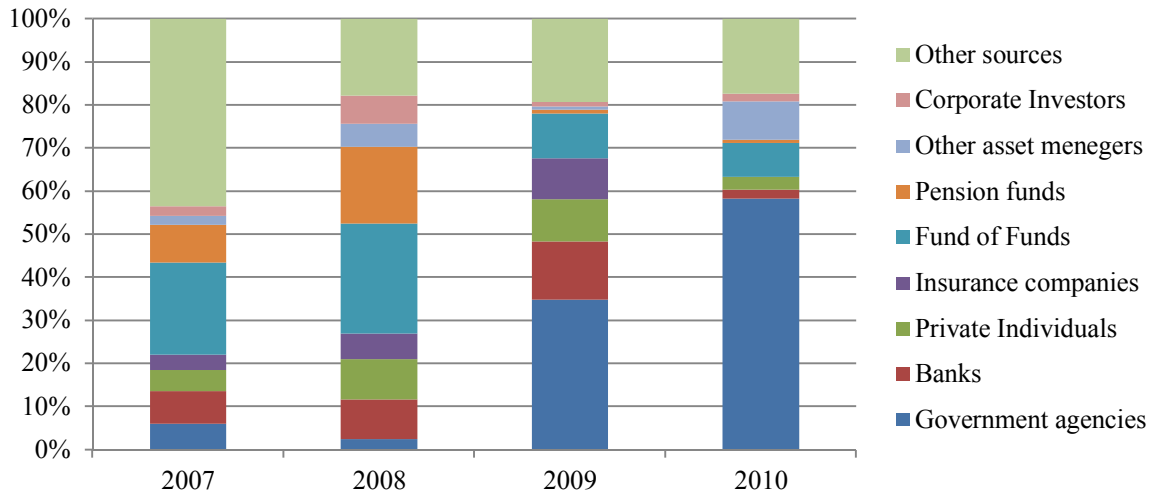

Figure 2: sources of capital raised for CEE private equity investments in 2007-2010 (% of total)

Source: EVCA (2011), 7. pp.

Limited partners (the investors of private equity funds) saw higher growth potential and investment opportunities with better return outlook in the region compared to the more overstocked Western European private equity markets. In the record year, 2007 the newly raised funds for private equity investments were nearly 4 billion euro, which meant a 77% jump from the previous year. Beside the investors' increasing interest, the rearrangement in the investments' structure also explained the rapid growth of the allocated capital. Similarly to the Western European markets, buyout deals started to take a dominant position in the region, requiring to raise bigger funds from managers because of these

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transactions' higher demand for capital. Unfortunately, by the end of 2007 and from 2008 the economic outlook changed dramatically and it had a really negative impact on the private equity industry's capital allocation segment. Due to the economic crisis limited partners (mostly institutional investors) lost confidence in the CEE region, which directed to an 84% slump in the amount of funds raised for private equity investments in 2009. As the economic uncertainty couldn't ease seriously in 2010, the level of newly allocated capital was lagged behind the 2005's level by 600 million euro.

Concerning the sources of capital available for private equity investments, relevant data collected by the EVCA's Task Force date from only 2007. About the previous 1992-2004 period the European Bank for Reconstruction and Development (EBRD) made a research, which stated that 40% of the investable capital in the CEE region[11] was secured by institutional investors (Karsai, 2012). However, according to the EVCA's statistics, from 2007 a rearrangement occurred among the fund providers making pension funds and fund of funds the two most important limited partners for private equity funds (*Figure 2*). Their portion from the totally raised capital was 30, and 43.5% in 2007 and 2008 respectively. The increasing influence of pension funds' was helped by the changes in government laws in the region. In order to adapt the more flexible EU norms the legal systems made it possible to these institutional investors to allocate their given portion of assets to private equity funds in order to to earn higher returns. Unfortunately in 2009 as the economic recession deepened, private sectors' role in the capital allocation activity decreased considerably giving back the importance of government agencies and international institutions in fundraising. In 2009 and 2010 these entities gave the 35 and 58% of totally raised funds respectively. Simultaneously with the changes in the sources of capital, the private equity funds' sectoral focus also modified between 2007 and 2010. While in 2007-2008 the 82 and 76% of newly raised funds were committed to buyout deals, the portion of these transactions reduced to 49 and 22% in 2009-2010 respectively. The emphasis was transferred to mezzanine financing and to funds with classical venture capital focus making together almost the half (48-48%) of the allocated capital in 2009-2010 (EVCA, 2011).

3. PRIVATE EQUITY INVESTMENT ACTIVITY IN THE CEE REGION

The annual changes in the value of private equity investments executed between 2002 and 2010 were by a similar trend as the fundraising activity in the CEE region's private equity market. At the beginning of the examined period, the volume of investments barely exceeded 500 million euro but in 2006 it jumped to nearly 1.7 billion euro, more than the triple of the amount made in 2005 (*Figure 3*). With it's 2,480 million euro of invested capital, 2008 was the record year but in 2009 the registered 2,447 million euro of investments almost reached the previous year's highest level. However, the negative impact caused by the economic recession to the region's private equity industry was felt already in 2009 as the number of transactions decreased by 40% (from 200 to 123 pieces) compared to 2008 (Karsai, 2012). The volume of investment value plummeted only in 2010 to 1,292 million euro, a level hadn't seen in four years, which was a 47% decrease relative to the previous year. The significant growth started in 2006 was driven by several factors. An indirect factor was the European Union accession of several Central-Eastern European countries in 2004, which conducted to a lower level of risk needed to take by investors who considered to execute deals in the region. Also helped with EU's eastern enlargement, the second factor was the significant growth in the amount of allocated

[11] In the EBRD study, Central-Eastern European region has a wider interpretation including Russia and the Commonwealth of Independent States (CIS) (Karsai, 2012).

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capital (see *Figure 1*) starting in 2005, but it had a positive effect on investments only a year later. Finally, the third factor was related to the increasing role of buyout deals. As these transactions needed a greater amount of capital, the increasing activity in this segment resulted in a higher annual value of private equity investments from 2006.

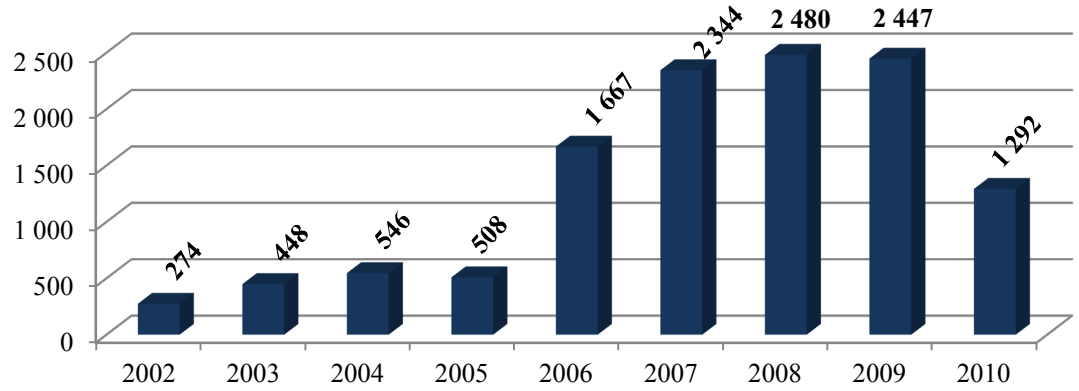

Figure 3: annual private equity investment value in the CEE region, 2002-2010 (in € million)

Source: EVCA (2011), 10. pp., EVCA (2004), 7. pp.

Proving the development of the Central-Eastern European region's private equity market, the distributions of investments by type of transactions showed a similar status as what existed in the mature Western European private equity markets. At the beginning of the examined period, the most important types of deals were the financing of the businesses growth phase (expansion capital) and the provision of replacement capital[12] making together the 44-58% of total investment value from 2003 to 2005 (Karsai, 2012, 2009). However, by 2006 when buyouts gained importance, due to their bigger size these transactions made up the 74% of total investment volume in the 2006-2009 period (EVCA, 2011, 2010 and 2008). Although buyout deals were executed in the mature stage of the enterprises (and tended to rearrange considerably these businesses' ownership structure) the hidden possible returns were high enough to attract limited partners to finance these transactions. After the economic depression in 2010 the portion of buyouts dropped to nearly 50% level again. The decline can be explained by the serious credit crunch making to leverage buyout deals more difficult. Instead of buyouts investments executed in the expansion stage of businesses increased their proportion of total invested capital up to 44% in 2010 (EVCA, 2011). Meanwhile, providing seed capital and the financing of start-up and early stage phase was really underrepresented in the entire period. In 2003, their portion of total investment value exceeded 5%, but then it decreased to an annual average of 1.5% between 2004 and 2010 (EVCA, 2004-2011). From 2003 to 2010 the same transactions' annual

[12] According to the EVCA's special paper, replacement capital refers to „the purchase of a minority stake of existing shares in a company from another private equity firm or from another shareholder or shareholders." (EVCA, 2011, 36. pp.).

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average proportion in the entire European Union was 6.4%[13], indicating the CEE region's underdeveloped venture capital market (EVCA, 2004-2011). Beside the private equity backed companies' life cycle the CEE Task Force also examined how the different sectors benefited from this special type of equity provision but only in the 2006-2010 period. Considering the value of investments, the chemical industry reached first place in 2006, due to a substantial Hungarian buyout transaction, sharing a 40% stake from the annual invested capital (EVCA, 2007). Regarding the entire 2006-2010 period communications sector had an impressive position with their annual average of 25% proportion of investment volume (EVCA, 2008, 2010, 2011). Financial services seemed as a preferred sector with their annual average of 9.2%, and also consumer goods and retail, which was at first place in 2009 and 2010 with its 35 and 25% proportion respectively (EVCA 2008, 2010, 2011).

Table 1: Private equity investments as a percentage of GDP in selected Eastern- and Western-European countries, in CEE and in the EU, 2002-2010* (%)

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Bulgaria	0,016	0,101	1,110	0,000	0,143	1,950	0,265	0,530	0,228
Czech Republic	0,037	0,052	0,019	0,112	0,315	0,143	0,294	1,010	0,133
Hungary	0,110	0,154	0,150	0,167	0,883	0,208	0,422	0,223	0,068
Poland	0,069	0,098	0,069	0,045	0,118	0,141	0,167	0,089	0,192
Romania	0,037	0,159	0,055	0,088	0,115	0,239	0,205	0,187	0,101
Slovakia	0,018	0,016	0,021	0,052	0,045	0,040	0,046	0,003	0,022
Slovenia	0,007	0,015	0,000	0,007	0,130	0,004	0,008	0,224	0,019
Germany	n. d.	0,116	0,231	0,247	0,313	0,437	0,370	0,114	0,186
Netherlands	n. d.	0,241	0,710	0,600	1,048	1,270	0,449	0,138	0,333
United Kingdom	n. d.	0,852	0,564	0,662	1,258	1,033	0,742	0,300	0,750
Total CEE	***0,054***	***0,088***	***0,096***	***0,073***	***0,221***	***0,190***	***0,201***	***0,241***	***0,119***
Total Europe**	***0,277***	***0,284***	***0,321***	***0,388***	***0,552***	***0,570***	***0,394***	***0,186***	***0,314***

n. d. = no data,

*according to the target country of investments, **according to investors' residence

Source: EVCA (2011), 16. pp., EVCA (2009), 11. pp., EVCA (2008), 7. pp., EVCA (2007), 5. pp., EVCA (2006), 6. pp., EVCA (2005), 3. pp., EVCA (2004), 8. pp., Karsai (2006), 1025. pp.

[13] The registering method of private equity investments made in the European Union differs from the methodology used by the CEE Task Force. European data includes the value of transactions made by investors domiciled in the EU, but in the case of the CEE region the estimation of invested capital is based on the target country of investments regardless to the investor's domicile.

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The Central-Eastern European private equity market's importance and relative state of development compared to the entire European Union can be measured with the investments per GDP indicator. According to data in *Table 1* between 2002 and 2005 it seemed that the region's private equity market existed in its early development stage as investments per GDP lagged behind seriously from the EU's similar figure. This reflects Karsai's (2009) opinion about the existed high growth potential in the Central-Eastern European private equity market. From 2006 a gradual closing up was noticeable to such an extent that in 2009 private equity investments as a percentage of GDP in the CEE region could exceed the EU's level. Unfortunately this was due to the fact that the CEE's private equity market reacted later to the economic crisis, while in Western Europe the volume of investments slumped dramatically, by 57% in 2009. The European situation moderately stabilised by 2010 and the spread between the CEE's and EU's investments per GDP figure nearly tripled proving the undermined confidence in the region among investors. With reference to the CEE countries' relative position, *Table 1* shows that in the 2002-2006 period Hungary had a particularly favourable place (first or second) according to the investments per GDP ranking. By 2007 due to the country's worsening economic status[14] Hungary dropped back to the ninth place and couldn't receive a medal in 2009-2010. As a contrary example, Poland ranked between the sixth and eleventh place in 2005-2009 while in 2010 it jumped up to the second place. The Czech Republic had a similarly developed private equity market, but during the examined period the Bulgarian market also ran a promising growth path. Investments per GDP data showed the concentrated status of the CEE region's private equity industry as the volume of transactions centred in mainly five countries (Bulgaria, Czech Republic, Hungary, Poland and Romania). On the other hand, outstanding data pertaining to several countries are distorted by one or two larger buyout deals making it harder to compare directly the developmental stage of the CEE countries' private equity markets. Comparing the investments per GDP data to the figures referring to Western Europe, the high growth potential in the region's industry became obvious. For example in the United Kingdom, between 2003 and 2010 the annual average of private equity investments as a percentage of GDP was 0.77% (and 0.599% in the Netherlands), but closer to CEE in Germany the figure was at 0.252%, half as big again as the average level of the entire region (0.154%) in the same period.

4. PRIVATE EQUITY DIVESTMENTS IN THE CEE REGION

During the investment process, the precise timing and executing of divestments are among the crucial momentums that have to be analysed carefully by the private equity investors. The possible exit routes are valued at the project screening phase stressing the important relation between the appropriate exit strategy and the level of realizable return for investors.

According to the data collected by the EVCA's Task Force, in the 2002-2004 period the value of exits considered at investment cost moved all in all between 123 and 236 million euro, making up the 0.1-1.7% of total volume of exits executed in the Central-Eastern European region (*Figure 4* and Karsai, 2009). The increasing number of successfully improved portfolio companies ready to sell by private equity firms was showed in 2005 when the value of divestments more than tripled (to 422 million euro) compared to the previous year. The upward trend continued moderately in 2006-2007 to such an

[14] In 2007 Hungary's real GDP growth rate was 0,1% making the worst economic performance among the CEE countries according to EUROSTAT data (EUROSTAT, 2012).

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extent that in 2007 the exit volume of the region's private equity industry made up a 2.2% share in the value of the entire European Union (Karsai, 2009).

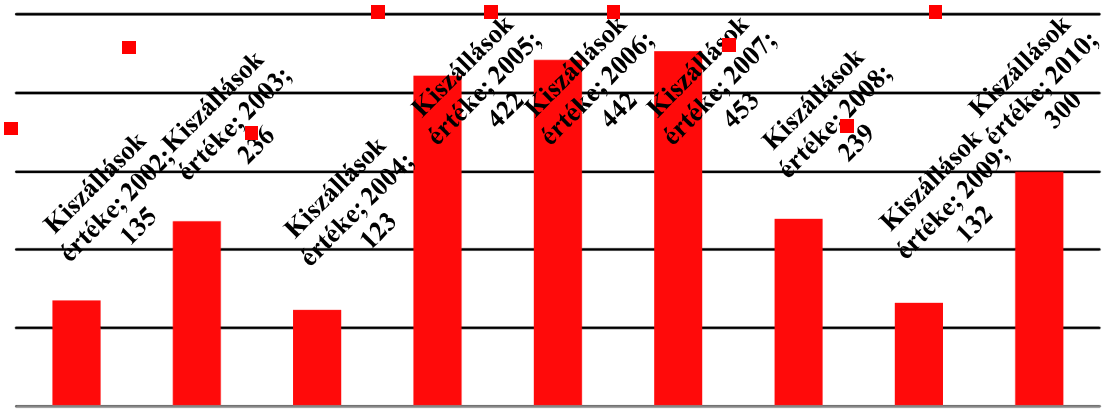

Figure 4: annual divestment value in the CEE region, 2002-2010 (exit value at investment cost) (in € million)
Source: EVCA (2011), 19. pp., EVCA (2004), 13.

The changes reflected partly the CEE's more active private equity market but it was also connected with the worsening exit conditions in the EU, which had already started in 2007 and was driven by disappointing macroeconomic factors.[15] However, from 2008 a serious decrease began also in the region proving how divestments were seriously vulnerable to the economic crisis. The value of 239 million euro in 2008 and the lowest point in 2009 with its value of 132 million euro equally reflected the lack of conditions for profitable exits. Investors decided to postpone the selling of their stakes and switched their focus to companies already existed in their portfolio. Although 2010 was the year of a temporary recovery in divestments, it is not expected to continue in 2011 due to the second wave of the economic downturn. As the problems related to European debt crisis escalate to the private equity market, the exit opportunities will be certainly overshadowed in 2011.[16] In accordance with the EVCA's research during the 2002-2010 period in almost every year, Poland had the largest annual value of divestments among the Central Eastern European countries, which is highly correlated with its relatively well developed and active stock market. In the years of the financial crisis exit transactions executed in the Czech Republic had an also serious importance, for instance in 2009 the value of these transactions (52 million euro) added up to nearly 40% of the total exit amount in the region (EVCA, 2011). Meanwhile investors turned their attention from the Hungarian market where despite the considerable volumes of exits in 2007 and 2008 (199 and 76 million euro) the country's risk assessment deteriorated so deeply in the previous years that only 6 and 8 million euro divestments

[15] By 2007 the value of divestments made in the European Union dropped back by fifth in comparison with 2006 (Karsai, 2009).

[16] By the time the study was written, the EVCA's Task Force hasn't published the Central Eastern European region's private equity industry statistics for 2011.

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were made in 2009-2010 respectively (EVCA, 2011). Considering the different exit methods the most widely used strategy between 2003 and 2010 was the so called trade sale[17] accounting for an annual average stake of 41% in the total exit volume in the CEE region. Public offerings, which generally have the most promising return outlooks represented a 15.26% annual average during the 2003-2006 period, but as the economic conditions worsened from 2007 private equity investors' divestments by public offerings almost entirely vanished from the market. The most serious year was 2008 with its amount of 200,000 euro of public sales in the framework of one transaction. An interim recovery occurred in 2009, when the value of IPOs[18] jumped up to 17,5 million euro, but then it hit a low again at 1.5 million euro in 2010. The recession had an influence not just on the serious decrease in public sales but also on the growing volume of write-offs related to loss-making transactions. In 2010 private equity investors cancelled more than 82 million euro from their portfolios making a tenfold amount of write-offs compared to the 8.7 million euro average registered between 2003 and 2009. At the same time secondary buyouts, when a private equity firm sells its portfolio company to another private equity firm, came to the front as they accounted for an annual average of 25.27% stake in the total volume of divestments in the CEE region contrary to its 6.5% average proportion in 2003-2006 (EVCA, 2004-2006, 2008, 2010 and 2011).

5. CONCLUSIONS

Until the economic recession in 2007-2008 the Central-Eastern European region's private equity market showed a really impressive development and more similarity in its operating characteristics compared to its counterparts in the more developed Western European countries. The value of funds raised for private equity investments passed through a dynamic increase from 2005 indicating the growing interest from limited partners (institutional investors) toward the CEE region. Although the higher level of risk connected to these transactions remained in time, a vivid activity also started in the investment side of the market by 2006. The structure of transactions followed the western market's pattern as buyouts tore out a more greater proportion of the investment volume, while the provision of seed capital and the financing of early stage couldn't close up to the level seen in the developed Western Europe.

Unfortunately, as the crisis emerged the developmental trend of the region's private equity market was broken in 2007-2008, proving the markets' serious vulnerability in the CEE countries and their great dependence on the flow of foreign direct investments. Fundraising opportunities narrowed down for private equity investors referring to the lost confidence from institutional investors. At the same time investment activity also decreased turning the investors' focus to develop their portfolio companies while project generating was pushed into the background. The recessive environment made the execution of exits more difficult particularly in the case of public offerings, as these transactions almost totally vanished from the region's private equity market by 2008-2009. Simultaneously with the more difficult divestment process the holding period of the investors' stake in their portfolio companies forced to become longer and due to the higher number of loss-making deals the volume of write-offs also increased. In 2010 the Central-Eastern European region's private equity market showed the marks of an only temporary recovery as the debt crisis pressed heavily on several European countries made the conditions unfavourable again to the market's fundraising, investment and exit

[17] To sell the portfolio company to a strategic investor, for example to a bigger company in the same industry.

[18] IPO refers to Initial Public Offering, when an enterprise decide to list its shares publicly in a stock market.

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segment in 2011. Withering away the second wave of the crisis, the region's private equity industry could regain strength with respect to its unexploited but high level of growth potential, which could ensure a more attractive return for investors interested in the region compared to the overstocked Western European markets.

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READINESS OF THE ORGANISATION TO ENGAGE EMPLOYEES IN THE STRATEGY CREATION AND IMPLEMENTATION PROCESS

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Abstract

It seems to be obvious that the observed increasing role of human capital in the activities of modern enterprises is conducive to perceive it as a key factor in their development. Evidenced by the numerous publications and ongoing research, which shows that the change of conditions in the economy, should result in reviewing the role of employees and their participation in strategic management. This gives the ability to create value, and thus achieve competitive advantage. However, it is undoubtedly related to the readiness of the entire organization to implement particular solutions. The purpose of this paper is to analyze the strategic issues across the organizations ready to implement the concept of employee involvement in creating and implementing strategies.

Key words: *strategic management, employee engagement, strategy creation*

1. INTRODUCTION

According to W. James, *"The deepest principle in human nature is the craving to be appreciated."* Hence, the significance of engaging individuals in the most important strategic decisions concerning the enterprise is essential from the viewpoint of their motivation to implement the created strategic projects. In accordance with the trends in the contemporary management systems observed by W. Janasz *"efforts are oriented on using tools which enable the transformation of the vision, mission, strategy into operational goals for… the individual employees"*. [Janasz, 1999, pp. 38] Therefore, the aim of this study is to present the matters related to the aspects of the organisation's readiness to include its employees in the works concerning strategic issues and related conclusions from the qualitative research conducted by the author.

Participation in the strategic management process, that is engaging a larger group of employees in its organisation, is undoubtedly much more complex, laborious and time-consuming than authoritarian decisions. However, this issue seems to be extremely important from the viewpoint of rank-and-file employees and strategists in the organisation. [Tonnessen, Gjefsen, 1999, p.740] This is because, as the conducted research proves, 85% of managers spend merely one hour a month discussing strategic issues, and only 5% of employees declare complete understanding of the strategic direction in which their enterprise develops. What is more, it is this lack of understanding and the lack of support from the management staff that are the top barriers in implementing changes. [Renaissance Solutions] The priorities which enterprises set themselves in this area also seem to be symptomatic, since as many as 83% of the examined American companies declared *"developing appropriate motivation in terms of employee identification with the strategy of the company"* as the primary goal in the area of building the process of communication. At the same time, only 37% of enterprises stated satisfactory effectiveness with this respect. [Anderson, Edmiston, 2007] Several aspects constituting the readiness of the organisation to engage employees in the strategic management process will be presented below.

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2. MATURITY OF THE PARTICIPANTS IN THE STRATEGIC MANAGEMENT PROCESS

At the beginning of the discussions on the participants in the strategic management process, it needs to be indicated that it is indispensable that they demonstrate strategic readiness, which means that they have an appropriate type and level of skills to perform the crucial internal processes related to creating and implementing strategic concepts. At the same time, it is necessary to strive for the highest possible level of leadership, comprising all the levels of the organisational structure, in order to motivate the team to make maximum effort so that the strategy implementation is successful [Kaplan, Norton, 2004, p. 76]. This happens when "*all employees feel the community of goals, share the vision of the company's development and understand how their own actions may contribute to the success of this strategy"* [Kaplan, Norton, 2004, p. 85]. In order to ensure the indispensable strategic coherence for the organisation, it is necessary to enable employee participation in the entire strategic management process. This is, however, closely related to having proper competences, which seem to be needed by all medium-level managers, chairmen of the management boards, and rank-and-file employees, who participate in creating strategies.

Undoubtedly, participation opportunities change with the company's growth. A dilemma may arise concerning reorientation of the functioning solutions in which individual employees performed well. Yet it may be the case that they find it difficult to keep pace with the organisation's development, and hence to adjust to the changeable conditions of operating in a flexible manner [McCune, 1992, pp. 51-19]. This is because it is certain that not all employees will equally participate in the evolution of the strategic management process in the enterprise and not all of them will be equally engaged in strategy implementation. Thus, the ability to adjust the resources possessed by the enterprise to the opportunities which occur with respect to participating in the strategic management process in a flexible manner is a true accomplishment. This is because it is supposed to draw on diversity instead of adopting compromise or conservative solutions, and unilateral communication should be replaced with polyphony, which will build multidimensional prospects for the enterprise development.

It is apparent that employee participation in strategic management is not a motivating issue for everyone. It needs to be realised that not every member of the organisation wants to be entitled to decide about its future. This is concerned with the necessity to take responsibility, have a certain degree of autonomy or handle new emerging challenges, which in turn may cause justified fears of and reluctance towards changes [Ducote, 1992]. Hence, in order to ensure integrity of the entire strategic management process, predispositions and skills of the employees who are supposed to be included therein, need to be taken into consideration.

Actions taken by employees may exert both positive and negative influence on the results achieved by the organisation. The direction which they will assume is indirectly dependent on the level of trust between managers and their subordinates. The results of the conducted research prove that theoretical declarations of employee participation are not always reflected in their everyday duties. This is confirmed e.g. by the research conducted by the Towers Perrin Consulting Group, which included 15,000 employees of enterprises located in Germany, the Netherlands, Great Britain, Spain and Italy. Many managers who are responsible for the strategic management process perceive including a larger number of participants as a potential threat not only to their own scope of power, competence or authority but also to the effectiveness of the enterprise activities. On the other hand, they realise that this is necessary for obtaining engagement and high level of motivation in the organisation. Hence, building the culture of trust, due to which employees have the sense of participation and managers contribute to creating actual participation opportunities in strategic management for a large group of participants, seems to be the crucial aspect [Pech, 2009, pp. 27-32].

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"*Numerous practitioners of the contemporary corporations frequently emphasise that, along with the opportunities for the employee self-fulfilment, values of taking strategic decisions as a team occur in the management process*" [Mendel, 2001, p. 51]. This is the case because every time managers are faced with making a strategic decision, they first decide how this decision is to be made. Thus, they consider who has appropriate information needed in this process and, as a consequence, should actively participate in it. Hence the guidelines of management theoreticians, who indicate participation in strategic management as a potential source of competitive advantage. The common aspect in this subject matter is focused on the complexity of the environment in which organisations operate, which determines the achievement of success exclusively if solutions accounting for a broad approach to the decision-making process and employing various resources and carriers of knowledge are implemented [Ashmos, Duchon, McDaniel, 1998, pp. 25-26].

3. STRATEGIC MATURITY OF THE ORGANISATION

Every organisation is characterised by its specificity, which is concerned with invisible habits, standards, groupthink models and intentions that each of the participants is trying to fulfil. Therefore, it is so difficult for managers to inspire people or share knowledge with them. "*Theoretical knowledge or thinking of organisation design mean nothing until people gather to make sense of it together*". Thus, it is conversation and extensive exchange of thoughts that helps stimulate employee thinking with respect to each component of the strategic management process [Ryde, 2009, pp. 157-158]. Due to that they are more aware of the relations which occur between its individual components.

Strategic maturity of the entire organisation is essential in the conditions of continuous competitive pressure, dynamic changes of the environment, and above all the observable decrease of employee engagement in achieving strategic goals. The conducted research shows that in the USA as many as 74% of employees are neutral or unengaged in implementing the company's strategy, and merely 26% may be considered engaged in the activities that serve this purpose [Colan, 2009, p. 3]. The most frequent reason for the lack of employee engagement is the attitude of the senior management staff. According to decision-makers themselves, they are unable to formulate clear goals, define tasks or areas of responsibility, and what follows, communicate the vision or create the atmosphere of cooperation and joint responsibility for the results of the enterprise [Bailom, Matzler, Tschemernjak, 2009, p. 156].

So the phenomenon called an "engagement gap" emerges, that is a certain distance between the possessed knowledge & qualifications and the opportunities & willingness to apply them [Haudan, 2008, p. 13]. The implementation of the strategy with the lack of employee identification therewith, thus without the crucial cooperation conditions with this respect, should be considered the reason for this situation. It is necessary to not only inform employees about strategic plans but also, and primarily, to concentrate on making them realise their own role in effective performance [Juchnowicz, 2010, p. 40]. They often fail to see connections between performing operational activities and achieving strategic goals. Hence differences between potential opportunities and actual results achieved by the enterprise.

Strategic organisational awareness is a necessary condition for the natural evolution of the concept of the participants in the strategic management process. It proceeds towards maximum flexibility and use of the potential available in all organisation units. The presence of a strategic dialogue in the organisation is a manifestation of its existence – *"it is a process of agreeing on a strategy by both the management and employees at all levels, where a large group of employees begin to understand the*

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strategy. This understanding is more effective if employees participate in creating various components of the strategic document" [Stocki, Prokopowicz, Żmuda, 2008, p. 226]. It is creating the strategic dialogue that proves the readiness of the enterprise for gradual changes in expanding the group of participants of the strategic management process.

Organisational maturity, understood as an attempt to reconcile seemingly contradicting tendencies, plays a significant role in this process. One of the tendencies is applying a certain automatism, that is systems and procedures supporting efficient implementation of the processes functioning in the company. The other, in turn, is internal innovativeness, creativity and entrepreneurship, which permit the release of the hidden potential of the organisation. The enterprise development is accompanied also by the change of the role played by the strategy, from its lack, to creating an organising document, followed by an operation control instrument, and finally an instrument of using potential and exceeding capabilities. Hence, a natural change of forms and frequency of the strategic dialogue conducted on this occasion is crucial [Stocki, Prokopowicz, Żmuda, 2008, pp. 231-233].

It seems that the strategic readiness of the organisation to increase employee engagement should be based on:

- the awareness of managers that it is necessary to include employees of all organisation units in the works on creating a strategy or establishing goals, which translate into more effective implementation,
- creating a culture supporting innovativeness, creativity and willingness to make decisions [Ahlbrandt, Leana, Murrel, 1992, p. 91],
- making employees aware of the relations between strategic goals and everyday operational activities,
- ensuring appropriate level of communication and openness with respect to individual elements of strategic management,
- maximising efforts on using the employee competences and knowledge, at the same time expanding them by the issues related to building a strategy,
- employee willingness to co-decide and, as a result, to show initiative with this respect.

4. APPLYING THE OPENNESS PRINCIPLE

One of the management methods which facilitates the development of participation is the open-book management concept, which enables insight of employees into all areas of the enterprise activities, thus changing running it into a game that is a result of the joint actions of the aware employees. This is when the organisation becomes flexible and capable of living up to the challenges of the market and all its employees perceive themselves as its co-owners. Hence, they are jointly responsible for the strategic directions which will be taken and the strategic plans which are indicators of the enterprise development as well as their implementation. The transparency of documents, including financial and strategic ones, undoubtedly contributes to engagement increase by the possibility to better understand the consequences of the decisions taken. Hence, in the case of long-term action plans more attention is given to operational details, which turn out to be the way to permanent success [Stack, 1994]. This is clearly confirmed by the results of the conducted research, where as many as 81% of managers declare support for this type of actions and as many as 34% of them disclose all documents, even the strategic ones, to their employees [Caggiano, 1993, p. 16].

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In the case of strategic decisions, benefits from employing participatory decision-making styles are greater due to triggering the effect of teamwork and, above all, supporting the identification of the employee goals with organisation strategic goals and, what follows, reducing conflicts (both potential and real ones) as well as facilitating the learning process by participating actively in the strategic management process [Mączyński, Witkowski, Jarosiewicz, 1999, p. 117].

However, it needs to be strongly emphasised that participation in decision making and delegation of decision-making powers are entirely separate and independent elements constituting the process of decentralised strategy creation. This is because the decision-making area alone is one of the elements of the whole process of strategy creation and implementation, which is also composed of the strategic analysis, conclusions and recommendations arising therefore, or creating concepts of further development together with programmes of their execution. Thus, achieving effectiveness depends on the integrated strategy creation process which will take maximum advantage of the benefits coming from these elements [Andersen, 2005, pp. 46-48].

5. INTEGRATING AROUND A VISION

"The largest obstacle of most mangers' way to great leadership is the lack of a vision to which they could devote themselves". Therefore, the ability to create a captivating vision, which not only creates a strong organisational culture but also constitutes a strong stimulus moving the organisation in the desired direction and providing energy and motivation for fulfilling dreams together, is so important. Underestimating the strength which may be generated by a vision created at all organisational levels proves to be one of the major obstacles on the way to effective strategic management. Thus, it is worth emphasising that effective verbalisation of a vision may provide guidelines, which turn out to be indispensable in the everyday decision making in a manner which integrates employees and contributes to going in the same direction. [Blanchard, 2007, pp. 20-23] Hence, leadership at the strategic level should focus on:

- determining a significant goal for the entire organisation,
- creating an image of the future,
- specifying a common system of values, which determines the direction of the company's operation. [Blanchard, 2007, pp. 24]

It is worth emphasising that it is desirable to engage employees in the process of creating a vision and establishing its concept such that is reflects common dreams, aims and values, and shows them how they can contribute to the enterprise development. This is extremely important because, according to K. Blanchard, "*...leadership is the way to achieving the aim. If the leader and their followers do not know where they go, the type of leadership is of no significance"*. [Blanchard, 2007, pp. 19] This approach is verified particularly in the face of a crisis, when significant obstacles occur on the organisation's way and the analysis of the feasibility of the goals established before and strategic revision become indispensable. Then, reference to common values and visions, as the direction where one still needs to follow, as well as seeking effective ways of arriving there prove to be essential.

Hence, the most important aspects to which managers pay attention are creating common values for the whole organisation and a clear vision of its future. Their presence permits freedom and courage when making decisions by employees, with the minimum level of monitoring and control mechanisms. At the same time, the organisational climate, which releases creativity, willingness to seek innovations, openness to changes and courage to go into the future, is significant. [Rowe, Nejad,

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2009] It is also important to build the culture of trust, which contributes to creating effective development concepts.

It is worth emphasising that the vision of the organisational future should not be created solely for the own benefit of enterprise owners but its existence is justified only when it is common to all participants of the management process, who are engaged in its creative materialisation. Thus, strategic leadership plays the role of influencing employees not only by creating a vision, but also by communicating it, that is by determining a common direction of actions and inspiring all participants of the strategic management process. [Ansoff, 1985, pp. 170] Hence, this is an integrative role, which outlines the framework of proceeding along a common development path.

6. ROLE OF TEAMS IN STRATEGY CREATION AND IMPLEMENTATION

The individual stages of strategic management may occur simultaneously or be executed in a flexible sequence. This is why employee engagement may be partial or holistic, one-time or repetitive. It seems that one of the solutions to the greatest extent integrating the opportunities of employee participation in the strategic management process, which were described above, may be organising fixed cross-functional and cooperating task forces, which play the role of councils and committees that approve and co-decide about strategic issues. An important aspect supporting the learning process by participation is a series of regular cross-unit employee meetings related to achieving strategic goals and their influence on the whole enterprise. They are aimed at correcting operational actions on the ongoing basis and providing information on following the strategic direction jointly, as well as supporting individual implementation programmes. It is important that the co-management process be based on the ability to perceive employees in the categories of co-owners and, mainly by taking decisions, exist at each level of the organisation. "*All this creates team play. These intensive meetings introduce continuity of learning, which is a significant education factor. Communication, sharing information and decision making constitute the entirety of this process"* [Lisiecki 2001, p. 259]. In this case, priority undertakings are not managed by single managers but by a group composed of experts in a given field. A possible strategic move may be presented in the form of a business plan, which each time specifies the vision of a particular action, the type of the adopted strategy serving permanent distinction from the competition, and the manner of performing it in the 12-18-month perspective. The practice of enterprise operation proves that this organisation model allows the increase in the number of cross-functional initiatives. The discussed opportunities refer to the prospects of the entire company and its potential, and not only single departments. Hence, the effect is constructive talks in a large group of specialists from multiple fields, high acceptance of ideas and, what is most important, their fast performance [Chambers 2009, pp. 133-137]. Undoubtedly, a necessary condition for implementing such a model effectively is eliminating the inflexible structure and managers' consent to abandon the top-down management style in favour of co-management. It is also worth emphasising that "*a scarce number of managers are able to focus on more than three major goals at the same time"* [Brilman 2002, p. 160], which means that a larger group of persons participating in determining and implementing them ensures elimination of the danger of failing to achieve the specified goals or achieving them only in part.

It seems that teams consisting of specialists from various disciplines and a representative of the management board are a beneficial alternative for the classic manners of organising the strategic management process. Employees demonstrate a high level of engagement and detailed knowledge on the processes occurring within a given project team. It may be said that such teams fulfil a function of comprehensive strategic management – they form the architecture and determine the course of

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individual processes, they make sure the processes proceed correctly and integrate the processes which constitute it. Due to that the entire system demonstrates higher integration and may be constructed based on feedback [Kaplan, Norton 2010, p. 281].

7. CONCLUSIONS FROM THE CONDUCTED RESEARCH

The research conducted by the author in the years 2010-2011 included nine cases of enterprises which declared the application of employee participation in the strategic management process. Observation and direct interviews with representatives of the management staff – chairmen and their deputies as well as medium-level managers – were the used research methods. Additionally, the source documentation of the examined enterprises, including organisational documents, internal plans and studies, and in some cases parts of strategies, were subjected to analysis.

In each of the examined cases, an evolution of the strategic management process, which changed with the dynamic growth of the organisation, was observed. This evolution was accompanied by the idea to increase employee participation in this process, and various instruments serving effective implementation of the commonly taken strategic decisions were adopted. The examined enterprises were also characterised by appropriate strategic awareness. As a result of the carried out research the analysed enterprises were diagnosed for their level of participatory advancement.

What follows from the conducted research is that the enterprises demonstrated diverse levels of participatory advancement and included employees in individual areas of strategy creation and implementation to varying degrees. It resulted from different premises and opportunities. It was also determined by certain restrictions with respect to the conditions facilitating the increase of employee participation.

It seems, however, that the difficulty of implementing the concept of participating in all the examined enterprises may be blamed on the persons who are to be potentially engaged in the strategic management process. Convincing them to take actions and show initiative involves the manager's appeal to the "*subjective expected usefulness of this initiative"* [Bacharach, 2008, p. 196] – therefore, the process needs to be accompanied by an appropriate motivation system. And although an opportunity to participate and joint responsibility for the direction of the company's development themselves may be considered a motivating factor, additional elements, which will have a supportive impact, are not seldom required.

Moreover, the results of the research explicitly indicate that attention should be primarily drawn to the openness and transparency of actions. What is more, winning understanding and acceptance of strategic actions often requires focusing on tactical and operational issues first, since they increase credibility and make the issues of far-reaching development plans, which are intangible for employees, somehow more real. Due to that the created strategic awareness is more comprehensive. It is also important to build the internal motivation of the team effectively, among others by specifying individual and team goals, which will correspond to the general strategy of the organisation, and next to prepare motivation systems that will be adapted to them. In the analysed organisations, the opportunity to participate in the strategic management process was a certain motivation for the employees, and yet it was often emphasised that it is important to reinforce its potential by ensuring an appropriate gratification system.

One of the conclusions emerging from the carried out research is the necessity to ensure identity of employee goals with organisation goals. Employees need to understand the organisation's philosophy,

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culture and direction of activities perfectly. Only then are they able to contribute to its development and positively influence the effectiveness of its operation. This is because participating in making strategic choices of goals, values and aspirations is one of the reasons why employees appreciate belonging to the organisation.

8. CONCLUSION

In conclusion of the above discussions, the reasons for which it is important to recommend potential opportunities for employee participation in the strategic management process should be summarised. It seems that the concept of participation may be one of numerous issues worth including in the current debate on the future of this process and the form it ought to assume. Many contemporary researchers express in their studies the necessity to seek new approaches which will allow the reinvention and redefinition of the theory and practice of the strategy creation process [Caldart, Ricart, 2004, pp. 96-104].

It is crucial especially in the context of the knowledge which is being created alongside, the knowledge that enables the application of the theoretical and practical implications in creating and maintaining competitive advantage [Salmador, Bueno, 2007, p. 367]. The theoreticians representing the cognitive model argue that the higher the level is of employee awareness and knowledge of the actions and decisions taken, the more useful information and observations occur in the enterprise [Tegarden, Sarason, Childers, Hatfield, 2005, p. 76].

The success of the today's enterprises requires considerable revaluation of the fundamental assumptions referring to both the role of an individual in the organisation and the work performed by them. Hence, there should be a change in the leaders' convictions towards thinking that people are no longer mere employees but rather partners who largely contribute to going in the specified strategic direction. As a result, the superior-subordinate relation should transform from the definition of partnership into partnership relations, where both parties have equal rights. Following this train of thought, the leadership style should be modified and, instead of giving instructions, leaders ought to convince employees about the reasonability of the actions taken by them. [Drucker, 2009, p. 26-30] This is possible due to the participatory leadership style and including employees in individual stages of strategy creation and implementation so that their abilities to co-decide about the strategic choices of the enterprise increase.

Hence the reasonability of the statement that employee participation in the strategic management process and, consequently, a higher level their strategic awareness and knowledge on the individual stages of this process will translate into the increased engagement in strategy creation and implementation and will facilitate the process of communicating it, thus contributing to the growth of effectiveness of the strategic management process.

Therefore, it is so important that the organisation be characterised by appropriate maturity for engaging employees. In order to make it possible, it is crucial to create proper conditions which will ensure readiness of the organisation to implement the concept of participation and be based on an appropriate level of strategic awareness. It primarily refers to accepting and supporting the idea of engaging employees as an element which may ensure greater effectiveness of executing the prepared developmental concepts.

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WHY IN THE FAST GHANGING NOWADAYS BUSINESS ENVIRONMENT STRATEGIC IMPROVISING (REAL-TIME PLANNING) VERSUS STRATEGIC PLANNING?

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Abstract

Businesses need to move forward forever, because the only way they learn is only by anticipating actions and after that think about the consequences of these anticipated actions. The restless ones invent new strategic objectives and launch strategic thrusts within existing forms. Nowadays in fast changing business environment and new economic order more managers realize that strategic planning is out of step of the new demands Still not few managers are followers of strategic planning, as this type of planning has served the world for decades, nevertheless they find the plan less helpful. But as the global economy is becoming too complex, too dynamic, too unpredictable not only for managers, more and more people seek new alternatives as one of them – strategic improvising (real-time planning). The core idea behind it is "from small beginnings great things can come, if a strategy is directed and purposeful and people are willing to improvise.

Key words: *fast changing business environment, strategic planning, strategic improvising, interactive and dynamic process*

1. INTRODUCTION

Businesses need to move forward forever, because the only way they learn is only by anticipating actions and after that think about the consequences of these anticipated actions. J. Gleich (1), one of the chaos theorists tells us that "the only way to know how complex systems will behave after they are modified is to modify them and see how they behave". In our case that means that the only one way one to understand how a strategy will affect a complex organization is to anticipate action on multiple fronts, monitor the effects and if there is a need to make the appropriate adjustments.

2. STRATEGIC IMPROVISING VS STRATEGIC PLANNING

The core idea behind strategic improvising is "from small beginnings great things can come, if a strategy is directed and purposeful and people are willing to improvise (2). Miles Davis the great jazz trumpeter is known as innovator of more distinctive styles as cool jazz, hard bop, modal playing and mainly in free form explorations as restless one, constantly seeking. The same is with businesses, the restless ones invent new strategic objectives and launch strategic thrusts within existing forms. Like jazz improvisation is not limited to a single form, strategic improvisation is not the only one form. For example there is another form, the method SCRUM (coming from rugby – the game is stopped after crash between the most heaviest and powerful players from the two teams for the ball, and after that stated. In business especially in managing people this is a method in which in every two weeks, the team reconsiders its priorities and on that basis objectives are defined).

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Nowadays in fast changing business environment and new economic order more managers realize that strategic planning is out of step of the new demands. If we review the process contributions of the strategic planning after James Brian Quinn (3) as follows:

1. they create a network of information that would not otherwise be available

2. they periodically force operating managers to extend their time horizons and see their work in a larger framework

3. they require rigorous communications about goals, strategic issues and resource allocations

4. they systematically teach managers about the future, enabling the managers to calibrate their short term or interim decisions with more fact supported intuition.

5. they often create a positive attitude, a comfort factor, concerning the future; managers look ahead with more certainty, and consequently are more willing to make commitments the extend beyond the new horizons.

6. they often stimulate long tem "special studies "that can have high impact for specific or critical strategic decisions

Still not few managers are followers of strategic planning, as this type of planning has served the world for decades, nevertheless they find the plan less helpful. But as the global economy is becoming too complex, too dynamic, too unpredictable not only for managers, more an more people seek new alternatives as one of them – strategic improvising (real-time planning).

Most popular criticisms of strategic planning formulated by L. T. Perry, Randle G. Scott and W. Norman Smallwood (2) are:

1. A lack of flexibility – because strategic planning over specifies means it lacks flexibility and may exclude or postpone a new better solution

2. A lack of innovation – planning limits innovation by projecting the past into the future

3. An excuse for inaction – planning restricts learning because it is an excuse for inaction

4. An invitation to play games – when recourses are allocated because of plans and not on previous performance, the strategic planning process invites managers to play games

5. An avoidance of behavioral solutions – planning leads to structural, not behavioral solutions

What is strategic improvising?

Still a lot of managers assume strategic planning, nevertheless irrelevant as better than nothing, as they do not know or do not accept the new alternative of strategic improvisation or real time planning.

Strategic improvising provides guidance and direction sought by the managers, and it responded to all the raised concerns about strategic planning.

Strategic improvising is a real time process, promoting flexibility and action orientated responses.

Strategic improvising creates a high rate of focused innovation trough launching high frequency (low impact) strategic thrusts pointed out in a well defined strategic directions.

These high frequency (low impact) strategic thrusts are also fairer-all company's individuals and teams though their thrusts prove the value of their ideas through action and experimentation, not through preliminary elaborated strategic plans that may not realize their stated goals.

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Strategic improvising is team based, not a top-down process, directed towards behavioral solutions.
Strategic improvising has even more attractive attributes:

- in meeting the challenges of the new economic order
- in promoting the environment of company's individuals and teams.
- in responding to the shift from routine to non routine organizational work

Strategic improvising is successful in business environment, where strategic planning fails.
Another way to compare these two models is by figures.
Fig. 1 represents strategic planning

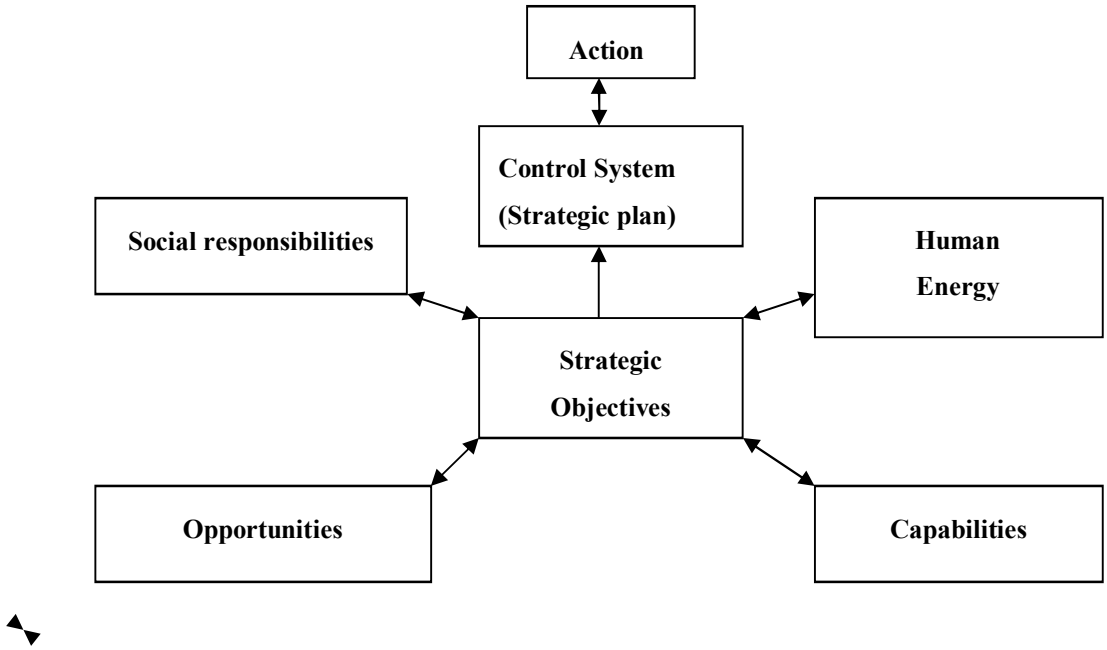

Fig. 2 represents the strategic improvising model.

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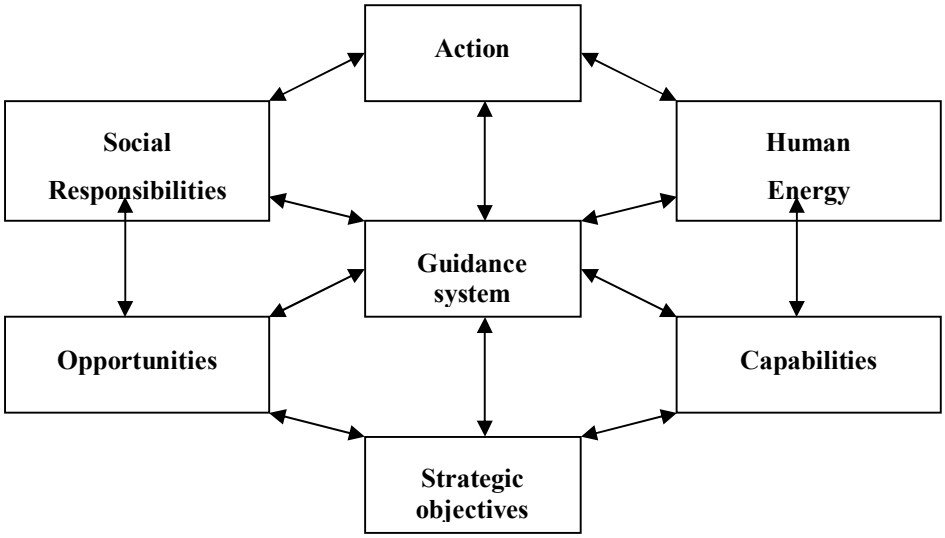

Comparing the two figures respectively fig 1 for strategic planning and fig. 2 for strategic improvising the following differences can be observed:

First – strategic improvising is much more interactive and dynamic than strategic planning. With one and the same building blocks there two-and-a- half times as many two-way interactions in fig 2 (strategic improvising), than fig. 1 (strategic planning.) (4). The strategic improvising process guides strategic thrusts through the continuous push-pull of different perspectives. Strategic planning trajectory is more even than strategic improvising where because of minor adjustments the trajectory is uneven. The process in fig 1 is that of strategic planning reflects the strategic thinking. Whereas in fig 2 the process is lot like the process of tightening the nuts and bolts that hold a tire on a car. On the basis of real-time information the certain company tightens up one factor as much as it is thought to be necessary, then moves to another factor and if needed is possible to return to the first factor and so on. This action represents the interactive nature of strategic improvising which involves continuous interactive adjustments when a need occurs.

Second – the difference between strategic planning and strategic improvisation is related to when the action occur. In strategic improvising the action is pulled more tightly into the core or interactive loop that is the strategic improvising process involves a continuous flow of thinking and acting. In contrast in strategic planning is a process of starts and stops that is planning stops when action begins and restarts when planning stops and when action is completed a new plan is needed. This means that the strategic plans proceed unchanged during a planning cycle. The moment of action in strategic planning is the projection of the past in the future. In strategic improvising the action is on the basis of real time information and action serves as a feedback about the point where strategic thrust is at the moment and at the same time suggests the next step in keeping the right direction at the right speed.

Third – this difference is related to the place of the center of the figures. In strategic improvising the center is the guidance system, in strategic planning the center is the control system i.e. strategic plan. The control philosophy in its origin is disempowering, because strategic planners expect company

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people to mess up their plans and that's why these planners attempt to regulate people's behavior. These planners attempt to control company's people not only what they do but, when and how they do it. In contrast the guidance system in strategic improvising involves a more interactive decision-making process in which top management provides individuals and teams with guidelines that are applied, in turn to team-based decisions. This is done with strategic improvising on the basis of the assumption that real-time information and intensive interactions between groups supplant the need for exhaustive front-end control.

Even more when comparing the two models everyone can notice that in the first figure representing the strategic planning represents a complete corporate or business unit planning process. In the second figure that of strategic improvising represents a single strategic thrust and this works only in the context of an established strategic direction and represents one of several strategic thrusts occurring simultaneously. Finally once a strategic direction is established, the teams responsible for a strategic thrust, makes the key strategic decisions.

3. CONCLUSION

Strategic improvising in contrast with strategic planning provides the following sub-processes:

1. Clarifying strategy – helps business decide what they are in the business for. It defines the strategic direction of a business, the context for setting strategic objectives
2. Building core capabilities inside the unit of competitive advantage – this relies on the ability to distinguish what is core work, support work and nonessential work of organization, providing them with contour and shape
3. Aligning strategy – the goal of this is to diminish the loss of organizational energy, which is common when there is a misalignment of structure and system with strategy.
4. Finding and creating business opportunities – this keeps the business open to the changing business environment.

These four sub-processes put strategic improvising to work and at the same time strategic improvising is the ά and Ω of these sub-processes.

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HARMONISATION OF WORK AND FAMILY LIFE IN THE CZECH LABOR MARKET CONDITIONS

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Abstract

The paper focuses on the possibilities for harmonizing professional and family life of Czech women, because in Czech families it is mainly woman who care for young children, elderly parents or people with disabilities. Failure of female employment, however, causes a loss of expertise, social contacts and results in reduced employability. It is also the reason why to look for the various ways that allow to combine career and family life. One of these ways is the concept of flexicurity, which supports so called "combination security" to make possible the simultaneous reconciliation of paid work with caring for family. The aim of this paper is to clarify to what extent the Czech labor market offers women this combination security that significantly affects women's decisions regarding motherhood and thereby contribute to increasing or at least to maintain fertility.

Key words: *harmonisation of professional and family life, labor market, flexicurity*

1. INTRODUCTION

To combine work and family life is often difficult although very important as the quality of personal life is reflected in a business setting, and vice versa job and career satisfaction positively affects family wellbeing. Nevertheless, in the Czech Republic, as well as in the majority of countries of the former Eastern Bloc, the path to this harmonisation is still very long. The aim of this paper is to find a possible solution for harmonizing professional and family life in the Czech labor market, especially in case of women. The main source of inspiration is the flexicurity concept.

The concept of flexicurity includes the harmonization of professional and family life and aims to reconcile two contradictory dimensions of the labor market – flexibility and security. One of the important labor market securities is the combination security, which means the security to combine work and private or social activities. This includes a combination of paid work with caring for children or other dependent family members, or with further education, training etc. This paper deals with both dimensions.

2. HARMONISATION OF WORK AND FAMILY LIFE – CZECH EVIDENCE

In order to harmonize work and family life, the lifestyle of families is essential. The Center for Public Opinion Research (Centrum pro výzkum veřejného mínění) conducted an investigation in 2003 in order to establish what would facilitate Czech citizens reconciling paid employment and family life. Respondents attributed a decisive role to partnership and family roles.

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The majority of respondents indicated that willingness of partner to divide housework equally (80 % men and 61 % females) help them the most. The second most important factor is to share the childcare and care about other household members (66 % men and 50 % women). But the 63 % of men have admitted that they are coping family and work because their partner was willing to take responsibility for the household (Horáková, 2004).

These findings correspond to the latest survey of the Research Institute for Labour and Social Affairs (Výzkumný ústav práce a sociálních věcí). Although over 90 % of respondents agreed that the partners should share equally caring for the household, woman still faces a double burden – at home and at work. Women are exclusively involved in food preparation, washing dishes, and buying food. On the other hand, men significantly contribute to managing family finance and their exclusive domain is home repairs and manual labor. In most families, women also exclusively provide activities associated with caring for children and the partners share equally only gaming activities. Four fifths of respondents indicated that they advice together about the leisure activities and education of children (Kuchařová, 2012).

The best way how to ameliorate the situation, is to change the education pattern. When a child lives in a family where the father is helping the mother, the child will identify more with this model in adulthood. But in this case, the state can also help a lot, for example by providing suitable conditions. But the reality is elsewhere.

Due to savings in public expenditure in the Czech Republic, we are witnesses of decreasing benefits provided at birth and for upbringing of children, whose share of total family income decreases. The pressing problem is the lack of facilities dedicated to the care of children up to three years in combination with the long duration of providing the maternity allowance and subsequent parental allowance within a reasonable amount. This situation, in combination with the low labor market flexibility, manifested by lack of part-time job opportunities, motivates women to remain outside the labor market. This is the way how the family policy compensates the low security of the labor market, including the combination security.

In addition, in the Czech economic conditions, part-time working arrangements may not be fully appreciated by employed women. The reason is the fact that these arrangements are associated with lower wages and do not allow family to reach the normal standard of living in Czech society, which is dependent on the wages of two full time jobs (Kotýnková, 2011). The family policy has to overcome a lot of problems in the next few years.

3. FLEXICURITY CONCEPT IN THEORY

On the labor markets, dynamic changes in the pattern of work can be observed. This process is reflected in changes of the position of people on the labor market and in changes of content and of formal arrangements of employment. Changes in the content of jobs results from the fact that the production ideas and exchange information and knowledge have become essencial for the economic growth (Baumann, 1998 and Dahrendorf, 1998). Formal changes of work are manifested by the "flexibilization" of labor through the increase of the number of the term or non-standard contracts with the lower protection of employees. (Kotýnková, 2011)

On the contemporary labor markets, the risks and uncertainties are growing. This fact effect employees and disadvantage the whole groups including women combining work and care of the household, children and other dependents. The need for harmonization of work and child care is

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pushing women to the secondary labor market (Berger and Piore 1980), where the flexibility is often accommodate to the needs of employers and do not always contribute to the successful reconciliation of both life spheres (Sirovátka, 2009).

The concept of flexicurity – a combination of labor market flexibility and various dimensions of the labor market security, is promoted in the European labor market to reduce uncertainty in the labor market and to expand the opportunity for greater harmonization of work and family life.

The European Commission defines flexicurity as follows: "Flexicurity is a comprehensive approach to labor market policy which combines sufficient flexibility in contractual arrangements, enabling companies and employees to manage change with simultaneous provision of a guarantee that employees can remain in the current job, or that they will be able to quickly find a new job, with reasonable certainty of income between jobs. This can be achieved through lifelong learning, active labor market policies and high levels of social protection." (European Commission, 2006). Various types of security and flexibility can be distinguished as follows (Statement of European Economic and Social Committee on flexicurity concept, 2007).

Types of flexibility in the labor market:

- External numerical flexibility – the difficulty (ease) of hiring (layoffs) employees by the employer.
- Internal numerical flexibility – the difficulty (ease) to adapt the volume of work to the needs of society through the internal labor market, such as using overtime or shortening working hours.
- Functional flexibility – the difficulty (ease) of the employer to make organizational changes and the staff's ability to adapt to these changes.
- Wage flexibility – the possibility of employers to adjust labor costs to their economic conditions.

Types of possible security in the labor market:

- Job security is achieved through legal measures that prevent employers quick dismissal of employees.
- Employment/employability security is given by the security of employees to retain employment, though not always with the same employer. This security is achieved through high employability of people through education or/and training.
- Income security is achieved by some degree of stable and adequate income of workers in the case of unemployment.
- Combination security is the (in)ability of employees to combine their work with other private or social activities, including for example the combination of paid work with caring for children or other dependent family members, or with further education.

These types of flexibility and security are combined on the national labor markets of the EU countries in many different ways. The practice of the concept of flexicurity is described in the following chapter.

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3. FLEXICURITY AND NATIONAL EUROPEAN LABOR MARKETS

With the implementation of flexicurity elements, various configurations of labor markets in Europe can be described. Based on two analyzes – Principal Components Analysis and Clustering Analysis – five models of labor markets were created (Employment in Europe, 2006), see Table 1.

Table 1: Labor market models by combination of flexibility, security and the level of taxation

	Flexibility	Security	Taxation
Nordic model (Denmark, Sweden, Netherlands, Finland)	Intermediate-to-high	High	Intermediate-to-high
Continental model (Austria, Germany, Belgium, France)	Intermediate-to-high	Intermediate-to-high	Intermediate-to-high
Mediterranean model (Spain, Greece, Portugal)	Low	Low	No clear pattern
Anglo-Saxon model (Great Britain, Ireland)	High	Low	Low
Eastern European (plus Italy) model (Czech Republic, Slovakia, Hungary, Italy, Poland)	Intermediate-to-high	Low	Intermediate-to-high

Source: European Commision, 2006 and MISSOC, 2008

The Czech Republic, along with Hungary, Poland, Italy and Slovakia, belongs to the Eastern European model, which has intermediate-to-high flexibility, low labor market security and intermediate-to-high tax burden. To better understand the functioning of mentioned models as a source of inspiration for the case of the Czech Republic, it is necessary to examine in detail the models of family policy applied in different countries. Paraskewopoulos (2009) specifies the following five models of family policy in the EU member countries (Kotýnková, 2011).

Denmark, Sweden, Finland and Netherlands belong to the Scandinavian model. This model it built on the efforts to equalize both sexes. The aim is to stabilize the birth rate through interconnection of family and employment policies. The basis of this inter connection is the support of employed parents and their families thanks to a dense network of services that guarantee quality childcare. The family policy focused on services provided to families results in high combination security. Countries using the Scandinavian model of family policy achieve the highest long-term women employment rate.

The birth rate within the French model is positively influenced by the provision of family benefits, tax benefits for parents, building a good network of services for families and targeted support for women. In this model, the family policy supports the combination security, integral part of the French labor market.

Model of German-speaking countries (Germany, Austria, Switzerland) ensures high protection of the family which arise directly from the constitutions of these countries. In the past, marriage, family and

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childcare was perceived as a private matter of citizens. However, the desire of women to work brought a decline of the birth rate and that is why the family policy was a subject to significant changes. Since 2007, Germany has the new model of family policy, inspired by the Scandinavian model. The means to satisfy the growing desire of women to work and to stop declining birth rate, are not the same as in the Scandinavian of French model (mainly state-organized and state-financed childcare). Germany is providing families with more tax breaks and relatively high benefits, which are above average among comparable countries. This policy, applied since the last decade, has led to high growth of female employment.

The Anglo-Saxon model (United Kingdom, Ireland) differs from other models by the philosophy based on the principle that each person is responsible for himself and his family. Financial support of families, which, in other countries, belongs to the competences of the state, is mostly left to charitable organizations that are not supported by the state. But even in the United Kingdom, which does not share the values of the Scandinavian model, the high employment of women can be seen.

Within the Mediterranean model (Greece, Italy, Spain) there is no specific family policy, the important role belongs to private activities. The problem of these countries is the same as in the Czech Republic – the lack of facilities dedicated to childcare, especially for children up to three years. That is also why mothers cannot afford to work on full time. At the same time, the possibilities to work on part time are very limited. These countries are characterized by low women employment.

Within the successful Scandinavian model, the most striking example of flexicurity in practice is the case of Denmark, which is subject to the following analysis.

4. CASE STUDY: DENMARK

The case of Denmark is an illustrative example of applying the concept of flexicurity in practice. That is also where this concept, in the nineties of the last century, were evolved. Denmark has managed to combine a flexible and liberal labor market with relatively generous social network. The great flexibility in working conditions, which enable employers to respond quickly to the changing economic environment, is combined with high security of employees to remain in the labor market and with high-income and combination securities (eg. Kotýnková, 2011).

The Danish model of flexicurity in the labor market is often described as the "golden triangle", which is based on three elements: high mobility of employees between jobs, generous safety net for the unemployed, and active labor market policy, see Figure 1.

In the case of unemployment, the income security of unemployed persons is high under one condition. An unemployed person has to try to return to the labor market ass oon as possible through the active employment policy programs, especially through education and/or training programs tailored to the needs of the labor market. If the unemployed person does not engage in these programs, it is referred to the low benefits for persons in material need only.

The Danish flexicurity model results in high, both overall and female long-term employment. This is an evidence of the high combination security including a lot of opportunities for women reconciliate their work and family life. However, it is emphasized that the Danish flexicurity model can not be taken as general recommendation for improving the balance between flexibility and security on the labor market. It is necessary to take into account the specific development of the national labor markets (Bredgaard, Larsen, 2007).

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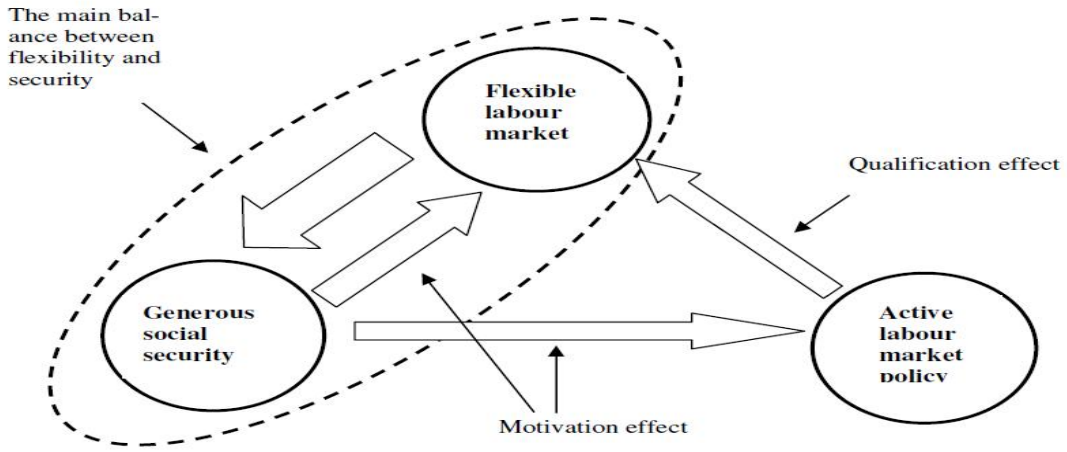
Figure 1: "Golden Triangle" of flexicurity



Source: Bredgaard, Larsen, 2007

5. CONCLUSION

The subject of this paper is the issue of harmonization of work and family life, which is of considerable interest across Europe, including the Czech society. Extending opportunities to reconcile paid work with caring for the family has many effects on the micro level (eg. satisfaction, better education of children), but also on the macro level. It means the release of an amount of force for the labor market hand in hand with improving public finances, which can be reflected into stronger financial support of family policy. Reconciliation of work and family life also affects positively women's decisions regarding motherhood and thereby contribute to increasing or at least to maintain the birth rate. So the Czech Republic is currently looking to the various ways which contribute to harmonize work and family life.

An important concept of the labor market, which supports the ability to reconcile paid work with caring for a family, is the concept of flexicurity. This concept lies in a combination of flexibility and security on the labor market. These two conflicting dimensions complement each other by flexible work arrangements that are compensated by providing employment security (not for the same employer), income security and combination security.

The countries with high labor market flexibility, high labor market securities including combination security, and with the family policy aimed at interconnection of the family and employment policies (Denmark, Sweden, Finland and Netherlands), has the highest women long-term employment rate. On the other hand, low employment of women can sustain in countries with low labor market security and low flexibility combined with the inconsistent model of family policy (Spain, Greece).

The Central and Eastern European countries, including the Czech Republic, currently face social reforms and re-evaluation of existing family policies. In a few years, these countries will probably change their policy patterns significantly. They may join any of named policy models or create a new model of their own. However, any such model must be clearly build on the concept of flexicurity.

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DEVELOPMENT INDICATORS APPROXIMATION IN TRANSITION ECONOMIES OF THE EUROPEAN UNION

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Abstract

The issue of measurement of countries' development is currently focused on complex and complicated indicators which are often difficult to interpret. The paper envisage correlation between income inequality and indices of measuring social and health problems of the population, demonstrated for example by Wilkinson and Pickett in 2009, and tries to find simpler and more interpretable approximation in the form of a share of the country's GDP per capita and the GINI coefficient. The suitability and informative value of this approximation is tested on the European Union and Organisation for Economic Cooperation and Development countries that were formerly part of the Eastern Bloc and which had and still have many similar characteristics.

Key words: *HDI, GINI, inequality, development, indicators, transition economies, European Union*

1. INTRODUCTION

With the increasing standard of living, poverty and development in the world takes many forms in different countries. The problem of capturing poverty development and its relevant description has become increasingly difficult, and presents a great challenge for today's foremost economists.

Poverty is not just a problem of developing countries. This fact has became even more obvious in the second half of the year 2008, when the economic crisis stroke the whole world, and plays the very important role in the direction of current and future research. The effectiveness of the economic policies faces to re-assessement by all the Central and Eastern European (CEE) countries.

The top scientists from the best world research centers have focused, especially in the last few years, on the multidimensional aspects of poverty and development. The new and relatively complicated indexes were created, but doubts about the quality of information obtained and the possible interpretation had been raised with the high intensity.

This paper tries to find simpler and more interpretable approximation of those development indicators. The research is focused on countries of the former Eastern Bloc, now members of the European Union (hereafter EU) and the Organisation for Economic Cooperation and Development (hereafter OECD), which has a lot of similarities, and is based on previously confirmed correlation between income inequality and indices of measuring social and health problems of the population.

2. THE CURRENT STATE OF RESEARCH

The Human Development Indicator (hereafter HDI) is the main indicator of maturity and development of the world countries in three basic dimensions – long and healthy life, education and adequate

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standard of living. The HDI is a composite index of three sub-indices – Life Expectancy Index, Education Index and GDP Index. Input data are: life expectancy; literacy of adult population (over 15 years of age); combined entry into primary, secondary and higher education and GDP per capita in purchasing power parity (in USD). These indicators are recorded and measured in a total of 182 countries, where the HDI is also completed. (HDR, official internet pages).

The HDI has been for years the only highly aggregated indicator including poverty and it never stopped to be criticised for difficulties in interpretation, in comparison with other countries, for non-synchronous data and a lot of other serious things (eg. Kubelková, 2011). This critique has been further projected to other changes in the Human Development Report – creation and inclusion of the Human Poverty Index (hereafter HPI). But the HPI has a serious data limitation – the input data present the monitoring problems for the national statistical offices and measurement of this index was dropped (HDR, official internet pages).

In the 20th Anniversary edition of the United Nations Development Programme (hereafter UNDP) Human Development Report in October 2010, The Multidimensional Poverty Index (hereafter MPI) was launched (OPHI, 2010). The MPI is composed of 10 indicators corresponding to three critical dimensions of poverty at the individual level (person or household): Education, Health and Standard of Living (the same dimensions as with the HDI). The measure assesses not only the intensity of poverty (the sum of weighted deprivations that each household faces at the same time), but also the nature or composition in each mentioned area which is essential for effective human development programs and policies. The MPI was for the first time set for 104 developing countries, thus covering about 78 % of the world population. (Alkire, Santos, 2010).

The comparison of the results on the example of the CEE countries has shown the importance of informations obtained form the multidimensional indices for the economic policy – especially regarding the targeting and monitoring of social policies (Kubelková, 2011). But the existing indicators are still not able to cover all important aspects of poverty and human development. An example is a missing factors of freedom (both economic and political), quality of institutions or life satisfaction. Same of these dimensions are captured by The Heritage Foundation or The Fraser Institute Index of Economic Freedom, World Economic Forum Global Competitiveness Index, Legatum Prosperity Index and others. What direction will therefore develop poverty measuring?

The World Bank expert Martin Ravaillon in his recent paper argues that the real differences between the recent measures that are called "multidimensional" and standard approaches lies in two things – "Can we measure poverty adequately with any single index?" and "How should we aggregate?" (Ravaillon, 2011). And he found out that all indices are "unidimensionals" and that the "goal for future poverty monitoring efforts should be to develop a credible set of multiple indices, spanning the dimensions of poverty most relevant to a specific setting, rather than a single multidimensional index" (Ravaillon, 2011).

Following these conclusions, the authors of this paper wonder whether the current state of human development (including poverty) could be captured in other, much simpler though not so exact, but sufficiently reliable, indicator.

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3. THE RELATION OF INCOME INEQUALITY AND THE INDEX MEASURING SOCIAL AND HEALTH PROBLEMS OF POPULATION

Due to the complexity of the above describe current index measuring poverty, we are looking for a suitable approximation. This approximation will be based on the correlation between income inequality and indicators of social and health problems of the population. As the main sources, we use primarily from the book "The Spirit Level" (Wilkinson and Pickett, 2009) or the article "Does Income Inequality and social cause healthproblems?" (Rowlingson, 2011), which summarizes the literature on the subject, including the critic mentioned correlation (eg. Saunders, 2010 and Snowdon, 2010).

Wilkinson and Pickett explain the reason of the given correlation as the so-called "status anxiety". According to this explanation, the income inequality divides people into individual income groups, which generally leads to stress having negative impact on the health of individuals. In case of lower income groups the uncertainty about the basic needs of the individual is also the creator of the stress. This obviously has significant health consequences.

The study "Fair society, healthy lives" (Marmot, 2010) highlights the fact that people in poor district in England die on average seven years earlier than people living in the richest dictricts. A similar numbers gives the study which quantify difference in life expectancy between high-and low-skilled labor positions (Marmot and Shipley, 1996)

The long-term research of Wilkinson and Pickett demonstrates a robust relation between social and health problems of population and income inequality even in wealthy societies. These authors have also constructed an index of health and social problems. This index shows a strong correlation with income inequality (correlation coefficient = 0.87) and a weak correlation with the economic level of the society.

The strong correlation is visualised in the Graph 1. The highest correlation coefficient of income inequality has a social immobility (0.93), teenage births (0.73) and imprisonment (0.67) (Wilkinson and Pickett, 2010b). Some of other studies have examined this relation beyond mere correlation and tried to determine the nature of this relationship – whether income inequality is causing the given problems independently of other factors (Subramanian and Kawachi, 2006; Babones, 2008). In this issue, the results are far less obvious yet.

The authors considered the high correlation between income inequality and the index measuring social and health problems (Wilkinson and Pickett, 2010) to be sufficient for design purposes of the Approximation index (1.1). For the reason of the mentioned correlation, different social and health aspects of the country, which current indicator measuring poverty take into account, could be replaced by a single number representing the income inequality in the country. Proposed Approximation index thus takes the following form (the calculation for chosen OECD countries in Table 3):

$$Approximation\ index = \frac{GDP\ per\ capita}{Gini\ index} \tag{1.1}$$

The results of this Approximation index will undergo the further detailed analysis on a sample of the former Eastern bloc countries that are now also members of the OECD. The first of all, the emphasis has to be made on the general development of income inequality and its main determinants.

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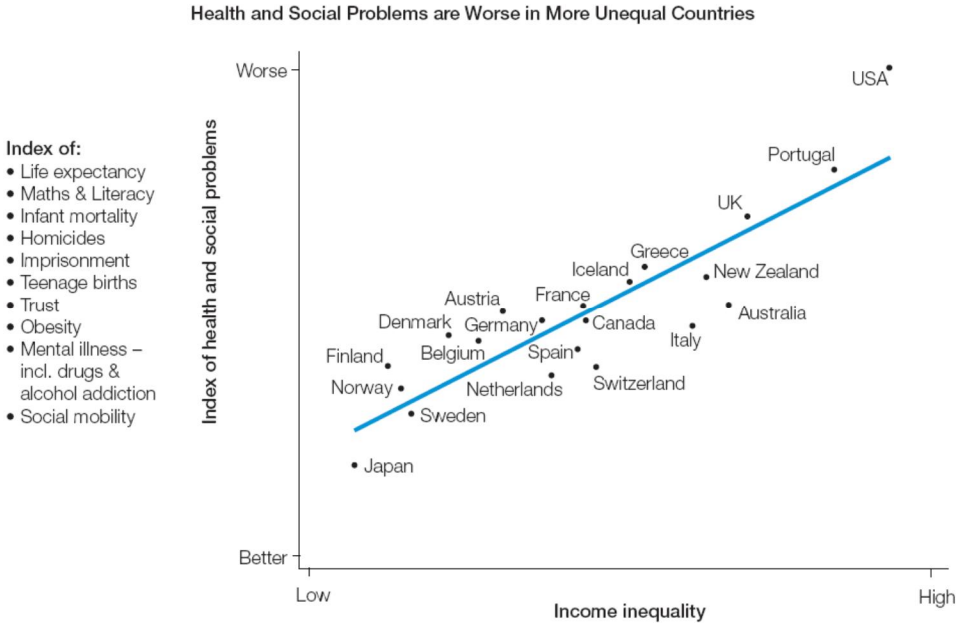
Graph 1: Correlation between income inequaity and index of social and health problems



Source: Wilkinson and Pickett, 2009a In Rowlingson, 2011, p. 11

4. GENERAL TREND OF INCOME INEQUALITY AND ITS MAIN DETERMINANTS

In the book "The Race Between Education and Technology", the authors mention the main reasons for the growth of income inequality in the last four decades (Goldin and Katz, 2009), showing in particular the development of technology and the consequences of globalization. Based on their considerations, the development of technologies led to the demand for more skilled workforce and the globalization has caused the transfer of production capacities to countries with lower prices of production factors.

These aspects are also mentioned in the OECD study, which is dedicated to increase of income inequality of the members of this organization (OECD, 2011). This study also highlights changes in the tax and social system or the structure of households,which recalls the fact that the share of households, where a child/ the children is/are educated by only one parent, is rising. Another important fact mentioned by the study is an observation that there is still growing rate of marriage which occurs among individuals of the same income categories: "Today, 40 % of couples in which both partners work belong to the same or neighbouring earnings deciles, compared with 33 % some 20 years ago." (OECD, 2011, p. 11).

The influence of globalization is evident also in the long-term increase of the share of wealth owned by the percentage of the richest people. This share rises from the second half of the 20th century. Nevertheless, the increase of this share is, however, very different in the U.S. and Europe (Atkinson, Pickett and Saez, 2011, p. 42-50), which is primarily due to the generous european social system. The european social system has not only the strong influence on the generally lower income inequality in Europe, but is also associated with significant inefficiency. Economic policy reducing income

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inequality may have a significant impact on the efficient allocation of scarce resources of the society (Alesina and Giavazzi, 2006).

The former Eastern bloc countries, which are the subject of the further analysis, passed through the consequences of an extreme case of this policy. This experience had the negative impact on the motivation of individuals and the prosperity of the society. However, negative impacts are also associated with the other extreme when significant income inequality has a negative impact on investment in human capital development and, according to some proponents of the New Keynesian economics, also on the long-term unemployment associated with hysteresis in the labor market with possible result in declining of the potential output of the economy. Significant income inequality may also affect the level of household debt and overall financial instability of the country (Moss, 2009).

It is therefore necessary to set the tax and social system to not hinder economic performance and also to maintain the income inequality in socially acceptable level. Some studies have identified a problematic border when income inequality reaches or exceed the Gini coefficient of 0.3 (Kondo, 2009). The effectiveness of social spending can be to a certain extent illustrated by the following relationship (the calculation for the OECD countries is shown in Table 2):

$$Effectiveness\ of\ social\ expenditures = \frac{\Delta\ Gini\ coef.\ (before\ and\ after\ taxes\ and\ transfers)}{\frac{Social\ expenditure}{GDP}} \quad (1.2)$$

5. CASE STUDY: SELECTED COUNTRIES OF THE FORMER EASTERN BLOC

For the detailed analysis of the results of Approximation index (1.1), we have selected a group of former Eastern bloc countries, which are also OECD members, specifically the Czech Republic, Slovakia, Hungary, Poland, Slovenia and Estonia. The first four named countries are now also called the Visegrad Group whose main objective is to present the defense of regional interests within the EU and the closer collaboration among the various ministries.

The Visegrad Group and the Slovenia collaborates within the regional partnership. The main connecting elements are two – the fact that these economies experienced an unprecedent experience of the transformation process from centrally planned economy to a market economy in early nineties, and their relatively high economic level declared by the membership in the OECD. These countries are also among the fastest growing economies in the EU (Eurostat, 2008, p. 41) and have very similar economic structure, characterized particularly by the high proportion of industry (Eurostat, 2008, p. 33). The OECD study also shows similar values of some social and health indicators, especially those based on subjective evaluation (OECD, 2011b, p. 77-97). These countries have also many differences, reflected especially in the different stability of public finance and financial sector stability.

In the previous chapter, we have identified globalization as one of the main causes of the general rise of income inequality in developed countries during the last four decades. Due to the significant inflow of foreign direct investment in the analyzed countries, it is evident that these countries rather benefit from the globalization or the low prices of production factors (OECD, 2004, p. 4). The investment also flowed mainly to sectors with the high proportion of low-income professions. It has had a positive effect on income inequality. However, the effect of transformation has prevailed above this positive effect.

There were several reasons for the rise of income inequality during the transformation: "The most important source of increase in the Gini is the hollowing out of the middle, that is the movement of

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state-sector workers into either rich private sector activity or poor unemployment." (Milanovic, 1999, p. 321) or " While under the communist regime wages in the Czechoslovak enterprise sector were above the national average, they sharply decreased from 115% in 1989 to 104% of the average in 1996 and only later improved slightly." (Večerník, 2010, p. 14). Significant inflation during the beginning of the transformation, which differently affected individual income groups, had also the considerable influence.

In terms of income inequality, joining the EU was for the given countries a positive fact – considerable amount of resources flowing into the social sector of these countries, especially through the European Social Fund, had a strong influence. The positive effect of the entry to the EU is illustrated by the third column of Table 2, where the very significant decline in income inequality in these countries after joining the EU is shown. From all the OECD countries, only Norway managed to incorporate in the ranking among those six analyzed countries of the Central and Eastern Europe, which, last for about five years, have made the biggest effort in reducing the income inequality.

In this period, Poland have reduced the Gini coefficient even of 0.072 point. Thanks to this positive development, Slovenia (Gini = 0.236), Slovakia (Gini = 0.256) and the Czech Republic (Gini = 0.257) ranked among the OECD countries, which after taking into account taxes and transfers, have the lowest income inequality (Table 1). The highest income inequality after taxes and transfers is, among analyzed countries, reported in Estonia (Gini = 0.315). It is obviously the result of the modest social policy of Estonia (13 % GDP), especially in comparison with Hungary (22.9 % GDP).

Within the inequality of income before taxes and transfers, Estonia is above the OECD average at about the Czech Republic's level (Table 1). In this category, the lowest income inequality or the fifth lowest income inequality in the OECD is reported in Slovakia (Gini = 0.416). The third column of the Table 1 shows the Gini coefficient difference before and after taxes and transfers, or the importance of tax and social system of each country in reducing income inequality.

It is logical that the amount of the difference is based on the specifics of the tax and social system of a concrete country. Nevertheless, the efficiency of spending plays an important role too. Estonia, Slovakia and the Czech Republic have, according to the above equation (1.2), the best results in efficiency from all OECD countries, however this calculation is greatly simplified and does not overlook the external funds from the EU helping social policy in these countries (Table 2).

The Table 1 shows evidence of the significant influence of the economic level of countries within the OECD, on income inequality. A number of highly developed countries has however a significant income inequality that they try to cut down through the generous welfare system, which may damp the economic growth of the country. Therefore the relationship of economic performance and income inequality is to some extent mutual.

6. CONCLUSION

We have used the relationship of economic performance and income inequality together with the correlation of income inequality and social and health problems of the population, to construct the Approximation index (1.1). This very simple calculation could substitute to a very large extent current constructively difficult indices measuring poverty. The results of this Approximation index (1.1) for the most OECD countries are shown in the Table 3. The ranking of countries according to this index is very much like the ranking according to curently often used and constructively complicated HDI.

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When comparing only countries of the Visegrad Group including Slovenia, the order is exactly the same.

Taking into account other OECD countries, then Slovenia, ranked according to the HDI, gained better places in the comparison with Finland than in the Approximation index ranking. This shift, however, does not coincide with reality. United Kingdom, according to HDI is below the level of Czech Republic and Greece, while according to Approximation index is approaching the level of Slovenia and France. According to Approximation index is Slovak Republic much closer to Greece and Italy level which are currently hardly affected by the debt crisis, and therefore can be assumed that in the near future, their ranking will fall within the OECD members. This fact also shows a good interpretation capability of the Approximation Index, which is also counted on more recent data than the HDI and brings the information about the change in the development earlier.

The paper dealt with the explanatory power of the Approximation index only on the latest available data. To verify the Approximation Index as the suitable substitute of the HDI for the examined countries, the monitoring of results in longer time series is needed as well as the sensitivity analysis. This remains a challenge for further investigation.

Table 1. Gini coefficient in selected OECD countries

Country	*Gini coefficient (after taxes and transfers)*	*Country*	*Gini coefficient (before taxes and transfers)*	*Country*	*before-after*
Slovenia	**0,236**	Korea	0,344	Austria	0,211
Denmark	0,248	Ireland	0,382	Belgium	0,210
Norway	0,25	Norway	0,41	Germany	0,209
Czech Republic	**0,256**	Denmark	0,416	Finland	0,206
Slovak Republic	**0,257**	**Slovak Republic**	**0,416**	Italy	0,197
Belgium	0,259	**Slovenia**	**0,423**	**Hungary**	**0,194**
Finland	0,259	Sweden	0,426	Luxembourg	0,194
Sweden	0,259	Netherlands	0,426	France	0,190
Austria	0,261	Greece	0,436	**Czech Republic**	**0,188**
Hungary	**0,272**	Canada	0,441	**Slovenia**	**0,187**
Luxembourg	0,288	**Czech Republic**	**0,444**	Portugal	0,168
France	0,293	New Zealand	0,455	Denmark	0,168
Ireland	0,293	**Estonia**	**0,458**	Sweden	0,167
Netherlands	0,294	Spain	0,461	Switzerland	0,167
Germany	0,295	Japan	0,462	**Poland**	**0,165**
Iceland	0,301	Finland	0,465	United Kingdom	0,161
Switzerland	0,303	**Hungary**	**0,466**	Norway	0,160
Poland	**0,305**	Australia	0,468	**Slovak Republic**	**0,159**
Greece	0,307	Belgium	0,469	Spain	0,144

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Estonia	**0,315**	Switzerland	0,47	**Estonia**	**0,143**
Korea	0,315	**Poland**	**0,47**	Japan	0,133
Spain	0,317	Turkey	0,47	Australia	0,132
Canada	0,324	Austria	0,472	Netherlands	0,132
Japan	0,329	Luxembourg	0,482	Greece	0,129
New Zealand	0,33	France	0,483	New Zealand	0,125
Australia	0,336	United States	0,486	Canada	0,117
Italy	0,337	Mexico	0,494	United States	0,108
United Kingdom	0,345	Germany	0,504	Ireland	0,089
Portugal	0,353	United Kingdom	0,506	Turkey	0,061
Israel	0,371	Portugal	0,521	Chile	0,032
United States	0,378	Chile	0,526	Korea	0,029
Turkey	0,409	Italy	0,534	Mexico	0,018
Mexico	0,476	Iceland		Iceland	
Chile	0,494	Israel		Israel	

Source: OECD statistics, 2012

Table 2. Components of the Approximation Index

Country	*Social expenditure/HDP*	*Country*	*(Gini before-after taxes and transfers)/(social expenditures/HDP)*	*Country*	*GINI (mid.2000) - GINI (latest data)*
France	28,4	**Estonia**	**0,0110**	**Poland**	**-0,072**
Sweden	27,3	**Slovak Republic**	**0,0101**	**Estonia**	**-0,046**
Belgium	26,3	**Czech Republic**	**0,0100**	**Slovak Republic**	**-0,042**
Austria	26,1	Luxembourg	0,0094	Norway	-0,037
Denmark	26,1	**Slovenia**	**0,0092**	**Hungary**	**-0,031**
Germany	25,2	Switzerland	0,0090	**Czech Republic**	**-0,03**
Italy	24,9	**Hungary**	**0,0085**	**Slovenia**	**-0,029**
Finland	24,8	**Poland**	**0,0083**	Belgium	-0,024
Hungary	**22,9**	Finland	0,0083	Italy	-0,023
Portugal	22,5	Germany	0,0083	Portugal	-0,021
Spain	21,6	Australia	0,0083	Finland	-0,018
Greece	21,3	Austria	0,0081	Greece	-0,018
Norway	20,8	Belgium	0,0080	New Zealand	-0,018
Luxembourg	20,6	Italy	0,0079	Israel	-0,015
United Kingdom	20,5	United Kingdom	0,0079	Sweden	-0,006
Slovenia	**20,3**	Norway	0,0077	Germany	-0,005

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Netherlands	20,1	Portugal	0,0075	France	-0,002
Poland	**19,8**	Japan	0,0071	Denmark	-0,001
Czech Republic	**18,8**	Canada	0,0069	Netherlands	0
Japan	18,7	New Zealand	0,0068	United States	0
Switzerland	18,5	France	0,0067	Australia	0,003
New Zealand	18,4	Spain	0,0067	Mexico	0,003
Canada	16,9	United States	0,0067	Canada	0,005
Ireland	16,3	Netherlands	0,0066	United Kingdom	0,006
United States	16,2	Denmark	0,0064	Korea	0,013
Australia	16,0	Sweden	0,0061	Chile	0,015
Slovak Republic	**15,7**	Greece	0,0061	Iceland	0,017
Israel	15,5	Turkey	0,0058	Japan	0,019
Iceland	14,6	Ireland	0,0055	Luxembourg	0,028
Estonia	**13**	Korea	0,0038	Austria	0,039
Chile	10,6	Chile	0,0030	Ireland	
Turkey	10,5	Mexico	0,0025	Spain	
Korea	7,6	Iceland		Switzerland	
Mexico	7,2	Israel		Turkey	

Source: OECD statistics, 2012

Table 3. Human Development Index and Approximation Index

Country	***HDI***	***Country***	***Approximation Index***
Norway	0,943	Norway	2289,24
Netherlands	0,91	Denmark	1619,76
United States	0,91	Switzerland	1538,68
Ireland	0,908	Austria	1533,22
Germany	0,905	Sweden	1506,72
Sweden	0,904	Belgium	1454,67
Switzerland	0,903	Netherlands	1434,52
Denmark	0,895	Finland	1408,38
Belgium	0,886	Ireland	1380,82
Austria	0,885	Germany	1268,17
France	0,884	United States	1232,49
Slovenia	**0,884**	France	1165,46
Finland	0,882	**Slovenia**	**1141,02**
Spain	0,878	United Kingdom	1035,22
Italy	0,874	Spain	1005,93

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Czech Republic	**0,865**	**Czech Republic**	**986,13**
Greece	0,861	Italy	948,43
United Kingdom	0,849	Greece	926,25
Estonia	**0,835**	**Slovak Republic**	**906,89**
Slovak Republic	**0,834**	**Hungary**	**755,33**
Hungary	**0,816**	Portugal	720,03
Poland	**0,813**	**Poland**	**651,90**
Portugal	0,809	**Estonia**	**647,08**
Turkey	0,699	Turkey	383,03

Source: Eurostat, Human Development Index and its compoments, 2012

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CONTRIBUTION OF THE APPLICATION OF MODERN COST MANAGEMENT METHODS IN ACHIEVING COMPETITIVENESS ON THE MARKET

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Abstract

The aim of this paper is to analyze the impact of using modern methods of strategic management in achieving competitiveness on the market. The paper suggested that the application of modern methods of cost management increases the level of company competitiveness, and stated hypothesis will be explored mathematical and statistical methods, methods of modelling and simulation, and general scientific methods of analysis, induction, compilations and comparisons.

Key words: *cost management, strategic cost management methods, competitiveness*

1. INTRODUCTION

Modern business conditions and globalization have resulted in strengthening competition and reduction of prices in the market. Customers are becoming more demanding, forcing the company to continually introduce products innovation and services. This business environment has resulted in shorter product life-cycle and any rapid obsolescence of technology. Considering mentioned changes, it affirms the need for more comprehensive systems of deciding which demands the traditional model of cost management, because of short-term nature of the information provided, cannot satisfy. The traditional systems of management costs were developed at a time when direct labour was a large proportion of the total cost of the product. Changes in production technologies, such as "just in time" philosophy, robotics, the development of flexible manufacturing systems, etc., caused the reduction in direct labour costs and incensement of overheads, which is why modern costing methods, which allocate overhead to products based on activities, have a higher degree of objectivity in the allocation of production overheads to the products compared to traditional methods.

The main objective of the research is based on the theoretical background and research that will be conducted, to analyze the methods and instruments of strategic cost management and explore the impact of applying these instruments to creation and maintaining of competitive advantages.

2. COMPARATIVE ANALYSIS OF STRATEGIC AND TRADITIONAL COSTS MANAGEMENT

Dynamic business conditions have forced businesses to adapt to the demands of the modern business environment. The need for timely, relevant and reliable information has influenced the development

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of modern methods of cost management. It is not surprising that in this period a large number of papers were created which are based on the possibility of modification of existing methods of cost management in a way that they adapt to the challenges that carry the modern business conditions.

The authors are defining the different modern methods of cost management. Johnson and Kaplan19 (Johnson and Kaplan, 1991) defines it as "a complex and integral part of management accounting practice, which represents the effective control and planning tool that contributes to quality information offers in the function of making successful management decisions affecting the entire business enterprise."

There are great differences between traditional and strategic cost management. The characteristic of the traditional cost accounting system is that to accurately determined direct production costs of certain product add up overheads or indirect costs that are usually distributed at cost or direct labour hours of people and / or machinery, while the costs of all other activities are not allocate and are considered fixed in compared to the volume of production. Costs of products determined in the traditional manner are compatible with the standards of financial reporting and as such are adapted for external reporting to the IRS and other external users of financial statements. On the other hand, if this information's are used in the process of internal reporting, they can cause the wrong decision making, because the cost information obtained by traditional methods of calculation are often inaccurate and unrealistic. The inadequacy of applying the traditional models of cost management, in today's terms and conditions of business are referring to the following:

- the problem of accurately determining the amount of indirect costs (overheads);
- problems in the allocation of overhead costs to cost centres;
- the choice of methods by which costs are allocated to cost centres;
- the estimation of direct labour hours and / or hours of operation of the machine in order to calculate the rate of transmission overheads;
- way of treatment with costs of administration cost of sales and distribution.

Thanks to the automation of production processes, in the structure of cost of manufacturing sector in developed countries dominate production overheads that cannot be directly allocated to the relevant products that have caused them. Mostly because of that fact, the manufacturing sectors of developed

Countries did not conform to current accounting methods, they encouraged development of new methods and improvement of existing once under the new conditions for a more objective evaluation of cost allocation and product profitability.

Turney (Turney, 1996, pp. 34) as the main reason for the inadequacy of existing methods of cost management states increased overheads and direct labour cost reductions over the past 150 years.

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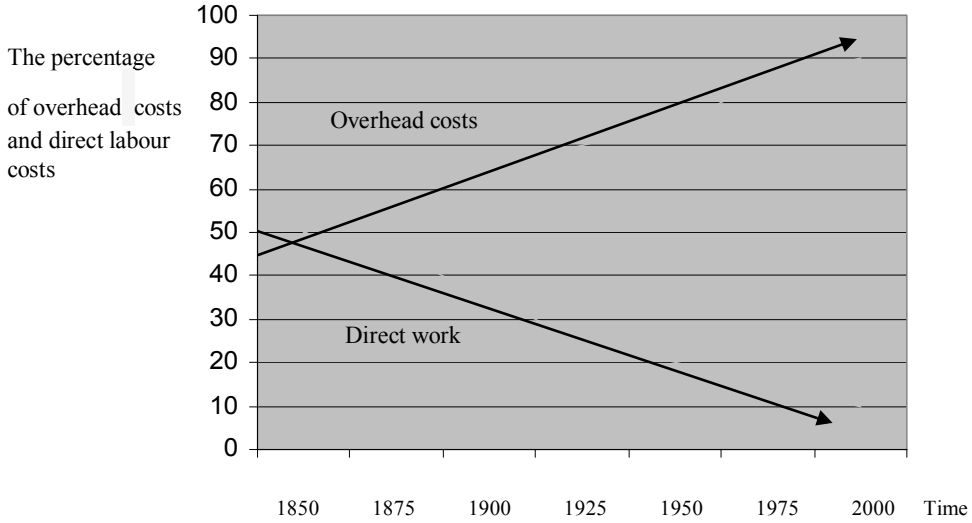

Figure 1: The relative importance of direct labour and overheads over 150 years

The figure above shows a relative decrease of the cost of direct labour and an increase in overheads in total costs over the past 150 years, from which it can be concluded that the importance of proper allocation of overhead costs to products is larger and that it is necessary to implement the strategic cost management tools in the modern business conditions in order to ensure the correct rating and product profitability based on relevant information to enable making strategic decisions for the corporation.

On the other hand, modern production marks the application of modern technologies, which allow greater flexibility of product and process management. Application of new technology has affected the structure and nature of certain types of costs. Thus, the cost of labour, traditionally considered to be variable, is now considered fixed costs because the modern business conditions uncertain what will be the level of production achieved.

Management of costs and revenues is the most important function of strategic cost management. In the 21 century, strategic cost management is based not only on ensuring optimal levels of cost, but also on incensement of revenue, improvement of work efficiency and customer satisfaction. Therefore, strategic cost management as a philosophy of optimal management of costs and revenues presents a proactive attitude and a set of techniques that allow improving the strategic position of the company.

Strategic cost management should be observed as a precondition for the process of obtaining high-quality and reliable information on costs and as such it becomes one of the key instruments of management accounting practices.

The main objective of cost management is to achieve the highest possible long-term benefit from the realized cost. In other words, the basic objective of cost management is to achieve cost efficiency, and achieve the optimum relationship between the costs involved and the results achieved. In terms of globalization and recession cost management is a fundamental management tool that is essential in order to increase the competitiveness of enterprises and ensure the survival of the market.

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Differences between traditional and strategic cost management with regard to various business factors that have an impact are summarized in the following table.

	The traditional system of cost management	**Strategic management costs**
ORIENTATION	internally	externally
OBJECTIVES	short term, specific	long term for the continuous realization of competitive advantages
SCOPE	narrow	wide
MATURITY	short-term	long-term
FREQUENCY	periodically	continuously
GOAL CILJ	the value added	the entire value chain
ORGANIZATION	functional orientation	process orientation
KEY EVENTS	finance, accounting	marketing, economics

Source: Adapted from: (Shank and Govindarajan, 1993, pp. 217)

Table 1. Differences between traditional and strategic cost management

The traditional approach to reducing the cost has a short internal focus, with the main objective of determine the cost of products and services. This approach is also reactive because it does not identify the causes of costs (activities), which cause an additional cost.

Information generated from traditional cost management systems do not direct the attention of management on those business areas where the loss occurs and results in leakage-saving options. In addition, traditional cost management systems ignore certain causes of costs such as customers and suppliers.

From everything said so far can be concluded that the modern business conditions indicated the need for a different concept of costs management because the traditional models proved inadequate in the new business environment. This is inadequacy of the relevant decision-making in business undertakings.

3. CLASSIFICATION AND CHARACTERISTICS OF THE INSTRUMENT OF STRATEGIC COST MANAGEMENT

The historical development of modern methods of cost management suggests that these models were developed depending on the needs to solve increasingly complex problems of cost management, which are determined by the growth of enterprises and diversification of the

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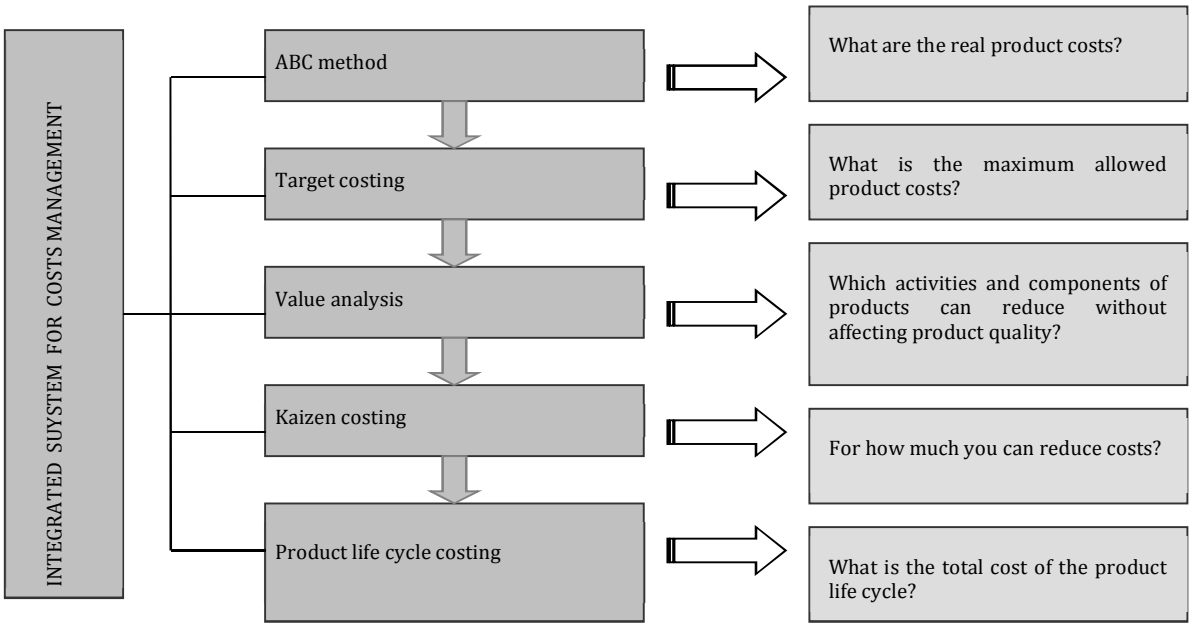
production program in the company. Design, implementation and application of new methods of costs management represent a major challenge for the leaders of accounting management, and increasing pressure to reduce costs, increase revenue and meet market needs in the modern business conditions affecting the increasing importance of application of new instruments of strategic cost management.

Modern cost management is evolving with the development and management and its functions as well as with the development of scientific methods of study costs. Recently, several models that should provide more effective cost management have been developed. These models are the instruments and methods of strategic cost management, and their classification is very extensive. The literature20 (See: Berliner and Brimson 1988, Brimson 1991, Shields and Young 1991, Horváth 1998, Monden 1995, Turney 1996, Cooper and Slagmulder 1998, Ansari, el at. 1997, Cooper and Kaplan 1999) mentions many kinds of modern methods of cost management and cost accounting and the most important are calculation of cost of product life cycle, the calculation of target costs, activity based costing, value analysis, quality costing, Kaizen costing, the Balanced Scorecard (BSC) and Benchmarking.

The following figure shows the relationship of certain methods of strategic cost management within the integrated system of costs management.



Source: Proposition of Authors

Figure 2: Coverage of individual methods of cost management within the integrated system

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Referred to above stated and Figure 2: it can be concluded that the cost calculation based on integrated model of strategic cost management begins with the calculation of costs based on activities (ABC method), which are indirect costs allocated to products. Based on data on the amount of costs obtained by ABC method, target costs are calculated to determine the maximum allowable costs. These costs are determined by the target price and the desired level of profit, according to market research. Regardless exceed the calculated allowable costs of the target or not, the above model should include a value analysis. Value analysis will give an answer to the question of which components of products and activities costs can be "cut" respecting the functional properties of the product and the requirements of consumers.

After analyzing the values which determine the components and activities that can achieve cost savings, kaizen method will provide the answer to the question "how much" it is possible to reduce the cost of these components and activities. With this prepared data on the amount of the cost of a certain product it is possible to access the analysis of life cycle cost of products that will provide the answer to the question what is the cost of a product during its life cycle, from the aspect of the manufacturer and the aspect of product users while respecting the time value of money using the method of discounting and by reducing all future costs to present products value.

Note that everything, in all stages of application of this model, involves the application of cost management concepts "quality management".

4. RESEARCH OF THE IMPACT OF THE INSTRUMENTS OF THE STRATEGIC COSTS MANAGEMENT OF MARKET COMPETITIVENESS

Global competition has forced many companies in the process of reorganization and restructuring of operations in an effort to not only maintain its competitiveness, but to survive in the market. This change in the global market has forced many companies to change their competitive strategies. The process of creating competitive advantages and especially their maintenance over a long period of time is an essential response to such businesses operating conditions and impulses from the environment. Therefore, the competitive advantage of firms is the result of a number of specific processes and activities within the company, which will affect the relevant performance indicators to achieve the planned financial, marketing, production and other goals.

In this section paper will process the impact of strategic cost management methods implementation on the competitiveness of enterprises.

Defining competitiveness can not begin without the mention of Porter generic competitiveness strategy. The impact of the instruments of strategic cost management on the company competitiveness dealt with by many authors, but the most important contribution of this effect comes from the Porter (Porter, 1998). Porter in his book "Competitive Advantage: Creating and Sustaining Superior Performance" (Porter, 1998) assumed that the company has a choice of three generic strategies to achieve sustainable competitive advantages, namely cost leadership, differentiation and focus. In organizations that choose a strategy of cost leadership Porter advocates the use of strategic tools for analyzing costs.

The company which is capable to position itself good in the market can achieve high rates of return even if the average profitability of a business is very low in this segment. Therefore, the most important requirement for achieving long-term growth to is to create sustainable competitive advantage from which the most important are low cost and differentiation. These

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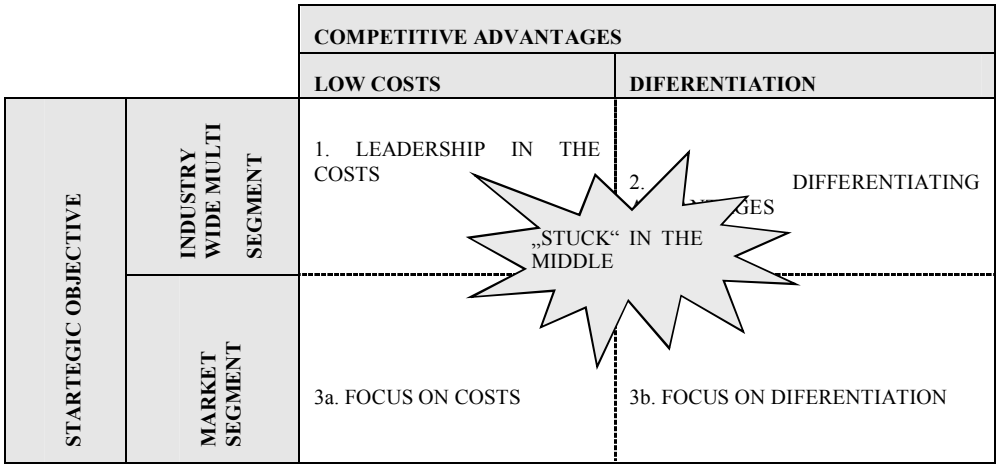
competitive advantages with a series of activities that arise out of them allow the companies implement three generic strategies for achieving outstanding results in a particular business segment (Porter, 1998).

The aforementioned strategies are related to leadership in cost, differentiation and focus which is shown in the figure below.



Source: Adapted from: (Shank and Govindarajan, 1993, pp.. 49)

Figure 3: Porter's picture of generic strategies

The goal of cost leadership strategy is that with the lower the cost to realize the growth of market share through lower prices, based on the experience curve effect, the efficient consumption of resources, economies of scale and quality control costs. The cost leader is able with lower prices to achieve the same level of profit as well as competitors, because its production costs are lower, and with all this realized and market share growth.

Differentiation strategy is based on differentiation as the primary competitive advantage. The goal is to provide products and different from others in the industry to cover as many market segments. An indispensable precondition for the successful realization of the differentiation strategy is analyzing the requirements from the market. Differentiation can be achieved on the basis of price, image, support (loyalty) or design quality. In the context of the four basic competitive advantages of differentiation are achieved quality, innovation and flexibility on customer requirements, while the efficiency is inherent with a strategy of leadership cost. Successfully implemented differentiation strategy allows the firm determination of above-average prices for their products, ensuring customer loyalty and increase sales volume.

The strategy of focusing is realized in a focused market segment which is trying to meet the needs of specific customer segments. The strategy of focusing is derived from two basic strategies - strategies of cost leadership and differentiation strategies, and focus can be on the basis of low cost or on the basis of differentiation.

Models of strategic cost management have the most impact on the first generic strategy -cost leadership - which includes a set of interrelated business techniques that include:

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- the good utilization of available high level efficiency capacity;
- reduction of costs based on experience;
- the quality control of direct and indirect costs;
- the avoidance of crediting customers;
- the maximum reduction of costs in all business activities of the value chain.

Sustainable competitive advantage ensures retention and enhances the competitive position of companies in the market in regard to competitors in the long term. Creating and maintaining competitive advantage is a requirement for survival and company growth generator. Wider application of strategic cost management model in large and medium-sized enterprises in industrial activity would provide a whole new dimension to the business and contribute to:

- more detailed record, more effectively costs monitor in the Company;
- improving the quality and reliability of financial reporting;
- more effective control system;
- the accuracy of qualitative and quantitative information;
- improving financial management and decision-making process.

In addition, for the growth and development of an enterprise competition plays an important role because it is the most common incentive for numerous studies in order to achieve better business results. Just in terms of competitiveness of enterprises in the market and achievement of greater success as business, information provided by the strategic cost management instruments are of great importance for the company, and key areas of influence of these instruments is to increase the competitive advantages related to the following:

- comprehensive analysis of the value chain;
- to meet customer needs;
- the optimization of operating costs;
- to increase product quality;
- the time of product launch;
- on innovation in business processes;
- the external and internal orientation;
- the continuous improvement of operations.

Comprehensive analysis of the value chain is very important in managing costs, and assumes that each of the activities of the enterprise (research and development, production, marketing, product distribution, strategy and management, etc.) has important functions that affect the incensement in value of products or service that are necessary for integration and coordination of these functions in order to achieve competitive advantages. By integrating the various methods of strategic cost management it ensures the development of all activities and functions in the direction of the company to meet customer needs as the main criterion in determining the measure of product quality.

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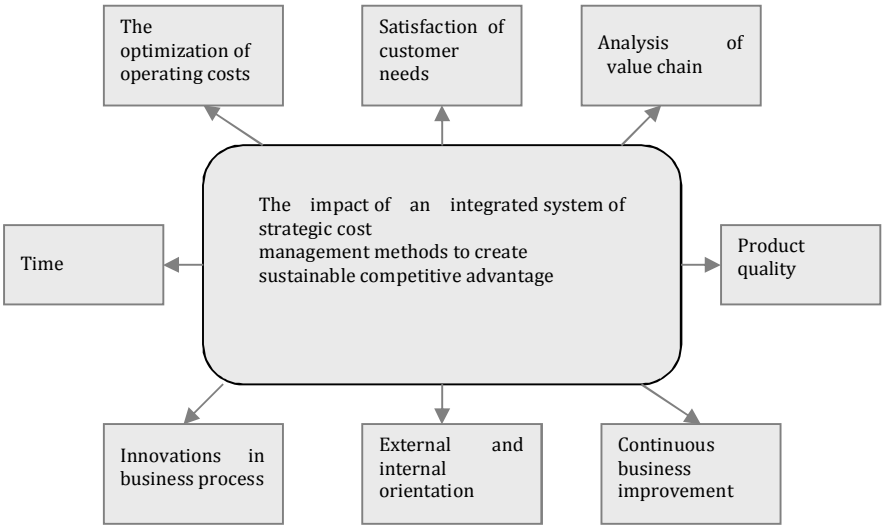

Source: Proposition of Authors

Figure 4: Areas of influence of modern methods of cost management to create sustainable competitive advantage of enterprises

Comprehensive analysis of the value chain is very important in managing costs, and assumes that each of the activities of the enterprise (research and development, production, marketing, product distribution, strategy and management, etc.) has important functions that affect the incensement in value of products or service that are necessary for integration and coordination of these functions in order to achieve competitive advantages. By integrating the various methods of strategic cost management it ensures the development of all activities and functions in the direction of the company to meet customer needs as the main criterion in determining the measure of product quality.

Satisfaction of customer needs is the most important effect of the application of modern methods of cost management. Application of various methods of strategic cost management affects the development of value systems according to customer requirements and product without changing the functional characteristics is more close to customer perceptions. Customers are those that generate revenue and thus enterprises profit, so focus on customers in terms of the primary orientation of product quality, measured by customer satisfaction, is a fundamental factor in creating sustainable competitive advantages. Long-term sustainability of the enterprise depends largely on how well the company understands and meets the requirements of its customers. These requirements and ways to achieve them is constantly changing, creating new opportunities and challenges in the business. For this reason, modern companies to retain their competitive advantage are trying to maximize value for customers because they realize that just focus on the customer has become the most important business strategy.

Operating costs optimization. Operating costs together with gross income are the main factor in the amount of realized profit in the company. In today's dynamic business conditions, entrepreneurs

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and managers are taking a multitude of daily activities that tend to plan, reduce, control and analyze costs. The emphasis of modern cost management is continually costs reduce by analyzing the needs, desires and tastes of consumers. In this way cutting costs would not affect the loss of product features that are of great importance to customers in making decisions about purchasing products.

Strategic cost management methods have impact to reduction of total product cost without diminishing the required properties of products from the market but, in fact, influence the increase of product quality through continuous research needs, desires and tastes of customers and their willingness to purchase this product. In this way the company increase its competitive advantage in the market.

Product quality incensement refers to its adaptation and harmonization with the requirements of customers. Customers demand a high level of quality at an acceptable cost, and this is precisely the advantage provided by the application of modern methods of cost management.

Timeliness of product launch significantly affects increase of firms' competitive advantage, depending on the time distance that has passed since the products planning stage to its market launch. Modern business conditions have increasingly shorter product life cycle, so it is necessary to implement as soon as possible the core business functions and activities to go up with the competition. Also, the speed at which a company responds to consumer demands is very important. In this context, it is a great strategic advantage to use models for cost management because the foundation of this system is placed on building a quality product which is determined depending on the wishes, needs and tastes of customers. The application of these systems will allow shortening the duration of those activities that do not create value for customers, which will significantly affect the speed of product launch to the market, and thereby to gain competitive advantage.

Innovations in business processes represent one of the main factors in creating competitive advantages. From this point integrated systems for managing the cost are of major importance because the integrated use of target cost, value analysis and Kaizen method encourages innovative activity within an enterprise through a process of continuous improvement of business value analysis of the entire business process and the ongoing examination of the potential products designing to their properties and functions closer to customers' requirements. Improving production system today is considered as a key competitive weapon, which should enable the production of innovative, high quality and cheap products with features and functions required from the market. By providing our customers products that represent the latest technology and technical, design and other achievements, company ensures obtainment of sustainable competitive advantages over competitors.

Internal and external orientation. Internal orientation refers to physical resources, human and technological - technical potential of the company and externally to suppliers, customers, competition, etc. Negativity of using a traditional model of cost management has been many times mentioned in this paper because for its exclusive external focus. Modern methods of cost management provide management information that are relevant for external reporting, but also enable strategic decision making within the company. Internal orientation in order to obtain information that will allow making correct business decisions is even more explicit in use of an integrated management costs system because the information obtained through the above model is the result of a comprehensive implementation of strategic cost management tools and are distinguished by higher levels of reality in relation to information provided by the individual methods. Feature of internal and external orientation is important in terms of gaining competitive advantage because to achieve

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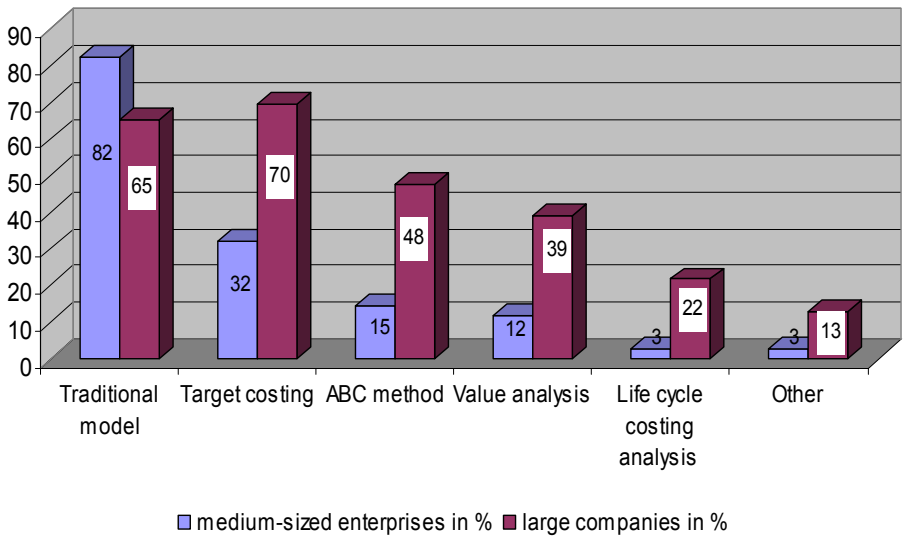
it and maintain an enterprise it must be flexible in the context of responding to changes in internal and external environment.

Continuously improving of all business processes and functions is imperative achieving competitive advantage. In this context the most important role in the integrated model of cost management is the application of Kaizen method of cost management. Integrating this method that assumes the continuous improvement of operations with the method of target cost, value analysis and life cycle cost analysis of products provides a realistic assessment of product costs and optimizing product costs which significantly affect the creation or enhancement of sustainable competitive advantages. In addition, in order to achieve competitiveness on a global level, companies must have an appropriate staff structure whose members know the time to recognize changes in the market and adapt to these changes, able to identify new and potentially more profitable markets and mobilize internal resources to take advantage of all opportunities for business development and growth.

These are key areas of influence of modern management methods application to the total cost of operations and achieving its sustainable competitive advantages. To realize these advantages it is necessary to make essential changes in the overall enterprise information system that will enable the strategic management and cost control based on strategic cost management. The application of these methods of cost management significantly contributes to achieving greater efficiency, and thus achieving competitive advantage in modern business conditions. These tools present the basic device management support to businesses which is much easier to make strategic decisions based on the results provided by an integrated management costs system.

The following are the results of the research of scope application of modern cost management methods in medium and large industrial enterprises in the Republic of Croatia (Potnik Galić, 2012, pp. 117-149). The following chart shows the percentage of application of these methods.



Source: (Potnik Galić, 2012, str.134)

Figure 5: Application percentage of cost management modern methods

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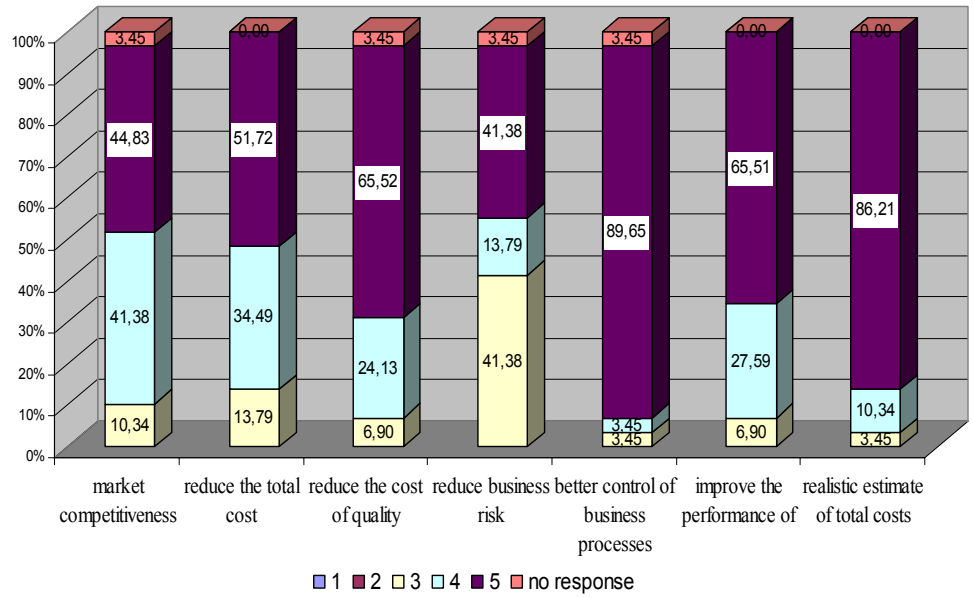
According to a study conducted on 57 medium and large industrial enterprises operating on the Croatian territory in 2011, that were completed by a competent person to manage costs (accounting managers, company management, department managers and administration of the plan and analysis) showed that the traditional model of cost management applies even 75.44% of the analyzed companies (82% medium-sized and 65% large enterprises). Another commonly used method is a method of target cost, which is the most widely, used modern method of cost management. The target cost method is used by even 47.37% of the observed firms (32% medium-sized and 70% large enterprises). Beside the target cost method commonly used method for controlling the cost of medium and large industrial enterprises is a method based on the activities or the ABC method, whose implementation was confirmed by 28.07% of the company (15% medium-sized and 48% large enterprises).

However, most surprisingly is are relatively high application percentage of the value analysis in relation to other instruments of strategic cost management that are only 6% behind the most popular in Western countries where usually applied the ABC method. Life cycle costing applies to only 10.53% of the companies (3% medium-sized and 22% large enterprises), and such results are not surprising because this method usually applied in assessing the feasibility of large construction or military projects . The above clearly shows the following chart.

In the aforementioned study, we analyzed the effect of application of modern management costs methods to individual business success factors and the results are shown below.



1 – irrelevant, 5 – great importance

Source: (Potnik Galić, 2012, str.139)

Figure 6: The impact of using modern management costs methods to individual business success factors

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Furthermore, respondents evaluated the impact of using modern cost management methods to the most important factors of business enterprises, and the results show that 13 companies or 44.83% of them rated grade 5 and gave great importance to the impact of using modern cost management methods on market competitiveness, while 41, 38% of the importance of applying these methods to assess the market competitiveness of grade 4 and only 10.34% 3rd grade. None of the participants stated that the application of modern management costs methods has no impact on the indicators.

That the application of modern management methods reduces impact on the cost of expenditures fully agrees 41.38% of respondents. The four of them or 13.79% for mentioned contributions gave a score of 4, and 41.38% of them gave a medium score for the importance of applying these methods to reduce business risk. Better control of business processes is an indicator of success in any business, in the opinion of the respondents (as many as 89.65%), application of modern cost management methods has an extraordinary impact. Specifically, respondents argue that the contribution of modern cost management methods is the most important from aspect of improving the quality control of business processes because 26 out of 29 evaluated the impact with grade of 5.

Operating results as an indicator of business performance refers to the achieved level of company profitability and in this part of the survey respondents had to evaluate the impact of using modern methods to increase income. 19 of them or 65.52% rated the importance of applying these methods to increase income with grade of 5. 27.59% of respondents gave a score of less than the above to the contribution. Only 6.9% of respondents assigned a medium score to importance of strategic instruments application to the performance result.

That modern methods of management costs have a profound impact on a more realistic estimate of the total cost goes to 25 subjects who evaluated the impact of these the grade of 5. Ratings 4 and 3 are allocated by 13.79% of respondents who believe that this contribution is smaller.

5. CONCLUSIONS

This article presents a contribution of modern methods application to achieve cost competitiveness in the market. The implementation of these cost management methods of enterprise management shows maturity in terms of understanding the complexity involves costs that burden the product, proper profitability assessment of each product or service, and therefore readiness to enter the European market. Adopting such a holistic focus directs attention to considering the strategic determinants of business performance. In this way they will be more attention given to factors such as changes in the requirements of customers, long-term effectiveness, quality measures, while less attention will be given to tactical issues such as achieving efficiency and lower products cost.

In theoretical terms the expected scientific contribution of this article to the economics is expressed through the development of scientific thought on the importance of application of modern cost management methods through a critical review of existing models and results of research in the field of strategic cost management, determination of the application impact of these strategic cost management methods to the level of business performance, increase competitive advantages, opportunities to reduce product cost and a more realistic estimate of the lifecycle product costs in medium and large industrial enterprises.

In terms of the applicative expected scientific contribution of this paper is in the results of research of the contribution when applying strategic cost management methods to increase the competitiveness of enterprises by reducing the total cost of operations and a more realistic estimate of future costs, and

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thus the profitability of products. Beside impact to these factors of the business significant is role of strategic cost management model in the continuous promotion of creative and innovative activities within the company. It provides company management to maintain and improve market position.

Further research should be focused toward studying the contribution of the strategic cost management model application in small industrial firms and service companies.

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INFORMATION SOURCES INFLUENCING THE CUSTOMERS' CHOICE OF HOME LOAN PROVIDERS

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Abstract

The rates for the provision of mortgage products had been maintained at particularly high levels for the pre-crisis years with commercial banks having the leading role. After the heavy fall in economy 2009 the Latvian commercial banks' mortgage credit portfolios are more prudent. Banks cannot always have the lowest rate in market. Thus, now most of Latvian banks are paying great attention to home loans by promoting and advertising home loan products that are based on offering the best services and suitable offers for the client's benefit.

Purpose – The purpose of this paper is to investigate customers' use of information sources of home loan obtaining and customers' attitude toward the possibility to obtain a home loan.

Methodology – A field survey of bank customers in Latvia was conducted using a structured questionnaire. The quantitative study draws data from 1085 participants. The data were factor-analysed to determine the key dimensions.

Findings – The results show that there are three information sources' key dimensions that customers use for choosing of home loan providers.

An accurate appreciation of information sources may aid bank marketer in their attempts to deliver offerings, which will motivate customers decisions.

Key words: *home loans, marketing, commercial banks, information sources*

1. INTRODUCTION

The local home loan market appears to be an increasingly desirable target for many international and local commercial banks. This is especially true of consumers in the Latvia, Lithunia and Estonia. According to the Report on the Economic Development of Latvia (2011 December) "The year 2011 has been remarkable because the Latvian economy was able to recover from the deep recession and grow faster than even the optimistic experts expected. In accordance with the evaluation of experts of the Ministry of Economics, the GDP growth could reach 5.5% in 2011. Moreover, we have been able not only to grow, but also to implement structural changes in the economy and turn public finances in a more sustainable direction. Recovery of the Latvian economy has been also recognized internationally as the international rating agencies raised the credit rating of Latvia thus reducing public expenditures for external debt management and borrowing expenses for entrepreneurs. The international loan programme has been successfully completed at the end of 2011 thus confirming that Latvia belongs to the Nordic states which are characterised by responsible attitude towards public administration and finances". Perhaps not surprisingly, the largest chunk of this good tendency goes towards homes purchaising.

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With the prevailing focus on customers and service quality, retail banks have been concerned with continuously monitoring how effectively they meet or exceed the needs of customers. In Baltic countries and more specifically, Latvia, economic stabilization is paving the way for a shift to a consumer's economy whereby companies compete for the attention of customers (Owusu-Frimpong et al., 2011). The growth of the Latvian economy till 2008, the surge in Latvia's international trade and the entry of foreign banks to the market has brought bank marketing to the fore.

Home loans products make the markets that had the huge increase before crisis. The great fall of interest rates along with the offering of new, more flexible and attractive products had led to an increase in demand relating to housing.

The financial crises in Latvia presented, that households took out risky loans that were pushed by lenders who didn't care about the riskiness of these loans as they would be packaged and sold.

After the heavy fall in economy the Latvian commercial banks' mortgage credit portfolios are more prudent and in 2011 the changes in credit politics should continue.

So all Latvian commercial banks should direct their marketing steps to reach customers' trust. Banks cannot always have the lowest rate in market. Banks have to differentiate themselves and find new competitive advantages.

Due to the rapid changes in the Latvian economic environment and the banking sector in particular that impact customers bank selection and patronage, how consumers select their banks, stated to in the literature as bank selection (Anderson et al., 1976; Almossawi, 2001; Blankson et al., 2007) or bank patronage behaviour (Erol et al., 1990; Owusu-Frimpong, 1999) has attracted consumers' attention and continue to do so even today. Blankson et al. (2009, p. 186) posit that the need to understand the factors impinging on consumer's selection of retail banks for home loan obtaining is one of the most important strategic issues needed in the changing banking environment, particularly for policy makers such as advertising executives and senior bank managers. Owusu-Frimpong (1999) suggests that a sound knowledge of the bank selection criteria of consumers is critical in formulating marketing mix strategies to satisfy, attract and retain consumers especially in developing countries where banking culture is fast catching up with the people.

This analysis aims to investigate home loan provider selection among Latvian consumer and introduces a set of information sources that depict the most prevalent criteria. As in most studies on bank selection (Owusu-Frimpong, 1999; Blankson et al. 2009), in order to investigate the problem were applied quantitative approaches. Goulding (2005) instates that quantitative research facilitates the ability to attain valid insights, develop theory and help efficient decision making. It provides in-depth insights of respondents' motives, needs and values, level of behaviours and satisfaction.

2. HOME LOAN MARKET

Some selected statistics (Financial and Capital Market Commission data about credit institutions and Central Statistical Bureau's data) on Latvian banking markets are given in Table 1. It shows that commercial banks play important economic roles in Latvia, however it has relatively low values for the ratio of total banking sector assets to real gross domestic product (GDP).

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Table 1. Overview of Latvian banking market in 2007 – 2011

	2007	**2008**	**2009**	**2010**	**2011**
Banks and branches of foreign banks, incl.	25	27	27	29	31
branches of foreign banks	4	6	6	8	9
subsidiaries of foreign banks in Latvia	10	10	10	10	9
Total bank assets to real GDP (%)	6.6	5.7	5.7	4.9	5.5
Asset share of the five largest banks (%)	66.6	69.5	68.2	59.3	58.5

According to Financial and Capital Market Commission data on 2012 beginning were 22 banks and nine branches of EU banks operating in the Republic of Latvia.

During the year 2010, the market share of five largest banks dropped in assets. So the situation in 2011 is the opposite.

Although market share of five largest banks slightly decreased in the Latvian banking sector, they still form the biggest part of banking market.

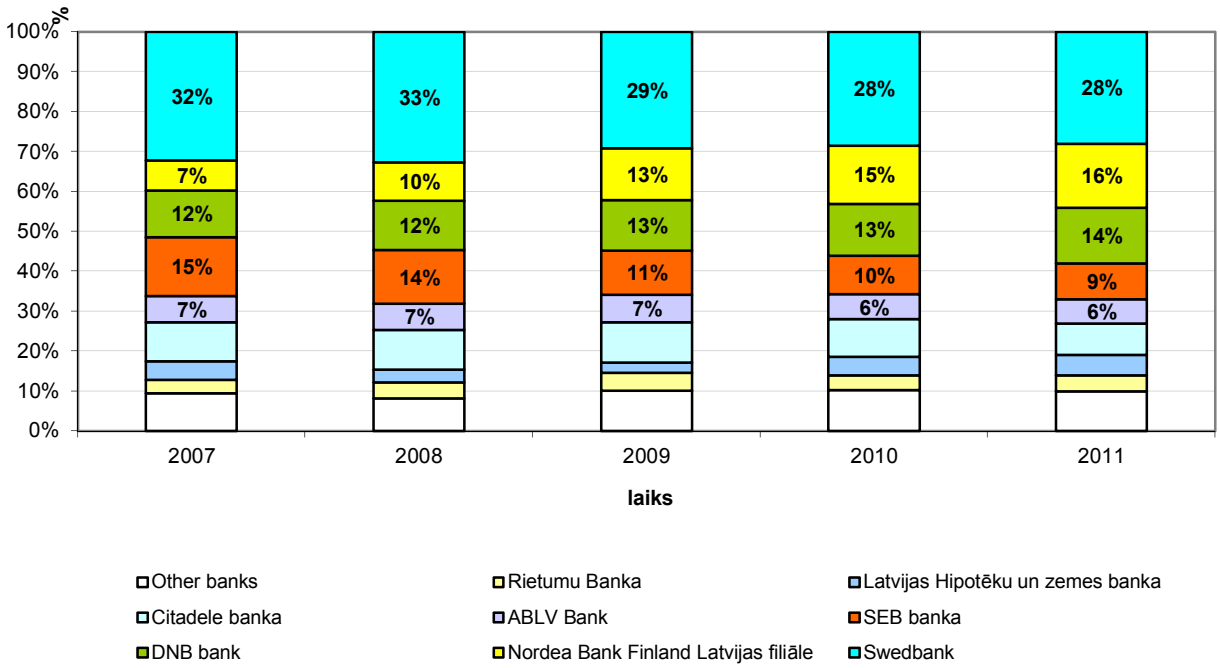

Fig. 1. Market share of five largest banks of mortgage loans in 2007 – 2011 in Latvia

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In the reporting year the five leaders of assets were *Swedbank*, *SEB Bank*, *Nordea Bank Finland*, *DNB Bank*, *ABLV bank*; the leaders of deposits were the same banks excepting *DNB bank* – in it's place was *Rietumu Bank*. In the list of leaders of loans were *Swedbank*, *SEB Bank*, *Nordea Bank Finland*, *DNB bank*, *Latvijas Hipotēku un zemes bank* (data of Association of Latvian Commercial Banks statistics).

The same situation was in mortgage loan market in 2005-2009 years, which is clearly demonstrated by Figure 1 (data of Annual reports of Association of Latvian Commercial Banks).

The last five years the leaders of mortgage loans was *Swedbank*, *SEB Bank*, *Nordea Bank Finland*, *DNB bank*, *ABLV Bank*.

3. RESEARCH DESIGN AND METHODOLOGY

The data for the study was gathered from five Latvian Universities, six government institutions, two Latvian commercial banks, using self-completion questionnaires during a Internet interview, with questions posed in web-site www.visidati.lv. The data was collected in the 2012 January – March. The sample was screened for aging and all of respondents were within the age bracket of 18 to 70 years of age. The average age of the sample members is approximately 35.8 years. Questions were asked around the following themes:

- demographic characteristics;
- satisfaction with habitat;
- information sources that influencing consumers' choice of home loan's bank;
- choice criteria that influencing consumers' choice of home loan's bank;
- attitude toward the possibility of obtaining a home loan.

The obtained sample frame is 1156 respondents. Subsequent to the editing process, only 67 respondents were given unqualitative answers. So data analysis was conducted on 1085 completed questionnaires.

The sample comprised women and men, over 18 years old, who had almost employed (see Table 2).

The respondents profile is made up of 19.8 percent males and 80.2 percent females; while 9.7 and 90.3 percent represent undergraduate and postgraduates respectively. Out of the 870 females, 71 were ungraduates while 799 were graduates. Over 46 percent of the respondents were aged between 26-35, while over 81 percent were aged between 26-55 years which indicates that age may influence the importance accorded to intangibles such as empathy and assurance, as older people could be more concerned of assurance and loan transaction costs. Regarding occupation, over 97 percent were workers, while 2.7 percent were unemployed. The 97 percent salaried employees respondents could be explained by the fact that the author had sending quastionories links to the respondents' work e-mails. Similarly, most employed respondents were post-graduates. That's why the count of graduated people is so high.

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Table 2. The respondents profile, January – March 2012, (n=1085)

Sample demographics		
Demographics	**Number**	**%**
Gender		
Female	870	80.2 %
Male	215	19.8 %
Age		
18 – 20	6	0.55 %
21 – 25	137	12.63 %
26 – 30	314	28.94 %
31 – 35	190	17.51 %
36 – 40	114	10.51 %
41 – 45	86	7.93 %
46 – 50	92	8.48 %
51 – 55	90	8.29 %
56 – 60	42	3.87 %
61 – 65	12	1.11 %
65 – 70	2	0.18
Employ		
Employed	1056	97.3 %
Unemployed	29	2.7 %

4. RESEARCH FINDINGS

The first measurement required was asked around the respondents' satisfaction with housing conditions. Exact dissatisfaction with habitat serves as a catalyst for a new house purchase or refurbishment, and the resulting home loan obtaining.

Each respondent was asked to identify the satisfaction level of his housing conditions. A ten-point scale was used to measure consumers' level of satisfaction. The data were analyzed using descriptive statistics and correlation analysis (see Table 3).

Table 3. Descriptive statistics of the respondents' housing satisfaction measure, January – March 2012 (n=1085)

n	Mean	Std. Error of Mean	Median	Mode	Std. Deviation	Vari-ance	Min	Max
1085	6.7834	.07015	7.0000	8.00	2.31075	5.340	1.00	10.00

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The respondents expressed satisfaction with their overall housing situation, because the median evaluation of the satisfaction is 7, and average value is 6.78.

The author assumes that such satisfaction with housing situation is related to the life of young people with parents. This means that the housing conditions is in a well. But creating their own family, young people will require the largest residential area. As a result it will determine the potential for mortgage lending.

Housing satisfaction was not significantly correlated with respondents' evaluating of home loan obtaining possibilities (r=0.17).

It is very important for banks to recognize the fears that affect the customers' decisions of home loan obtaining and choice for the purchase of mortgage products. For most customers, the assumption, that bank will not lending a loan, and thinking about cooperation of bank is considered to be the important criteria in the decision making (Table 4).

Table 4. Descriptive statistics of the respondents' evaluating of home loan obtaining possibilities, January – March 2012 (n=1085)

n	Mean	Std. Error of Mean	Median	Mode	Std. Deviation	Vari-ance	Min	Max
1085	5.4700	.06118	5.0000	5.00	2.01523	4.061	1.00	10.00

The main measurement required for the research was a scale to measure information sources relevant in choosing a home loan provider (bank). The questionnaire contained a set of 12 information sources related to various aspects of information distribution about banks' products, specifically, home loan products' attributes and performance.

More specific, the measurement items used are the following:

- bank web sites;
- responses in the Internet;
- advices of loan experts;
- pamphlet;
- advices of friends;
- information in the press;
- advices of relations;
- consultations in a bank branches;
- advices of middleman;
- information at TV;
- advices of acquaintances;
- information at radio.

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For the measuring was used a eleven-point scale, where the first answer was zero as "Not use" and other answers was the values from 1 to 10. The ten-point scale generally shows higher validity than the five-point scale. Also the ten-point scale showed a higher explanatory power for the main variables in our model (satisfaction and loyalty) thus confirming a higher validity. For the data analysis, and in order to provide a multivariate perspective on the 12 variables measuring customer using of information sources and identify the variables that could be treated as factors that form customers' choice, a summary statistical measure was used. Particularly, a principal components factor analysis rotation was conducted to extract a number of linear combinations of the original variables. Further analysis was performed to show the size and order of importance of factors, based on the percentages of variance explained by each factor.

The author, using SPSS version 17.0, produced a component matrix of items and confirmed it in factors. Table 5 shows the component matrix of the four factors.

Table 5. Factors related to Latvian consumers' using of information sources of home loan banks, January – March 2012 (n=1085)

Component Matrix[a]

	Component		
	1	2	3
bank web sites	.479	.640	.029
responses in the Internet	.636	.133	-.054
advices of loan experts	.587	.231	.470
pamphlet	.590	.440	-.157
advices of friends	.699	-.356	.441
information in the press	.755	-.117	-.274
advices of relations	.725	-.344	.327
consultations in a bank branches	.388	.480	.423
advices of middleman	.601	-.022	-.190
information at TV	.760	-.048	-.461
advices of acquaintances	.749	-.392	.168
information at radio	.769	-.055	-.426

Factor loadings of the 12 items of the eleven-point scale produced three complex factors. Table 5 shows that items *responses in the Internet*, *information in the press*, *information at TV*, *information at radio* loaded on Complex Factor I. Overall, Complex Factor I seemed to reflect the information in

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mass media. The following items loaded on Factor 2: *bank web sites*, *pamphlet*, *consultations in a bank branches*. The items *advices of loan experts*, *advices of friends*, *advices of relations*, *advices of acquaintances* loaded on Factor III.

The three identified complex factors labeled as:

1. Information in mass media;
2. Information sources, that created by bank;
3. Recommendations with respect to professional advice.

5. CONCLUSION

Considering the above findings, this study contributes to the body of academic knowledge by shedding more light into the information sources, which influence customers' bank selection and future relationship with the bank. At the same time, this study has several outputs for bank marketers, as it reveals evaluating of home loan obtaining possibilities is very important for customers and determines their decision of cooperating with the commercial bank. An accurate appreciation of choice criteria may aid bank marketing specialists in their attempts to deliver offerings, which will motivate students' decisions.

Latvian commercial banks' marketing managers should have to base the methods of sales of home credits to customers on such complex factors as information in mass media, information sources, that created by bank, recommendations.

Latvian commercial banks' marketing managers should have to directed more resources to the development of business clients attracting, in parallel offering wages' counts for its employers.

Moreover, managers should formulate strategies and develop appropriate actions by focusing on particular service dimensions that do constitute significant choice criteria in the target market. In this frame, banks' strategies should place special emphasis on hiring competent and friendly personnel, and training employees in order to increase their efficiency of completing banking transactions and developing interpersonal communication skills.

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THE INSURANCE-LINKED SECURITIES MARKET. TRACKING THE DIVERSIFICATION POTENTIAL OF THE CAT BOND FUNDS

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Abstract

The present paper aims at analysing the state of the insurance-linked securities market by focusing on the catastrophe bond investment funds. The research examines the diversification potential of this niche market both for a European and an U.S.A. based investor, in a static and dynamic framework, by investigating its evolution in turmoil and normal times of the international economic environment. Therefore, we derive efficient frontiers in order to reveal whether the performance of well diversified portfolios formed with stocks from developed and emerging markets could be enhanced through investing in alternative risk transfer products such as catastrophe bonds.

Key words: *insurance-linked securities, catastrophe bond funds, alternative risk transfer solutions, efficient frontiers, diversification and financial innovation*

INTRODUCTION

Within a world of volatility in the international capital markets and of increasing opportunities of portfolio investments, investors aim to find assets that exhibit neutrality with respect to the traditional asset classes. Though not totally neutral from the financial markets recent turmoil events, an asset that proved to be a viable investment solution was represented by the catastrophe bonds, assets whose coupons and/or principal payments depend on the occurrence of a well-defined natural event like an earthquake or a hurricane. Furthermore, within this framework, there is a wide consensus that the activity of the cat bond funds is growing, making them a topic of interest for further research.

Following Constantin and Cernat-Gruici (2008), Iamandi and Constantin (2009) and Constantin (2011), the research within this paper focuses on the catastrophe bonds, as a focal element of the insurance-linked market, and examines the diversification potential of the catastrophe bonds funds. The analysis within this research is developed by considering the benefits the catastrophe bonds funds have on well diversified portfolios hold both by a European developed market based investor and by an USA based investor, from a static and a dynamic point of view while reflecting these investments relevance in normal versus turmoil times.

2. DATA AND RESEARCH METHODOLOGY

We examine, within a dynamic framework, the benefits derived from investing in cat bond funds by deriving and comparing efficient frontiers made up of efficient portfolios including or not cat bond funds. The dynamics of cat bond funds impact on the performance of European and USA based

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investors' portfolios is questioned by decomposing the overall period in three sub-periods, each reflecting the different financial markets evolutions and states:

(i) *December 2004-September 2007*, a period of economic growth and booming financial markets;

(ii) *October 2007-March 2009*, a period of economic crisis;

(iii) *April 2009-January 2012*, a period of slow recovery of the financial markets.

The first investor holds a portfolio made up of stocks from European developed markets and stocks from worldwide emerging markets, while the second investor has a portfolio consisting in USA market stocks and stocks from worldwide emerging markets. Therefore, both investors consider diversifying their portfolios by including cat bond funds.

In order to reflect the ***performance of the considered stock markets***, we use monthly data on standard (large and mid-capitalization) stock indices and cat bonds funds between *December 2004* and *January 2012*. In order to reflect the exposure to the ***European developed capital markets*** we employed the Euro denominated Morgan Stanley Capital International (MSCI) index, including the following 16 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom. For the ***USA based investor*** we used the USD denominated MSCI index.

In order to replicate the ***worldwide emerging markets*** exposure we collected Euro and USD denominated data from the MSCI database for the corresponding index that encompasses 21 countries: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand and Turkey.

As far as the ***catastrophe bond funds market*** is concerned, we took into account, based on the length of the time series and availability of data, four investment funds: two funds of Clariden Leu (Clariden Leu (CH) Cat Bond Fund EUR A-Class and Clariden Leu (CH) Cat Bond Fund USD A-Class) and two funds from Falcon Private Bank (Falcon Cat Bond Fund EUR –A and Falcon Cat Bond Fund USD –A). The data was collected from the www.swissfunddata.ch website. Each investor chooses to invest both in the Clariden Leu and the Falcon Private Bank funds, in accordance with its portfolio currency (Euro or USD). In order to elude the likely situation when both funds invest in the same catastrophe bond, the analysis will be conducted by investing in the Clariden and Falcon funds one at a time. Within our analysis, the Clariden Leu funds will be denoted CLCBF while the Falcon Private Bank funds will be represented as FCBF.

Table 1. Descriptive statistics of returns – European based investor perspective presents the values of mean monthly returns, standard deviations, skewness and kurtosis for the stock market and cat bond returns from the perspective of the European investor both for the entire period. Overall, the investments made would have provided the European-based investor with positive mean returns, while the two cat bond funds presented similar mean returns. Furthermore, the values of the standard deviations of returns denote more volatility on the stock markets side, compared to the cat bond funds.

The negative skewness values as well as the kurtosis values reflect an asymmetric and leptokurtic distribution of return, while the Jarque-Bera test and its corresponding probability indicate the rejection of the normality hypothesis as a corroboration of classical research on capital markets return features.

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From a dynamic perspective, one can notice the positive mean returns both for the normal and the recovery periods and the negative ones, as expected, for the crisis period. In terms of risk, according to the standard deviation values, it seems that the cat bond fund returns are less volatile than the stock market returns during each of the three sub-periods. Due to the length of the three time series, one cannot infer any statement with regard to the normality test.

Table 1. Descriptive statistics of returns – European based investor perspective

The overall period				
	Dev_Europe	***Em_EUR***	***Clariden_EUR***	***Falcon_EUR***
Mean	0.0004	0.0085	0.0024	0.0023
Median	0.0084	0.0169	0.0036	0.0038
Maximum	0.1256	0.1528	0.0164	0.0132
Minimum	-0.1374	-0.2193	-0.0468	-0.0645
Std. Dev.	0.0467	0.0642	0.0084	0.0096
Skewness	-0.7410	-0.8664	-3.0429	-4.3680
Kurtosis	4.1748	4.3019	16.5446	28.9509
Jarque-Bera	12.9649	17.0282	799.2820	2,717.8970
Probability	0.0015	0.0002	0.0000	0.0000
The normal period				
Mean	0.0125	0.0235	0.0036	0.0030
Median	0.0194	0.0290	0.0037	0.0032
Maximum	0.0432	0.1068	0.0144	0.0132
Minimum	-0.0545	-0.1334	-0.0124	-0.0137
Std. Dev.	0.0237	0.0465	0.0054	0.0048
The crisis period				
Mean	-0.0423	-0.0378	-0.0010	-0.0006
Median	-0.0388	-0.0302	0.0018	0.0040
Maximum	0.0557	0.0934	0.0083	0.0083
Minimum	-0.1374	-0.2193	-0.0260	-0.0203
Std. Dev.	0.0572	0.0894	0.0096	0.0099
The recovery period				
Mean	0.0105	0.0175	0.0029	0.0031
Median	0.0122	0.0125	0.0037	0.0048
Maximum	0.1256	0.1528	0.0164	0.0132

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Minimum	-0.1102	-0.0984	-0.0468	-0.0645
Std. Dev.	0.0464	0.0539	0.0099	0.0126

The research continued by analysing the asset returns considered by the USA based investor, whose results are displayed in *Table 2. Descriptive statistics of returns – USA based investor perspective* for the overall period as well as for the three different periods of our sample. As for the European based investor, the investments made by the USA-based one would have provided with positive mean returns. In terms of risk, the standard deviations values of returns reflect that the stocks seem to exhibit more volatility than the cat bond funds.

As expected, we found negative skewness values, reflecting asymmetric return distributions. As far as the kurtosis values are concerned, one can notice that they reflect a leptokurtic distribution of return. The Jarque-Bera test and its corresponding probability point to the rejection of the normality hypothesis. The dynamic approach revealed, again, positive mean returns for the normal as well as for the recovery period and the negative ones for all the assets in times of turmoil. During each of the three sub-periods, the cat bond funds presented less volatility than the stock markets, as reflected in the standard deviations values.

Table 2. Descriptive statistics of returns – USA based investor perspective

The overall period				
	Dev_USA	***Em_USD***	***Clariden_USD***	***Falcon_USD***
Mean	0.0019	0.0088	0.0029	0.0027
Median	0.0101	0.0096	0.0041	0.0041
Maximum	0.1029	0.1541	0.0181	0.0181
Minimum	-0.1893	-0.3216	-0.0476	-0.0650
Std. Dev.	0.0480	0.0787	0.0089	0.0107
Skewness	-0.9547	-1.0542	-2.9671	-3.5669
Kurtosis	5.0841	5.5370	15.5967	20.8128
Jarque-Bera	28.9599	39.4464	702.8577	1334.6750
Probability	0.0000	0.0000	0.0000	0.0000
The normal period				
Mean	0.0088	0.0266	0.0045	0.0042
Median	0.0114	0.0367	0.0050	0.0044
Maximum	0.0410	0.1038	0.0181	0.0146
Minimum	-0.0325	-0.1139	-0.0233	-0.0165
Std. Dev.	0.0220	0.0497	0.0070	0.0055
The crisis period				

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Mean	-0.0357	-0.0416	-0.0012	-0.0021
Median	-0.0234	-0.0572	0.0013	0.0030
Maximum	0.0802	0.1324	0.0095	0.0096
Minimum	-0.1893	-0.3216	-0.0271	-0.0270
Std. Dev.	0.0656	0.1129	0.0094	0.0116
The recovery period				
Mean	0.0148	0.0171	0.0033	0.0035
Median	0.0208	0.0014	0.0039	0.0049
Maximum	0.1029	0.1541	0.0168	0.0181
Minimum	-0.0863	-0.1600	-0.0476	-0.0650
Std. Dev.	0.0478	0.0722	0.0098	0.0134

The efficient frontiers were derived using the Financial Toolbox of the MATLAB computational package. Consequently, the research consisted in deriving thirty two efficient portfolio frontiers by considering or not the investment in cat bond funds, while allowing short-selling the stocks: frontiers of European developed and world emerging markets; frontiers including European developed, world emerging markets and euro denominated cat bond funds, frontiers combining the USA and the world emerging markets and frontiers mingling the USA market, the world emerging markets and cat bond funds.

Within a Markowitz (1952, 1959) framework, the asset combinations considered within our research were plotted in the standard deviation-expected return (risk-return) space, resulting in a specific area in that space. The efficient frontiers stand for the lines that delimitates the upper edge of the resulted area. In other words, the efficient frontier is shaped with efficient portfolios that simultaneously respect the following conditions: (i) for a given value of the standard deviation (reflecting the risk), that portfolio is the combination of assets that provides the highest possible return and (ii) for a given level of return that portfolio is the combination of assets that has the lowest possible level of risk (standard deviation).

3. RESULTS AND DISCUSSION OF FINDINGS

The analysis of our findings, illustrated in *Figures 1 to 8*, follows. Therefore, we present the impact of including catastrophe bond funds in diversified portfolios over the entire period and the three sub-periods, as defined above.

3.1. The perspective of a European based investor

3.1.1. The overall period: December 2004-January 2012

For the European based investor, for the overall period, it seems that the performance of the portfolios formed of European developed and worldwide emerging markets could be enhanced by including catastrophe bond funds (see Figure 1 and Figure 2), for all levels of risk. In addition, one can observe that for the cases when the investor tolerates low levels of risk, by including catastrophe bonds funds

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in the portfolio, the investor expands the risk-return profile, no matter what fund he decides to invest in.

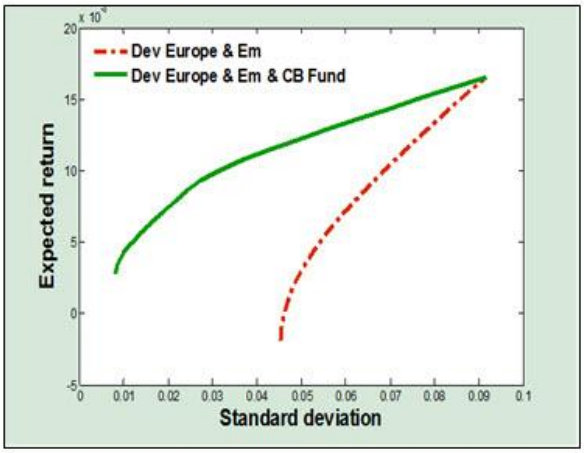

Figure 1. Efficient frontiers-overall period – CLCBF

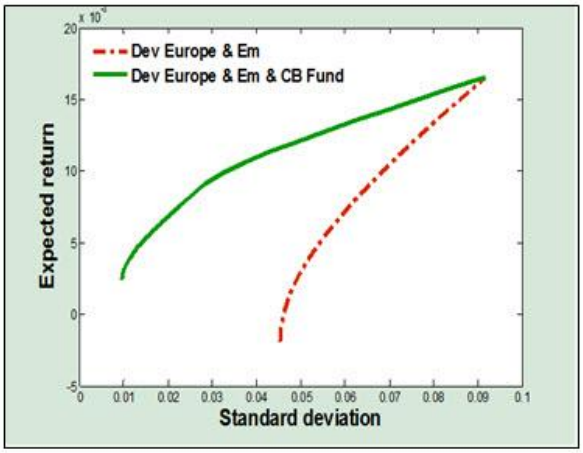

Figure 2. Efficient frontiers-overall period – FCBF

3.1.2. The normal period: December 2004-September 2007

From Figure 3 and Figure 4 we notice that, for the first sub-period, considered a period of tranquility on the financial markets, generally, the portfolios shaped by including cat bond funds outperform those that do not include them. However, it seems that for middle and upper levels of risk the efficient frontiers cross each other, while for low levels of risk there seems that investors would have been better off only by including the insurance linked funds considered within our research.

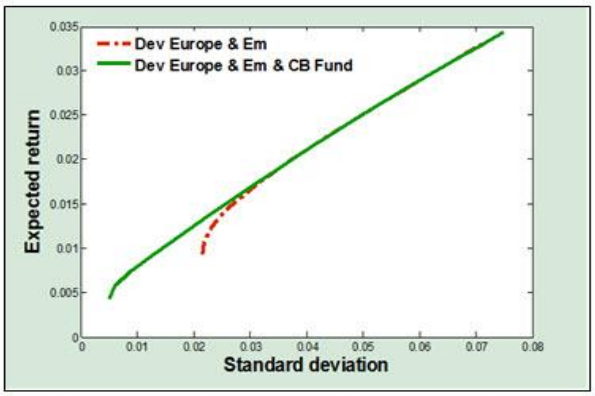

Figure 3. Efficient frontiers-normal period – CLCBF

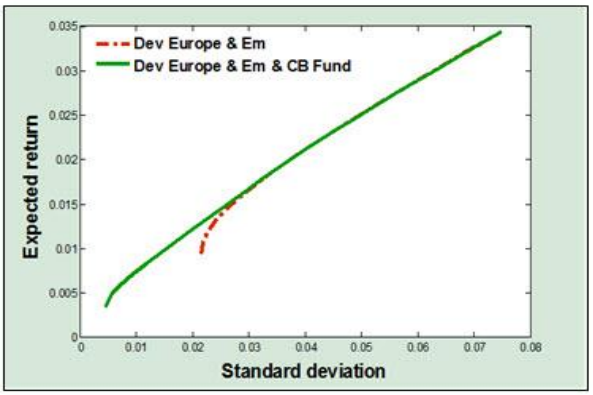

Figure 4. Efficient frontiers-normal period – FCBF

3.1.3. The crisis period: October 2007-March 2009

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The analysis performed for the turmoil period reveals that (see Figure 5 and Figure 6), for the portfolios formed with stocks from European developed and from worldwide emerging markets considering the cat bond funds as an investment would have proven to be a good choice, as these ones would have considerably enhanced the risk-return performance. Furthermore, one should notice that for low and high levels of risk, the cat bond fund investment expands the efficient frontier, allowing returns that otherwise would have not been attainable. Therefore, for the crisis period, there is not only a north-west shift, but also a move towards achieving returns when the investor tolerates either low or high levels of risk, suggesting this would have been a good investment in times of crisis.

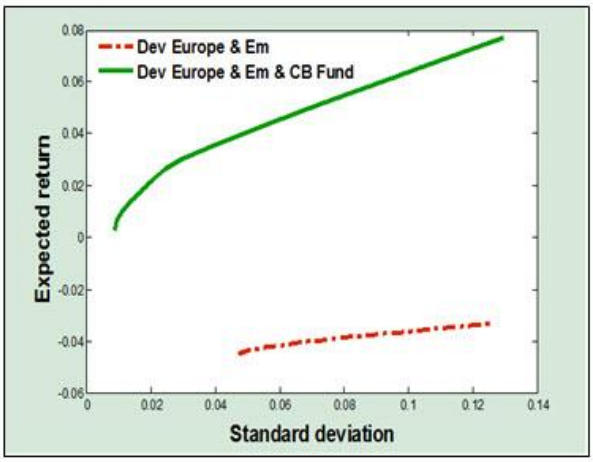

Figure 5. Efficient frontiers-crisis period – CLCBF

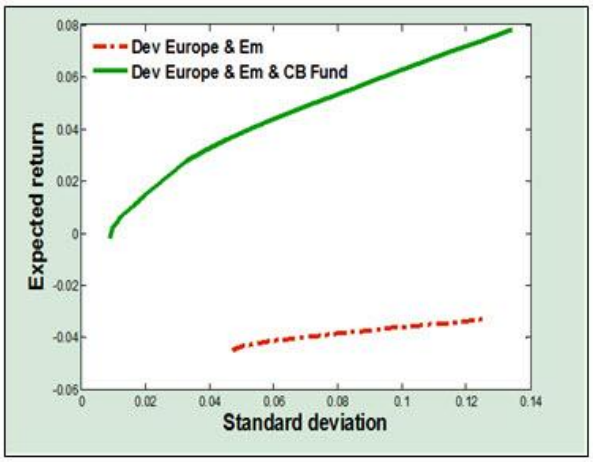

Figure 6. Efficient frontiers-crisis period – FCBF

3.1.4. The recovery period: April 2009-January 2012

When investigating the recovery period (see Figure 7 and figure 8), the analysis reveals a similar situation with that encountered in times of tranquility: for high levels of risk the two frontiers cross each other, making the investor indifferent to the two types of efficient portfolios. However, one can notice that for the investors tolerating middle and low levels of risk, the efficient portfolios formed by considering cat bonds funds provide returns that would not be attainable otherwise.

3.2. The perspective of an USA based investor

3.2.1. The overall period: December 2004-January 2012

As far as the USA based investor case is concerned, for the entire period (see Figure 9 and Figure 10), the results seem to be similar to those obtained for the European based investor: the frontiers formed with efficient portfolios including insurance linked funds are visibly shifted towards north-west. Furthermore, for an investor tolerating low levels of risk, investing in cat bond funds would have proven to be a good opportunity in attaining the desirable returns.

3.2.2. The normal period: December 2004-September 2007

The normal period reveals that the USA based investor would have been better off if investing in insurance linked funds, especially if tolerating low or middle levels of risk. However, if preferring

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high levels of risk, the investor would have been in a situation of indifference, since the efficient frontiers are superimposed (see Figure 11 and Figure 12).

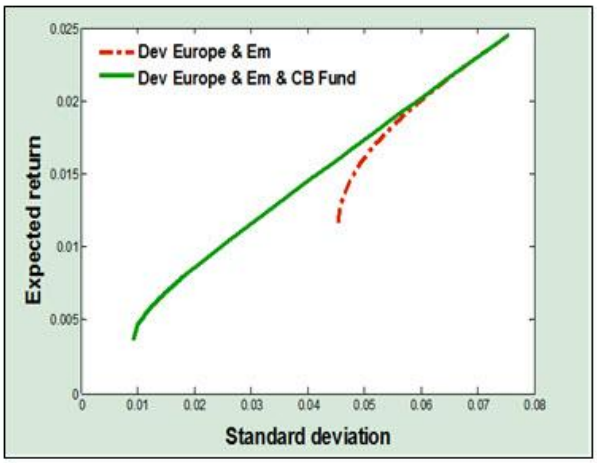

Figure 7. Efficient frontiers-recovery period – CLCBF

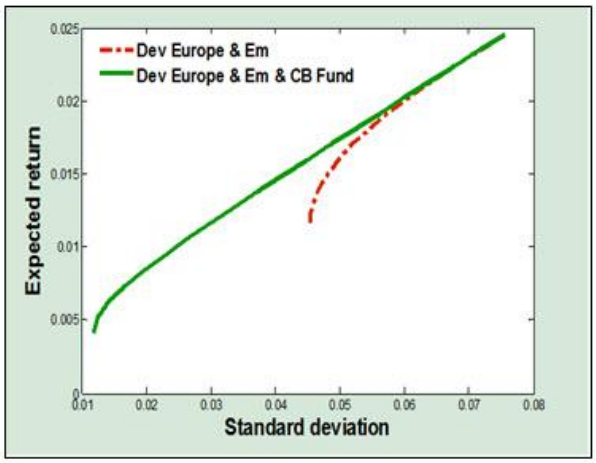

Figure 8. Efficient frontiers-recovery period – FCBF

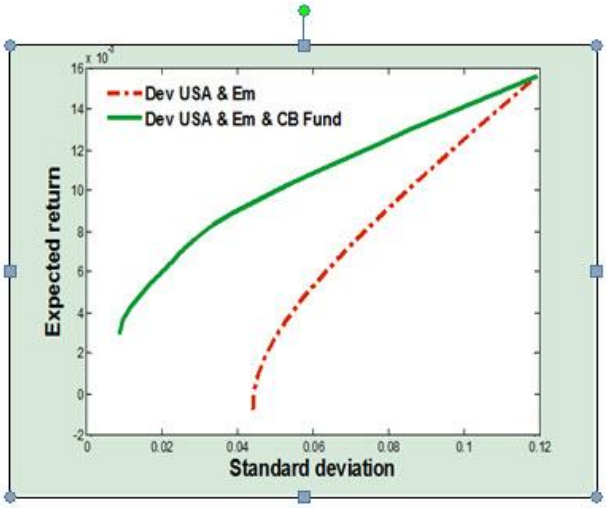

Figure 9. Efficient frontiers-overall period – CLCBF

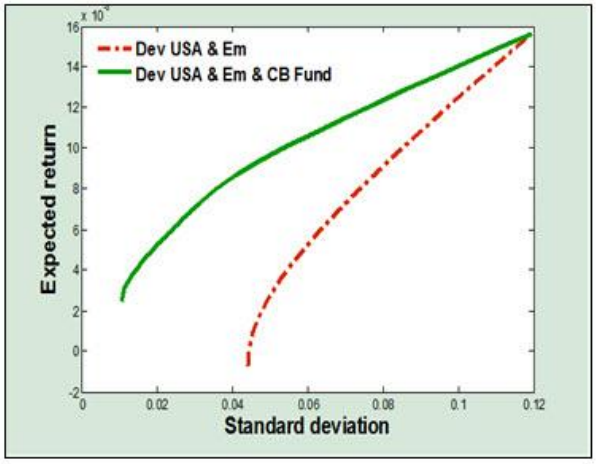

Figure 10. Efficient frontiers-overall period – FCBF

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3.2.3. The crisis period: October 2007-March 2009

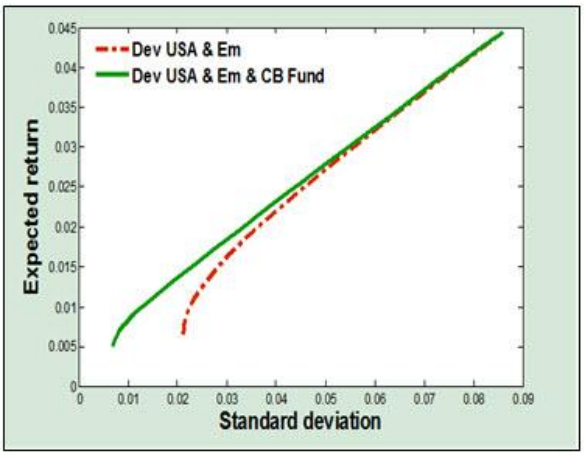

Figure 11. Efficient frontiers-normal period – CLCBF

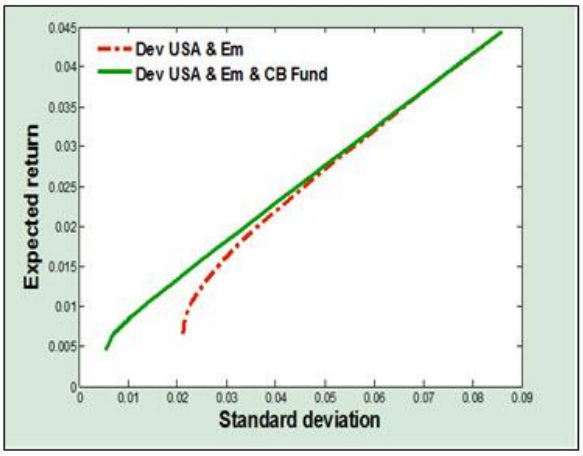

Figure 12. Efficient frontiers-normal period – FCBF

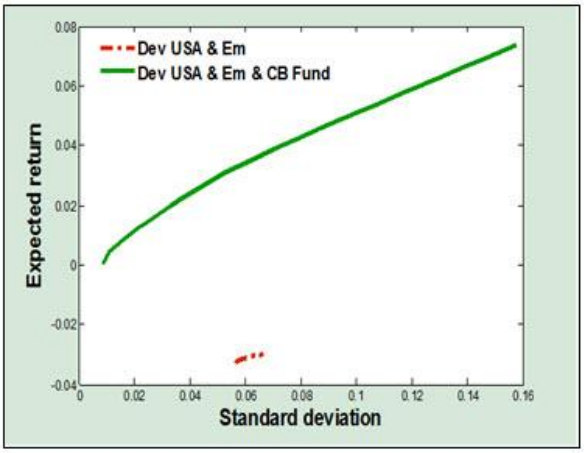

Figure 13. Efficient frontiers-crisis period – CLCBF

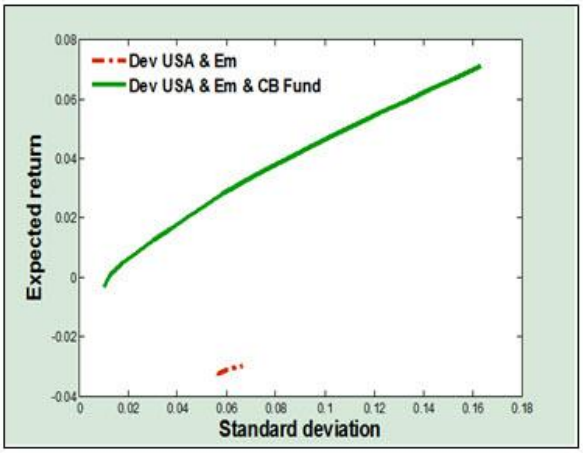

Figure 14. Efficient frontiers-crisis period – FCBF

As for the European based investor, the research performed in times of crisis reveals that (see Figure 13 and Figure 14), for the portfolios formed with stocks from USA and from worldwide emerging markets encompassing the insurance linked funds would have proven to be a good investment strategy during turbulent financial markets, as these ones seem to substantially enhance the risk-return performance.

Furthermore, one should notice the other benefits derived from investing in catastrophe bonds funds during turbulent times: the efficient frontier is greatly expanded allowing investors that tolerate high and low levels of risk to achieve returns accordingly to their risk-return profile, returns that otherwise would have not been achieved.

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3.2.4. The recovery period: April 2009-January 2012

For the USA based investor, the recovery period (see Figure 15 and Figure 16) reveals an interesting situation: for upper middle and high levels of risk, the two efficient frontiers entirely cross each other, suggesting, again, a case of indifference when the investor tolerates this intensities of risk. However, for the investor tolerating lower middle and low levels of risk, the insurance linked funds would have been a good opportunity for attaining returns that would have not been possible if considering only the local and the emerging stock markets.

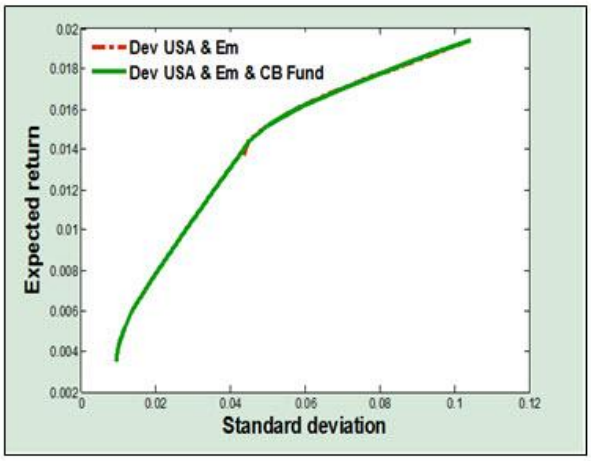

Figure 15. Efficient frontiers-recovery period – CLCBF

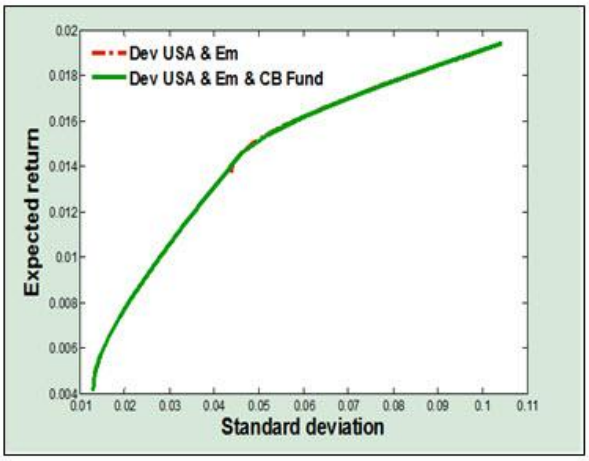

Figure 16. Efficient frontiers-recovery period – FCBF

4. CONCLUSIONS

The research conducted within the paper examines whether the performance of well diversified portfolios can be enhanced by including insurance-linked funds from the perspective of a European and an USA based investors, both in a static (the overall period) and dynamic (the three sub-periods) framework.

The results for the entire period revealed that including catastrophe bonds funds within well diversified portfolios would have considerably shifted the efficient frontier, confirming the diversification potential of this asset class. As far as the normal and recovery periods are concerned, for those investors tolerating high levels of risk there seems to be a state of indifference regarding the efficient portfolios shaped with or without catastrophe bonds funds, while the investors preferring lower levels in risk would have achieved levels in returns, otherwise unattainable if allowing only the considered stock markets. As expected, including these assets in well diversified portfolios during turbulent times would have been a good investment strategy, as there is an obvious performance shift. Overall, the cat bond funds seem to be a good investment opportunity, both during tranquil and turmoil periods.

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PROBLEMS OF DEVELOPMENT OF REGIONAL INFRASTRUCTURE OF SMALL BUSINESS

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Abstract

The article is devoted to questions of development of regional infrastructure of small business in modern Russian conditions. The analysis of modern problems of functioning of small business is carried out. The analysis of the statistic of investments into fixed capital of small enterprises of the Russian regions is presented. Possibilities of development of infrastructure of small business in St. Petersburg are considered.

Key words: *regional infrastructure, small business, problems of functioning of small business*

1. INTRODUCTION

World experience of development of the countries with classical system of the market relations shows that small business plays the major role in modern market economy. It provides more rational and effective use of resources, supports the competition at necessary level, provides flexibility, an economy susceptibility to innovations; allows to satisfy the individualized requirements, provides wide differentiation of production, promotes more uniform development of regions. At last, small business makes considerable impact on a labor market, promotes growth of employment of the population, changes its structure – all this makes stabilizing impact on economy.

Without effective infrastructure normal functioning of a labor market is impossible. This problem is especially actual for Russia where formation of modern infrastructure of the market practically began c of 1991, after adoption of law of the Russian Federation «About population employment in the Russian Federation».

2. PROBLEMS OF DEVELOPMENT OF SMALL BUSINESS IN RUSSIA

The role of territorial aspects of development of economy of Russia increases in modern conditions. It is caused by disproportions in regional development which are especially sharply shown now, in crisis, transition to market economy. Decline in production, unemployment growth in depressive areas, a hyper urbanization, serious environmental problems, centrifugal tendencies in regions demand competent, scientifically reasonable approach to the solution of problems of regional development [1].

As of October 1, 2011 in Russia 231,2 thousand small enterprises that for 5,2 % more than as of October 1, 2010 were registered. The number of small enterprises counting on 100 thousand inhabitants increased by 7,0 units and made 161,8 units.

The number of the registered small enterprises on federal districts of the Russian Federation for October 1, 2011 is given in table 1.

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Growth of number of small enterprises both in absolute value, and counting on 100 thousand inhabitants is fixed in five federal districts. The greatest growth is noted in the Northwest federal district (for 15,6 % or 32,8 small enterprises for each 100 thousand inhabitants), Uralsk the federal district (for 15,6 % or 20,3 small enterprises for each 100 thousand inhabitants) and the Siberian federal district (for 9,1 % or 13,9 small enterprises for each 100 thousand inhabitants).

Table 1. Number of the registered small enterprises (SE) for October 1, 2011.

Federal districts	Number of the registered small enterprises for October 1, 2011. counting on 100 thousand people of the population		
	units	Gain / reduction during 01.10.2010-01.10.2011	in % from an average across the RF
RUSSIAN FEDERATION	161,8	7,0	100,0
Central FD	184,7	0,6	130,9
Northwest FD	263,3	32,8	173,1
Southern FD	125,4	- 4,7	89,9
North Caucasian FD	64,5	2,0	48,1
Volga FD	158,3	0,8	76,3
Ural FD	136,8	20,3	78,7
Siberian FD	142,0	13,9	76,5
Far East FD	153,8	-0,6	84,5

To a lesser extent the number of small enterprises grew in the North Caucasian federal district (by 6,1 % or 2,0 small enterprises for each 100 thousand inhabitants) and the Central federal district (for 4,0 % or 0,6 small enterprises for each 100 thousand inhabitants).

Distribution of regions on groups with various dynamics of number of the registered small enterprises on 100 thousand inhabitants from October 1, 2010 till October 1, 2011 is presented in table 2.

For October 1, 2011 in comparison with October 1, 2010 the number of small enterprises counting on 100 thousand people of the population grew in 50 regions.

The total amount of a turn of small enterprises in the Russian Federation for the first three quarters 2011 made 8 784,9 billion rubles that for 23,5 % above a similar indicator of 2010 (taking into account a consumer price index growth of an indicator made 15,2 %).

3. INVESTMENT INTO FIXED CAPITAL AT SMALL ENTERPRISES

Investments into fixed capital at small enterprises on federal districts of the Russian Federation in January-September, 2011 are given in table 3.

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The volume of investments into fixed capital at small enterprises for the first three quarters 2011 as a whole across the Russian Federation made 172 381,3 million rubles that for 5,7 % above a similar indicator of 2010. At the same time taking into account a consumer price index the indicator was reduced by 1,4 %.

Positive dynamics of volume of investments into fixed capital at small enterprises taking into account IPTs is noted in five federal districts, among them the North Caucasian federal district (the indicator grew by 33,8 %), the Ural federal district (for 17,0 %), the Southern federal district (for 14,3 %), the Volga federal district (for 11,8 %) and the Far East federal district (for 7,3 %).

Table 2. Distribution of regions on groups with various dynamics of number of the registered small enterprises on 100 thousand inhabitants from October 1, 2010 till October 1, 2011

Change of number of small enterprises on 100 thousand inhabitants	Number of regions
Strong reduction (over 30 units)	1
Average reduction (from 10 to 30 units)	12
Small reduction (from 0,1 to 10 units)	20
Small increase (from 0,1 to 10 units)	23
Average increase (from 10 to 30 units)	22
Strong increase (over 30 units)	5

Table 3. Investments into fixed capital at small enterprises on federal districts of the Russian Federation in January – September, 2011

Federal districts	Volume of investments into fixed capital of small enterprises in January-September, 2011		
	million roubles	per capita, rub.	in % by January-September of 2010
RUSSIAN FEDERATION	172 381,3	1 206,2	98,6
Central FD	37 747,0	981,5	88,2
Northwest FD	7 413,4	545,4 2	46,7
Southern FD	34 985,3	525,3	114,3
North Caucasian FD	3 632,8	382,1 1	133,8
Volga FD	42 923,5	436,5	111,8
Ural FD	10 609,6	877,6	117,0
Siberian FD	30 868,3	1 603,6	98,0
Far East FD	4 201,5	668,6	107,3

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In other federal districts negative dynamics of an indicator is observed. The strongest reduction is fixed in the Northwest federal district (for 53,3 %), to a lesser extent the indicator was reduced in the Central federal district (by 11,8 %) and the Siberian federal district (for 2,0 %).

n separate regions of an investment in these periods weren't carried out, or their volumes appeared are small, in this connection the Federal service of the state statistics didn't include them in statistical reports where values of an indicator are aggregated one million rubles. The Chechen Republic and the Republic Ingushetia belong to such regions.

Following the results of January – September, 2011 in 48 regions positive dynamics of volume of investments into fixed capital at small enterprises taking into account IPTs is noted.

The following regions concern leaders on growth rates of an indicator: The Novgorod region (the indicator grew in 5,1 times), the Republic of Karelia (in 4,3 times), the Yamalo-Nenets Autonomous district (in 3,9 times), the Karachaevo-Circassian Republic (in 3,8 times), the Chukchi autonomous district (in 3,5 times), the Republic of Mordovia (in 2,7 times), Ryazan (in 2,4 times), Tyumen (in 2,4 times) and Volgograd (in 2,3 times) areas, the Jewish autonomous region (in 2,3 times), the Omsk region (in 2,3 times), the Khanty-Mansi Autonomous district (in 2,2 times) and the Republic Tyva (in 2,1 times).

The strong increase (50-100 %) indicator is noted also in Tula region (for 99,6 %), the Komi Republic (for 98,8 %), the Saratov region (for 98,5 %), Khabarovsk (for 91,3 %) and Krasnoyarsk (for 84,4 %) edges, Kirov (for 80,5 %), Irkutsk (for 69,7 %) and the Tverskaya (for 62,4 %) areas, the Chuvash Republic (for 61,9 %), Kursk area (for 59,0 %), Altai Krai (for 57,4 %), the Republic Mary El (for 51,9 %) and the Penza region (for 51,5 %).

In table 4 distribution of regions on groups with various dynamics of investments into fixed capital is reflected in small enterprises in January-September, 2011 concerning January-September, 2010.

The greatest reduction of volume of investments into fixed capital at small enterprises is observed in 6 regions, among them Leningrad (the indicator was reduced by 94,5 %) and Ivanovo (for 67,0 %) areas, the Republic Altai (for 57,6 %), the Tomsk region (for 57,1 %), Zabaykalsky Krai (for 56,1 %) and the Oryol region (for 54,4 %).

Table 4. Distribution of regions on groups with various dynamics of investments into fixed capital at small enterprises in January-September, 2011 concerning January – September, 2010

Change of volumes of investments	Number of regions
Strong reduction (50-100 %)	2 *
Average reduction (30-50 %)	6 *
Small reduction (to 30 %)	6 *
Small increase (to 30 %)	21 *
Average increase (30-50 %)	15 *
Strong increase (50-100 %)	7
Very strong increase (over 100 %)	13

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Average reduction (30-50 %) indicator is fixed in Voronezh (the indicator was reduced by 45,0 %) and Astrakhan (for 42,9 %) areas, the Republic of Tatarstan (for 37,8 %), the Udmurt Republic (for 36,3 %), Sverdlovsk (for 35,8 %) and Magadan (for 32,1 %) areas.

4. THE ANALYSIS OF DEVELOPMENT OF SMALL BUSINESS IN ST.PETERSBURG

The significant contribution of small and medium business to social and economic development of St. Petersburg was promoted in many respects by implementation of the previous programs of development and support of the small and average business, become the effective instrument of implementation of policy of St. Petersburg in the field of development of small and average business.

According to Territorial body of Federal service of the state statistics on St. Petersburg and the Leningrad region, in 2007 in the territory of the Leningrad region carried out activity of 14,9 thousand small enterprises. On the account in Management of Federal tax service across the Leningrad region for January 1, 2008 30,5 thousand individual businessmen consisted. 28 subjects of small business are the share of one thousand inhabitants of the Leningrad region. Positive dynamics is observed on the majority of indicators of activity of subjects of small business.

The turn of small enterprises of St. Petersburg for 2010 is estimated at 1086429 million roubles that makes 22 % from a total turnover of the organizations of St. Petersburg. In comparison with the same period of 2009 the turn of small enterprises increased by 10,3 %.

Investments into fixed capital of small enterprises for 2010 made 2402 million roubles. The greatest share of investments into fixed capital – (26,1 %) – at the small enterprises which are carrying out activity in the sphere of trade and household services. the 2nd place (25,5 %) is occupied by small enterprises in the construction sphere. the 3rd place – (24,5 %) – small enterprises in the sphere of processing productions.

Small business of St. Petersburg suffered from financial crisis of 2008. Within several years before crisis of 2008 growth of sector of small business was observed. For 2010 the volume of investments into fixed capital decreased for 34 % in comparison with 2008, for 3 % the volume of a turn of small enterprises decreased, for 21,2 % average number of staff of small enterprises decreased. But thus the total of small enterprises increased by 10 % [4].

Especially sharply felt crisis the small enterprises which are carrying out activity in the sphere of processing productions. Their quantity was reduced by 4 % that led to decrease in average number of employees of these enterprises for 16,2 %, to decrease in a turn for 40 % and to reduction of investments into fixed capital by 35 %.

According to Territorial body of Federal service of the state statistics on St. Petersburg and the Leningrad region on 01.01.2011, in the territory of St. Petersburg carry out the activity of 593 enterprises relating to subjects of average business which provide employment of 74,4 thousand people. The turn of medium-sized enterprises made 215780 million roubles, and investments into fixed capital were carried out in volume of 2463 million roubles.

Estimating the developed structure of subjects of average business on kinds of activity, it should be noted that leading situation on an indicator «a turn of the organizations» is occupied by trade, and the greatest volume of investments into fixed capital is carried out by the medium-sized enterprises which are carrying out activity in the production sphere.

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Considering complex character of the purposes of policy of St. Petersburg in the field of development of small and average business and a ratio of possible risks at various methods of their achievement, the choice of a program and target method is represented reasonable.

With a view of a sustainable development of small and average business in the Leningrad region in the Leningrad region it is entered and the long-term target program «Development and the state support of small and average business in the Leningrad region for 2009-2013» according to the resolution of the government of the Leningrad region from 06.02.2009 of No. 18 [4] operates.

Dynamics of financing of the long-term target program «Development and the state support of small and average business in the Leningrad region for 2009-2013» is presented in table 5.

Table 5. Dynamics of financing of the long-term target program «Development and the state support of small and average business in the Leningrad region for 2009-2013»

Sources and directions expenses	Financial expenses (thousand roubles in the prices of year of the beginning of implementation of the Program)				
	year of the beginning realization	2010	2011	2012	2013
Expenses - all, including:	186064	239791	104451	101847	113667
federal budget	88549	140000			
regional budget	54725	64508	60117	66453	70186
other sources	42790	35283	44334	35394	43481
other needs, including:	186064	239791	104451	101847	113667
federal budget	88549	140000			
regional budget	54725	64508	60117	66453	70186
other sources	42790	35283	44334	35394	43481

The Draft of the charter «St. Petersburg center of cluster development of subjects of small and average business» is developed

The project «Creation and ensuring activity of the St. Petersburg center of cluster development of subjects of small and average business» is created. The center is created for assistance to decision-making and coordination of projects on formation and development of clusters in the territory of St. Petersburg, providing economic growth and all managing subjects satisfying to interests. The center is created in the form of non-profit partnership on the basis of the St. Petersburg Interregional Resource Center. Temporary framework: 2010-2013.

Project purposes:

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1) formation of strategy of an effective versatile cluster complex of St. Petersburg on the basis of maximum and complete use of branch, technological, innovative, human, financial and administrative potential taking into account economic interests of all managing subjects;

2) creation of conditions for effective information interaction of participants of innovative clusters, public authorities, establishments of science and education, other interested persons, including ensuring implementation of joint projects within clusters;

3) assistance to establishment of the contractual relations between participants of innovative clusters, public authorities, science and education establishments, other interested persons;

4) the organization attraction of investment means and means of donors in cluster projects.

Problems of activity it is the organization (Center) are:

1) development of cluster policy of St. Petersburg, including formation and realization «The system project of development of clusters in the territory of St. Petersburg»; 2) development of strategy (system projects) developments of innovative clusters and investment programs on their realization; development and implementation of joint cluster projects of development with involvement of participants of innovative clusters, public authorities, establishments of science and education, other interested persons; 3) the organizations of preparation, retraining and professional development of shots in interests of participants of innovative clusters; 4) rendering of assistance to participants of innovative clusters when receiving the state support, support of donors; 5) assistance in a conclusion to the markets of new products (services) of participants of innovative clusters; 6) the organization of effective interaction among participants of clusters, including. the organization of conferences, seminars, etc. in the sphere of interests of participants of a cluster; 7) the organization of monitoring of a condition of financial and economic, innovative, scientific and production potential of innovative clusters, in particular, on the basis of the mechanism of road maps and methods of an assessment of regulating influence.

Thus, the solution of problems of development of infrastructure of small business (including innovative), will promote the solution of problems of the social sphere namely to promote effective use of considerable human capacity of St. Petersburg.

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EGYPT IN TRANSITION: THE IMPERATIVES FOR ECONOMIC REFORM

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Abstract

The popular uprisings which flowered in Egypt at the beginning of 2011 represent a turning point in the history of this country. Egypt is the largest Arab country and has one of the largest economies in the region. The events which have happened in the latest months highlight the serious difficulties and uncertainties surrounding the transition process in Egypt. The demands being made across the country transcend purely political matters and attain economic and social issues. The implementation of successful economic reform is imperative, although it is particularly challenging amid this political and social instability. The purpose of this paper is to capture the transformations which have taken place in Egypt and, accordingly, the main economic and social effects and to identify possible solutions to the contradictions generated by the complex process of transition in this country.

Key words: *Egypt, transition, democracy, economic reform, social environment, demography*

1. INTRODUCTION

No matter how powerful the forces of history might be, "the precise catalysts of change are often unpredictable" (Wright, 2008). The same idea is outlined by Taleb (2011) when referring to the "black swan of Cairo" (the artificial suppression of volatility in many aspects of life makes the world more dangerous and less predictable, that is the constrained systems tend to become extremely fragile and vulnerable to unpredictable events whose probability to occur are not scientifically measurable). This pattern could be applied to the recent upheavals in Egypt that could not be predicted by the observers, especially those involved. Although the riots in Egypt were attributed to increasing commodity prices (not to stifling dictatorship), the motivations have deeper implications. What the world witnessed in Egypt (or Tunisia and Libya) was simply the effect of a constrained system exploding.

The only certainty about the recent upheavals sweeping Egypt's political and social stability is that actually nothing will be as it was before 2011 and all these events opened the door for democratic transition. The journey will be an arduous and full of challenges process. The political transition in Egypt is not necessary to be accompanied by fundamental economical changes as it was the case of former communist countries in the Central-Eastern Europe during the 1990s. Unlike these countries, the Egyptian economy is mostly private and market oriented, as a result of the economic reforms implemented during the last decade. But most Egyptians did not benefit from economic reforms. Only a business elite connected to Mubarak's family thrived. This feeling of injustice among most of the Egyptians was exacerbated by the government's incapacity to provide basic services and its apparent indifference to widespread unemployment and poverty. This government's mismanagement of the economy fuelled popular dissatisfaction and created a constant sense of crisis. Finally, a key reason for explaining the Arab Spring in Egypt was the pervasive authoritarianism of the leading forces.

The purpose of this paper is to highlight Egypt's main economic and social challenges, to capture the transformations which have taken place on the road to democratic transition and to identify possible

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solutions to the contradictions generated by the complex process of transition in this country. Being a descriptive study above all, this paper will focus on using the conceptual framework which aims at making connections between all aspects of the research.

2. EGYPT BEFORE THE REVOLUTION: THE ECONOMIC LEGACY OF THE PAST

Egypt is the most populous Arab country, around 81 million people in 2010 (World Bank) and one of the largest economies in the region. Economic conditions are harsh, with 2010 gross domestic product (GDP) per capita of $2789 (International Monetary Fund, 2011). Although the economic performance has not been impressive during the last decades, Egypt's political influence within the Arab world was considerable. Some of the roots of the socioeconomic problems Egypt faced on the eve of 2011 go deeper than just the last 20 years. There are a series of legacies that contributed both positively and negatively to the current socioeconomic situation and these are the legacies of Egypt former presidents Nasser, Sadat and Mubarak.

2.1. Nasser's legacy: centralization

The revolution in 1952 represented the end for the Egyptian monarchy and brought to power Gamal Abdel Nasser. This period also laid the groundwork for today's police state, as many institutions of Egypt's national security were then created. The main features of Nasser's project were: the nationalization of large sectors of the economy and the creation of one - party state. The reason was that rapid economic and political reform could be achieved only through force, and concentrating the power within a handful of state institutions could accomplish this belief.

Nasser's ideological basis was represented by the twin theories of Arab nationalism and Arab socialism (Hibbard, Layton, 2011). Arab nationalism became the basis of his political goals; it referred to the idea that the revival of the Arab world required its political unification. Implicit was the perception that the Arabs were divided by European powers and this division led to the region's weakness. "From the 1950s to the 1970s the two crucial themes in Arab nationalist thinking were the struggle for unity and socioeconomic development. At this stage some form of socialism generally became a part of Arab nationalist ideologies." (Lapidus, 1988).

Arab socialism offered an economic element to this political doctrine. According to Goode (1975) it also emerged as a result of colonialism coupled with economic underdevelopment characteristic of Arab societies at the beginning of 21st century. The aims of Arab socialism were to free the Arab world from Western colonial rule, to establish pride and social justice within these societies and to unify the Arab world. Egypt, like other former colonies, had economies based on providing raw material for export (especially cotton) in Europe and imported manufactured goods. Consequently, Egypt had a subordinate role in the international economy and the country economic wellbeing remained tied to the fluctuation of commodity prices (Hibbard, Layton, 2011). The solution, then, was a state-led economic program of development that included the nationalization of European companies and Egyptian banks, land reform and industrialization, as well as new policies of import substitution. Rivlin (2009) argues that many firms were constrained to sell 50% of their shares to public sector. Public utilities and foreign trade were also nationalized. These policies were considered to be the most effective means to break with the colonial system and to establish a higher level of economic independence.

The main characteristic of the Nasserist state was the centralization of all economic and political decision-making. By redistributing wealth and property and through the subsidies for education, food

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and rent (the non-productive sector), Nasser helped to emerge a modern middle class in what had previously been a highly unfair socio-economic order.

2.2. Sadat period: partial liberalization and growth of rental income

Anwar Sadat took the lead of Egypt in 1970, after Nasser's death. Sadat's economic program, the *infitah* ("opening" or open door economic policy) gave an alternative perspective of economic development to that of Arab socialism. The *infitah* started the process of economic liberalization and opened the economy to foreign capital (mainly Western). To attract financial investment and technical expertise from abroad was the main purpose in order to integrate Egypt into the Western capitalist system. According to Rivlin (2009), between 1970 and 1980, the economy grew mostly as a result of "large increases in foreign exchange income from oil, the Suez canal, tourism revenues, and workers' remittances". Egypt also benefit from the oil boom in 1970 by exporting labour force to the Persian Gulf. This increased income from remittances and decreased pressure on Egypt's unemployment rate. Income from labour remittances, tourism, Suez Canal and foreign aid represented one-third of Egypt's foreign income in 1974, a figure that rose to 75% in 1980 (Hibbard, Layton, 2011).

The anticipated earnings of the *infitah*, however, never materialized. "In fact, the *infitah* was an opportunistic tactic intended to facilitate the inflow of Arab funds rather than a strategy for fundamental economic change. It was not, therefore, accompanied by reforms that would stimulate growth in the rest of the economy" (Rivlin 2009). Sadat's economic policies also led to a striking rise in real estate speculation and economic inequalities which led to popular unrest and strikes throughout the mid-1970s.

While trying to open Egyptian society to Western culture he simultaneously promoted a conservative form of Islam. Hibbard (2010) argued that the reason behind this policy was a "strategical shift towards Saudi Arabia" and a useful means to confine the political left. But all the Islamist groups abandoned him when he signed the Camp David Peace Accord with Israel in 1979. It is ironic that, after years of promoting Islam as an ideological counterweight to Nasserism, he was assassinated by an Islamic extremist at a military parade in 1981.

2.3. Mubarak: "the hesitant reformer"

The Mubarak period continued Sadat's liberalization of the economy, although few economic reforms with long-term effects were introduced in the 1980s. But change had become unavoidable by 1990s. The Gulf War in 1991 provided the opportunity to introduce radical economic reforms and to negotiate with the international community the reduction of Egypt's external debt burden. In 1991 Mubarak embraced International Monetary Fund (IMF) and internationally sponsored reforms aimed at attracting foreign direct investments (FDI).) The main effects of the 1991 program were the reduction of the budget deficit and the decrease in inflation. According to Rivlin (2009), the budget deficit decreased from 20% of the GDP in the fiscal year (FY) 1991 to 1.6% in 1995. But the neo-liberal economic policies advanced by the IMF based on reducing government social spending, privatization of sate-owned companies and other "structural adjustments" associated with the Washington Consensus led to hardships for the majority of Egyptian population.

During the last twenty centuries there have been many changes in economic policy and real incomes have increased, but there have been some worrying trends in terms of structural change. Between 1991 and 2000 the economic growth rate averaged 3.9% and between 2001- 2004 it decreased to 3.5%. The main answer for the slow way the economy responded was the weakness of the two main productive sectors: agriculture and industry. And this was because of the effects of import substitution, low

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technological improvements and weakness in education and training (although there were large national investments in education during this period).

In 2004, Mubarak installed a new technocratic government (led by Ahmed Nazif) to speed up economic reforms. The new government introduced a series of changes in economic policy (unification of the exchange rate system, reduction in import tariffs, reforms in the banking sector and the privatization of the most state-owned firms) and this helped produce a helpful period of economic growth. Between 2006 and 2010, Egypt's GDP grew from $107 billion to $217 billion and per capita income grew from $4679 to $5862 (Saikal , 2011). According to the same author, Egypt's external debt grew during the same period to about 20 to 30 percent of its GDP (around $ 33 billion in 2010) and imports exceeded exports by a large margin. From 2008, the global financial crisis also affected Egypt's economic perspectives: GDP growth rate dropped from 7% in 2008 to 5% in 2009, FDI decreased by 40%, unemployment reached an approximate 30% and inflation about 30%, although the official statistics show different figures.

Mubarak's rule and its inherent anomalies, including the Emergency Law (set out in the aftermath of Sadat's assassination), pervasive authoritarianism and extended secret police powers along with socio-economic stagnation, led to a peak in people's dissatisfaction with the regime and eventually created the context for the uprisings on January and February 2011 when Mubarak was forced to hand over power to the High Command of the Armed Forces to manage Egypt's transition to democracy.

3. EGYPT AFTER THE REVOLUTION: IDENTIFYING THE CONSTRAINTS

3.1. The economic sphere

Egypt faces many challenges in the post-Mubarak era. Although Egypt achieved massive economic growth during 1990 and 2009, averaging 4.5% annually (Kandeel, 2011), only a small minority benefited of most of the gains; overall development was not achieved. The socioeconomic and political deterioration that occurred during the last two decades led gradually towards an inevitable outburst. The economic difficulties have been aggravated by the recent revolts which have sent tourists away, discouraged investment and kept many people (especially young) from working. Also, the war in Libya forced a large number of Egyptian workers to come back home. This had a negative impact on remittances revenues, but also put a pressure on the domestic labour market.

During the period 2003-2008, Egypt registered high economic growth, which reached the peak of 7.2% in 2008 (International Monetary Fund, 2011), as well as a rapid increase in foreign direct investment and exports (Paciello, 2011). The country's economic boom from 2003-2008 was due to the boom in international oil market, from which most benefited the Gulf oil producing countries. This resulted in high remittances and a high level of foreign direct investments from the Gulf states. However, achieving strong economic growth and market oriented economic reforms were not enough to address Egypt's major socioeconomic problems. Most Egyptians did not benefit from rapid economic growth, especially those from the lower-middle class, who experienced a dramatic increase in hardship. The reason was the Mubarak regime's interest in serving and protecting its close associates and a small business elite, allowing them to strengthen their power, while excluding the vast majority of the Egyptian population.

The harsh economic conditions also worsened as a result of some other policies adopted during 1990-2010 and for which the society had been least prepared. For example, Egypt joined the World Trade Organization (WTO) in 1995. This required the completion of its trade-liberalization commitments

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until 2005. During this process, The Egyptian pound depreciated rapidly. According to Kandeel (2011), it lost more than half its value between 1990 and 2001; by 2008, inflation climbed up to 18% and stood at 12% in 2009. Unemployment and low incomes made millions of Egyptians vulnerable to the 2008 financial crisis. Furthermore, real wages in both public and private sector continued to decrease over the last ten years, meaning that, for many Egyptians wages were too low to sustain a decent standard of living. Rising prices over the last decade had a huge impact especially on middle and lower income Egyptians. Paciello (2011) argues that rising food prices was the main cause for rising poverty level in Egypt.

Despite some progress during the last ten years, Egypt suffers from a high fiscal deficit and large public debt ratios (Paciello, 2011). According to Dabrovski (2011), the fiscal deficit originates in large energy and food subsidies (6% of GDP in the fiscal year 2008/2009). Subsidies, despite their huge fiscal costs, distort production costs and consumption patterns, thus leading to misuse of public funds and corruption. Also, Dabrowski argues that the accelerated inflation of the second part of 2000s has "its roots in partial monetization of the fiscal deficit and in pegging the Egyptian pound to the weakening US dollar". Therefore, the high inflation rate has a negative impact on the living conditions of the most vulnerable socioeconomic groups.

The Egyptian economy has been affected by the global financial crisis which began in 2007-2008, but recent political and social events have exacerbated previous socioeconomic problems (Table 1). Particularly foreign investment, construction and tourism were hard-hit. About 210.000 tourists left Egypt only in January 2011, while on February tourist reservations were cancelled, amounting to losses of $ 825 million. The employment implications are likely to be dramatic, as only tourism sector employs more than 2.5 million Egyptians (Paciello, 2011). The dramatic events in Lybia sent home only in the first months of 2011 between 120.000 and 140.000 Egyptians, aggravating the labour market situations.

Table 1. Basic macroeconomic indicators

INDICATOR (%)	**2008**	**2009**	**2010**	**2011**
Real GDP Growth	7.2	4.7	5.1	1.6
Inflation	20.2	12	10.7	10.3
Unemployment	8.9	9.4	9.2	12.4
Current account balance	0.5	-2.3	-2.0	-2.3

Source: International Monetary Fund, World Economic Outlook 2011

Egypt is the most populous country in the region. Osman (2010) notes that Egypt represents a "major demographic boom…from the 1980s in which the population almost doubled from around 45 million to 80 million ". He also points out that most people are living in Cairo (around 15 million inhabitants), Alexandria and a "few other urban centres were living conditions were increasingly difficult". Their distinctive features, apart from their large number, are excessive financial hardship and spread poverty. According to the international development institutions, poverty has more than doubled since 1982. Egypt faces a high level of poverty (more than 20% of the population live below the national poverty line and at least many more people are clustered just above this line), income inequality (Gini

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coefficient over 0.3), poor education and high rates of illiteracy (over 40% among the female population), according to Dabrovski (2011). At the other pole of society stands the rich minority, the former regime's business magnates, who have monopolized economic power, privileges and opportunities. Between these two extremes, the middle class is in decline, helped by stagnant wages, deteriorating living conditions or unemployment.

The rapid population growth during the last decades created serious demographic changes. According to Saikal (2011), roughly 70% of Egyptians are under the age of 30. It is obvious that the high unemployment rate particularly affects youth. As AHDR (2010) demonstrates, youth (15-24) register higher rates compared to overall unemployment: 25.8% youth unemployment compared to 9.2% overall unemployment (Table 2). The global crisis further exacerbated labour market difficulties: Employment rate slowed down, lay-offs increased and overall unemployment started to rise, from 8.9% in 2008 to 9.4 in 2009. Moreover, unemployment is associated with high levels of educational attainment. In their research paper from 2008, Noland and Pack assert that "in Egypt, unemployment among college graduates is almost ten times that of people with primary educations and appears to be am urban phenomenon".

The question is why unemployment rate is higher among those more educated than among with less educational attainment? One possible explanation is given by Roland (2009, p. 102): the less educated either find job or they leave the labour market; those with higher skills are trying harder to find a job, but if they don't find, they remain in the market. The author also found that the reason why the better educated are not in demand is the structure of the economy (with agriculture the largest sector, industry and mining). The International Labour Organization (ILO 2011) asserted that "even if young people have jobs, working conditions are often very poor: low wages, little social protection, lack of secure contracts and career prospects and weak or lacking trade unions to give them a voice". To sum up, those who do find jobs, often work for low pay and in poor conditions. This combination of high unemployment rate among youth and low wages has forced many young Egyptians men not to get married. Roughly half of the Egyptian men between the ages of 25 and 29 are not married (Shehata, 2011).

Table 2. Snapshot of the Labour Market in Egypt, 2010

Population	81.121.077
Population growth rate	1.7%
Labor force participation	50%
Unemployment rate	9.2%
Youth unemployment rate	25,8%

Source: Authors' selection based on AHDR 2010 and World Bank data

One safety valve for the pressure on the labour market in Egypt was created by the temporary and permanent migration of workers to the oil-exporting Arab countries since 1970. This external employment provided much of the household income and substantial foreign exchange to finance imports. However, the reliability on this outlet is vulnerable to regional and global shocks. For example, the global financial crisis in 2008 which also affected Arab Gulf economies reduced workers' remittances by $1.5 billion (Kandeel, 2011). Layoffs in the Gulf countries raised unemployment in Egypt as many workers returned home and this contributed to the growth of poverty rate during the same period. The spread of the revolutionary fever in some other Arab countries could exacerbate the worries regarding the dependency on the regional economy as a safety valve.

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3.2. The political sphere

At the dawn of 2011, stifling social grievances determined millions of Egyptians to demonstrate in the streets demanding "isqat al nizam" (the fall of the regime). President Mubarak had accumulated sufficient public anger to spark a revolt. Over the course of eighteen days (on February 2011), an estimated 6 million Egyptians took to the streets, making the upheavals "the largest pro-democracy mobilization in Arab history" (Hamid 2011). This time, the Egyptians' demand for a pre-democratic transformation of their society was driven by themselves rather than external forces. Understanding the reasons behind this upheaval is essential in order to identify the most important changes that could occur down the road.

Before the revolution, Egypt had been ruled by the autocratic Mubarak and the National Democratic Party (NDP). Like many other dictators, he became self-centred, all-knowing and thinking of himself as the only person capable of leading Egypt. The defining feature of Egypt's government in the latest decades was the increase in size and rich of the security services. Hibbard and Layton (2011) estimated that the Ministry of Interior, which was the heart of Egypt's internal security apparatus, had around 1.5 million employees to guard the regime, monitor the opposition and remove the political dissents. Moreover, power was concentrated in the office of the President and the Parliament didn't have any meaningful decision making capability. The popular disdain had also been nurtured by Mubarak's alliance with the United States and the cooperation with Israel in several key issues, including security. It was these aspects that reinforced popular perception that the Mubarak regime had lost its moral legitimacy and it was considered more than a tool of the West.

Although Egyptian society has made some steps toward political transition (under the Supreme Council of the Armed Forces' control), the process may prove to be painful and arduous. But the result may be a new pluralist and participatory order. At present, it is worth emphasizing that Egypt mostly requires a change of system from an authoritarian past to a democratic future. Saikal (2011) asserts that the age of "rulers for life" that historically dominated Egypt has vanished. Its society is evolving under the growing influence of a new generation which is well-informed and capable of dismantling the kind of manipulation that made the people vulnerable to their rulers along the recent history. The transition has to deliver the perspective of a different political order from what the Egyptians have experienced since 1952.

4. EGYPT IN TRANSITION. PERSPECTIVES ON POLITICAL CHANGE

When Mubarak resigned, he left behind an Egypt that had no tradition of democracy and no necessary institutional and legal foundations, such as respect for the rule of law, independent judiciary, guarantees for constitutional rights or separation or powers. Therefore, his removal represented only the beginning of a much larger transition. Egyptian society must be reconstructed and the so-called "transition to democracy" actually involves multiple transitions occurring at the same time. Achieving the goals set out after the revolution of 2011 implies major changes in different areas. Hibbard and Layton (2011) identified three areas of transition necessary in order to accomplish the revolution's goals. The first area is represented by political transition, from dictatorship (autocratic form of government) to democracy. The second addresses the economic challenges and the third one lies in the realm of social change. As the economic transition will be discussed in the next section, we will address now only the issue of political transition.

One important area of reform lies in the realm of political transition. This means transition from an autocratic (dominated by the military and security forces and one-party rule) to a democratic (or at

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least more accountable) form of government. However, the task is not very easy as the pace of political change in Egypt will depend on the capacity of political and civil society forces to be active and take part in this process. Most of the existing political forces are weak, as there is a lack of experience and cohesion among these groups.

There is little doubt that Egyptian politics has changed fundamentally since Mubarak's fall. The Muslim Brotherhood (the Islamist group founded in 1928 to save Egyptian society from what it was considered to be "the depriving West experience") became the most powerful force in today Egyptian politics and the only opposition with mass popular support. On the other hand, youth movements, leftists and liberals, have been weak and disorganized. This imbalance of powers created fears of Islamist dominance, fears that are not necessarily unfounded (Hamid, 2011). Unlike the Brotherhood-with more than eighty years of political experience (Cook, 2009), liberals had trouble gaining partisans; they have been less effective at organizing long-term institution and party-building. They have focused on ending military tribunals, supporting women and minority rights and prosecuting former regime officials.

Another political force that must be taken into account is the military that established the Supreme Council of Armed Forces (SCAF). Despite the origin of the popular revolts, it was ultimately the military that forced Mubarak to step down, not the people. SCAF is now running the country until the presidential elections. Many observers noted that SCAF is "the main obstacle to genuine change" as the military retain control over the political process "(Hibbard, Layton, 2011) and they are committed to preserve the core elements of the security apparatus (including the Ministry of Interior and the related security agencies).

Successful political reform can be achieved by destructing the main institutions of the security state that have evolved since the Nasser era. Bringing transparency into government will be another step forward. Similarly, a new constitution is important for opening Egyptian politics and to provide the Parliament jurisdiction over what happens in the country. Creating a genuinely open environment for participation and discourse are needed in order to provide a successful democratic transition.

5. THE DIMENSIONS OF ECONOMIC REFORM

Egypt's economy requires a profound structural change in order to deal with the widespread corruption and to allow a strong private sector to emerge. Above all, it is necessary a deep restructuring of the country's political economy. But this depends on the political structures and how they will manage to proceed to political transition. The military, which have exercised widespread control over the Egyptian economy so far and they are now controlling politics, "will probably refrain from adopting the economic measures needed for a more transparent business sector" (Paciello, 2011). Moreover, elaborating clear economic programs requires time and the involvement of a broad spectrum of political and social forces, the latter proposing effective solutions to Egypt's socioeconomic problems.

In order to seriously address its main economic challenges, Egypt must rethink its economic reform agenda, targeting to diversify its productive structure, thus reducing its vulnerability to external shocks, opening to foreign trade, reforming its social welfare system, investing in education and training. Egypt's economic policy direction and its economic future will also be determined by the capacity of the Egyptian people to support further market and economic liberalization. It is known that no country in the world has eliminated all forms of protectionism, but Egypt should draw suitable policies adapted to its own specific conditions.

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Openness to foreign trade is one of the keys to rapid economic growth. Future economic growth in this country will depend on its capacity and ability to create and sell products and services abroad. The governments should also focus on creating a legal and institutional environment for strengthening the investment climate, making more room for private investment in services and network industries, improving access to finance and fostering regional and global integration in order to reap the benefits of globalization.

Another challenge is to modernize the educational system. Egypt has a crucial asset which is wasted: the human capacity. Investments and improvements are needed to adapt educational outputs and labour skills to the local market requirements so that the Egyptians can have equal chances to compete for employment. Through a more integrative educational system, through policies that address to a larger inclusion of children in schools people can be transformed into the most valuable resource of the country.

Finally, globalization is a fact of the present, and Egypt must face up to this reality and prepare its youth to become active participants at the global level. As argued before, this requires upgraded education systems, knowledge about the rest of the world, and involvement in whatever issues or problems it faces. Meeting future challenges implies vision and a coherent development strategy, as there is a critical need to establish a consensus on what it takes to succeed in the global economy.

6. CONCLUSIONS

The historic winds of change are sweeping over Egypt. This country faces multiple changes. It is imperative to rapidly generate employment in order to absorb the new labour force entrants. Structural reforms are imperative in order to address the need for higher growth and job creation. Without radical economic and social reforms, prospects of economic growth, job creation, reducing unemployment among women and the most educated, reducing inequalities and poverty will remain seriously constrained. The lack of capital is a barrier to job creation and to ensure sustainable employment attracting foreign direct investments (FDI) could be a solution. But this strategy is determined by the political and social stability and a predictable legal framework. This stability is also dependent on the level of poverty. Egypt is facing now one of the highest levels of social inequality in its history. As long as the governments of this country will not provide a reliable plan in order to reduce poverty, social inequities and the privileges of a minority, welfare is unlikely to occur.

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EVALUATING THE IMPACT OF THE INVESTMENT INCENTIVES: THE CASE OF EU MEMBER COUNTRIES[21]

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Abstract

During the past two decades a lot of countries have been supporting their economy through investment incentives. These incentives have many different forms. The study will uses the results of the evaluation of the current system of the investment incentives of the EU member countries, which is analysed in a contribution, called "Investment Incentives in the EU Countries" and quantifies it. Then the relationship between them and foreign direct investments of each EU member country is analysed.

Key words: *Investment Incentives, State Level, EU Countries, Foreign Direct Investment (FDI)*

INTRODUCTION

Foreign direct investments (FDI) are considered to be one of the important factors that can significantly influence the economy. They are supposed to have a lot of benefits for the host country, including knowledge and technology transfers, productivity spillovers, enhanced competition and labour force. Demekas et al. (2005) say that FDI flows are non-debt-creating, so they are a preferred method of financing external current account deficits.

Because of the recognized positive effect of the foreign direct investments a lot of countries have introduces systems of the investment incentives which are trying to attract FDI. The aim of the paper is to analyse the relation between current system of the investment incentives in the EU member countries and the income of FDI to those countries.

LITERATURE REVIEW

The relevant literature which focuses on the impact of the tax policy on the foreign direct investments has undergone quite big evolution. The first studies show that taxes have negligible effect (e.g. Brainard, 1997), the next studies still more often point out that low taxes the foreign direct investments attract (e.g. Hines, 1999). Demekas (2005) tells that the impact of the tax incentives are not so much convincing, but there still exists hints that transparent and simple tax system is for the FDI more attractive. Also OECD (2003) concludes that the tax incentives are for the support of the investments generally ineffective. This study points out that tax incentives such as tax holidays or tax exemptions can be contra productive.

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For the evaluation of the investment incentives is often used the neutrality concept[22]. This approach uses for example Musgrave (1959) or Harberger (1979). Another way how to analyse the investment incentives is the equiproportional impact of the user costs of different activities (e.g. Sunley, 1973; Sandmo, 1974). Auerbach (1980) critics both approaches. According him is from their substance ad hoc and is not directly connected to any calculation of the social optimum.

Blomström and Kokko (2003) show that investment incentives aimed exclusively on the foreign companies are generally not effective way how to increase the national welfare. The main reason is stronger theoretical motive to the financial support of incoming foreign direct investments (as a foreign technologies knowledge brought to the local industry) is not automatically part of the foreign direct investment. According them is this potential contribution realized only if the local companies have the ability and motivation to invest to the absorption of the foreign knowledge and technologies. To the support of the motivation of the foreign investment is also aid with knowledge and home investment.

Hubert and Pain (2001) are interested in the question whether and in which scope can national governments influence an investment decision-making during fiscal support and other forms of support. They conclude that in the most of the empirical literature is shown only little evidence about impact of the investment incentives on the income of the foreign direct investment (e.g. OECD, 1983; UNCTAD, 1998). Nevertheless still exists proves according them the fiscal stimulus can influence the choice of the locality within the country (e.g. Head et al, 1999). Their results show that important effect of the fiscal instruments of the host country on the localization of the investments within the EU still exists. The authors also point out that it is impossible to gain statistics for the whole value of the investment incentives. Some measures like a providing of the state land and buildings include the indirect assistance with only small immediate impact on the investment. Instead of the evaluation of the fiscal stimulus are used indirect measures such as total expenses to the support, development grants or effective corporate tax rate.

METHODOLOGY

The evaluation of the impact of the investment incentives of the EU member countries on the foreign direct investments is done in two ways. The first uses the Standard Deviation Method, the second way calculates the number of the investment incentives in the each country.

The investment incentives are divided into six sub-groups according the most commonly used incentives in the EU member countries. Those groups are: (1) labour market, (2) region, (3) R&D, (4) Small and Medium Enterprises (SME), (5) universal, and (6) environmental incentives (see Janickova, Baranova, 2012). The seventh group represents the whole system of the investment incentives.

Two methods are used for the evaluation of the current systems of the investment incentives in the EU member countries. First one uses the Standard Deviation Method (SDM) which is used by the International Institute for Management Development for the evaluation of the competitiveness. This method measures the relative difference between the investment incentives in each country. Therefore each country receives it´s relative position in the ranking. For the calculation, just incentives which are expressed as a percentage value (e.g. eligible costs, total budget) are used because these measures are

[22] The investment incentive is neutral when it has the same proportional effect on the internal rates of return of different investment projects.

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the most common in the EU member countries. In case that this percentage value is given as a range, then the minimal available value is used to all countries which fit the requirements.

First, for each sub-criterion and criterion, the average value is computed for the whole sample of economies which apply corresponding incentives. Then the standard deviation is calculated using following formula:

$$S = \sqrt{\frac{\sum(x_i - \bar{x})^2}{N}},$$

where S is the standard deviation, x_i are the values of particular incentives, $\bar{x}$ is the average value and N number of incentives.

Finally, standardized values (STD) are computed for each country and each kind of the investment incentives. The STD value for the incentive i is calculated as follows:

$$(STD\ value)_i = \frac{x_i - \bar{x}}{S}.$$

The second way how to analyse the impact of the investment incentives on the foreign direct investment is to evaluate the number of different incentives in each country and tools which are used within each incentive. The incentives which provide cumulative advantages (e.g. incentive aimed at R&D is bigger if the applying company is considered as SME) are calculated as one incentive. According final number of the incentives, the ranking of the countries is stated. The country with the highest number of the incentives is labelled as first.

From the methodological point of view, the analysis of the relationship between investment incentives and FDI is based on the correlation using the Spearman's ranking coefficient. Correlation analysis is one of the statistical methods used to determine the extent of, usually linear, dependence between two observed variables but does not, however, take their causal relationship into consideration. If we would like to search the causality, e.g. a regression analysis should be used. Nevertheless, the results of the correlation analysis enable us to state the hypotheses for further research. As it was stated above, the relationship between incentives and foreign direct investments is analysed in this case.

Spearman's correlation coefficient uses a ranking of observations according to the examined variables instead of their values. It allows us to avoid inaccuracies arising from a variety of scales, where the values of quantities may vary, or arising from the problem of quantification. The coefficient has the following form:

$$r_s = 1 - \frac{6.\sum_{i=1}^{n} d_i^2}{n(n^2-1)},$$

where d_i is the difference in the ranking of the incentives values x_i and y_i, n is the number of pairs (x_i, y_i) and r_s is the Spearman's correlation coefficient. The coefficient takes values from the interval of <-1, 1>, where $|\ r_s\ | = 1$ means complete dependence of the order, r_s belonging to the interval of (0, 1) means a similar sequence and r_s from (-1, 0) the inverse order of the characters x and y. $r_s = 0$ expresses non-correlation of characters (incentives) x and y. The coefficient is usually expressed in percentage, i.e. multiplied by the 100.

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Following Table 1 shows the ranking of selected EU countries according to the number of incentives applied and according to FDI – concretely their flows, stock and intensity. The last line includes the values of Spearman's coefficient (r_s). The flows of FDI are expressed as the ratio between the inward foreign direct investment and gross domestic product; it expresses the income accruing to direct investors during the period. The stock of the FDI denotes the value of the investment at the end of the period; it is expressed as a ratio between the inward FDI and GDP. FDI intensity as a % of GDP expresses average of inward and outward FDI flows divided by GDP. A higher index indicates higher new FDI during the period in relation to the size of the economy as measured by GDP. The data concerning FDI were gained from the Eurostat statistics.

Table 1: Ranking of the EU member countries – number of incentives

Country	FDI flows	FDI stock	FDI intensity	No. of incentives
Malta	14	11	4	1
France	18	14	6	2
Luxembourg	20	15	2	3
Germany	12	20	9	3
Latvia	1	9	20	5
Spain	17	12	17	6
Poland	11	13	8	7
Austria	7	7	7	8
Romania	15	10	10	8
Slovenia	9	19	21	8
Ireland	4	8	1	11
Finland	21	17	12	11
Italy	13	21	14	11
Portugal	8	6	15	11
Greece	2	22	16	11
Belgium	23	18	22	11
United Kingdom	10	5	5	17
Hungary	5	3	11	17
Cyprus	16	4	3	19
Czech Republic	6	1	13	19
Slovakia	22	2	18	19
Lithuania	19	16	19	19
Spearman's coefficient	0,0028	-0,3653	0,2501	

Source: Authors

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The results show that there is no correlation between number of incentives and FDI flows, negative correlation concerning FDI stock, but there can be the 25% correlation observed in case of FDI intensity. In other words, it seems that the number – or variety of incentives has not a big influence on FDI flows, negatively influences FDI stock, but may have a positive influence on FDI intensity.

In further analysis, the ranking of countries is stated separately according to the extent of incentives in different fields that were named above. Following tables show the results of the analysis including always just relevant countries, i.e. those applying the appropriate type of incentives.

Table 2 is dealing with the incentives concerning labour market issues. In this case, positive correlation was proved just between FDI flows and incentives with the rate of 19 %. FDI stock and intensity are correlated negatively with the incentives.

Table 2: Ranking of the EU member countries – labour market incentives

Country	FDI flows	FDI stock	FDI intensity	Labour market
Malta	8	5	2	1
Slovinsko	4	9	11	2
Německo	6	10	6	3
Maďarsko	1	2	8	4
Itálie	7	11	10	5
Polsko	5	6	5	6
ČR	3	1	9	7
Francie	10	7	4	8
Rumunsko	9	4	7	9
Lucembursko	11	8	1	10
Bulharsko	2	3	3	11
Spearman's coefficient	0,1909	-0,2909	-0,3727	

Source: Authors

In Table 3, incentives applied in specific regions or branches are analysed. The results show that they are positively correlated with FDI flow as well as with FDI stock while the correlation reaches 64 %, resp. 71 %. The correlation with FDI intensity is negative.

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Table 3: Ranking of the EU member countries – specific regions/branches incentives

Country	FDI flows	FDI stock	FDI intensity	Regions/branches
Polsko	3	4	3	1
ČR	2	1	5	2
Lotyšsko	1	2	8	3
Španělsko	6	3	7	4
Itálie	5	8	6	5
Francie	7	5	2	6
Lucembursko	8	6	1	7
Německo	4	7	4	8
Spearman's coefficient	0,6429	0,7143	-0,3810	

Source: Authors

Incentives focused on the research and development (R&D) and innovation are not positively correlated nor with FDI flows or stock nor FDI intensity, but in case of intensity the rate of negative correlation is the smallest one going to zero, so we can say there is no dependency relationship between this index and extent of R&D incentives.

Table 4: Ranking of the EU member countries – R&D incentives

Country	FDI flows	FDI stock	FDI intensity	R&D
Řecko	2	14	11	1
Litva	13	9	12	2
Rakousko	4	3	4	3
Německo	9	12	6	4
Rumunsko	11	6	7	5
Portugalsko	5	2	10	6
Francie	12	8	3	7
VB	7	1	2	8
Finsko	14	10	8	9
Itálie	10	13	9	10
Slovinsko	6	11	14	11
Irsko	3	4	1	12
Polsko	8	7	5	13
Lotyšsko	1	5	13	14
Spearman's coefficient	-0,1780	-0,1868	-0,0418	

Source: Authors

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Following three tables include analysis of dependency relationship between universal incentives, incentives designed for SMEs and protection of environment incentives. Those kinds of incentives are nevertheless not very often used in the EU countries, so the analysis may have less explanatory power due to small number of observations, which must be still bared in mind.

Table 5: Ranking of the EU member countries –universal incentives

Country	FDI flows	FDI stock	FDI intensity	Universal Inc.
Řecko	1	4	3	1
Rumunsko	3	1	2	2
Slovinsko	2	3	4	3
Lucembursko	4	2	1	4
Spearman's coefficient	0,8	-0,4	-0,4	

Source: Authors

Table 5 is dealing with universal incentives and shows that they are very strongly positively correlated (80 %) with FDI flows, while the correlation with FDI stock and intensity is negative.

Similarly, the incentives for SMEs are from 50 % positively correlated with FDI flows. But in this case, there is also a strong correlation with FDI stock. So far, the SME incentives together with incentives for specific regions or branches seem to influence FDI the most from all the observed types. The correlation with FDI intensity is negative again (see Table 6).

Table 6: Ranking of the EU member countries – SMEs incentives

Country	FDI flows	FDI stock	FDI intensity	SME
Malta	3	3	2	1
Portugalsko	2	1	5	2
Rakousko	1	2	4	3
Lucembursko	5	5	1	4
Francie	4	4	3	5
Spearman's coefficient	0,5	0,6	-0,2	

Source: Authors

Also in case of environmental incentives (see Table 7), there is a positive correlation with FDI flows and stock but not in the extent that was indicated in case of above mentioned types of incentives. The correlation makes 10 % for FDI flows and 40 % for FDI stock. The negative correlation with FDI intensity achieves 10 %.

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Table 7: Ranking of the EU member countries – environmental incentives

Country	FDI flows	FDI stock	FDI intensity	Environment
Francie	4	4	3	1
Kypr	3	1	2	2
Rakousko	1	2	4	3
Rumunsko	2	3	5	4
Lucembursko	5	5	1	5
Spearman's coefficient	0,1	0,4	-0,1	

Source: Authors

The last table is aimed on an overall extent of incentives applied in different EU countries, thus the number of observations is the biggest one and the results have the highest explanatory power. The sequence of the countries was stated also according the methodology described above.

According to this index, the extent of incentives is largest in Greece, Czech Republic, Malta, Poland or Hungary. On the other hand, the extent is smallest in Ireland, France, Luxembourg, Italy or Finland. In general, we can say that the extent of incentives in the form they are analysed in this paper is larger in so called new EU member states than in the old ones. The correlation coefficient then shows, that this extent is positively correlated with both FDI flows and stock, while the correlation is stronger in case of FDI flows (39 %). The correlation with FDI intensity remains negative with rate of 31 %.

Table 8: Ranking of the EU member countries – total incentives

Country	FDI flows	FDI stock	FDI intensity	Total Inc.
Řecko	2	20	16	1
ČR	5	1	12	2
Malta	14	9	3	3
Polsko	10	11	7	4
Maďarsko	4	2	10	5
Německo	11	17	8	6
Portugalsko	7	4	15	7
Litva	18	14	18	8
Lotyšsko	1	7	19	9
Španělsko	16	10	17	10
Rakousko	6	5	6	11
Itálie	12	18	13	12
Slovinsko	8	16	20	13

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Rumunsko	15	8	9	14
VB	9	3	4	15
Finsko	20	15	11	16
Itálie	13	19	14	17
Lucembursko	19	13	2	18
Francie	17	12	5	19
Irsko	3	6	1	20
Spearman's coefficient	0,3940	0,1263	-0,3113	

Source: Authors

The negative correlation between FDI intensity and almost all types of incentives may be ascribed to the construction of the index that includes not only inward but also outward FDI. It measures the intensity of investment integration within the international economy, which is probably higher in case of old EU member countries, while the sense of incentives in new EU member countries is rather to attract the FDI inflows.

CONCLUSION

On the basis of the correlation analysis, we can make a conclusion expressed in three main hypotheses that will be examined in further research. Those are:

(1) FDI flows and stock are more influenced by the extent of incentives than by their number (variety), especially in case of new EU member states.

(2) FDI intensity is more influenced by the number of incentives than by their extent, especially in case of old EU member states.

(3) Incentives for SMEs and for specific regions or branches influence FDI the most from observed incentives applied in the EU.

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Abstract

With increasing globalization and the liberalization of trade and capital flows investment incentives have become one of the important parts of the economic policy which significantly determines capital flows. In accordance with this evolution the member states of EU have developed their national systems of the investment incentives. The aim of the paper is to evaluate investment incentives in the EU member countries. The current system of investment incentives of these countries will be analysed according to their specification, target groups, extension and other important features.

Key words: *investment incentives, EU member countries*

1 INTRODUCTION

In the world where the growing number of the countries competes in attracting of multinational companies the investment incentives have became the global phenomenon. The attitude towards incoming foreign investments has significantly changed during the last decades. Many countries liberalized their politics in intention to attract foreign investors. These include fiscal incentives as the tax holidays or lower taxes for the incoming investors, financial incentives in the form of grants or preferential loans.

The aim of this paper is to analyse current system of the investment incentives in the EU member countries which are granted on the state level. The organization of the paper will be following. In the firs part will be introduced literature review which will summarize main findings of the available empirical literature. In the second part will be analysed system of the investment incentives available in the EU member countries with focus on the measures available at the state level. The regional support and support provided through EU programs will not be mentioned. The investment incentives will be divided according the main features and target areas. Also will be discussed the main instruments used in different countries for the support of the chosen area.

2 LITERATURE REVIEW

The importance of a investment as a part of products output and as the cause of the trade fluctuation have lead a lot of governments to introducing of lot of different types of incentives aimed at capital accumulation.

Blomström (2002) is saying that modern theory of foreign investments is connected with the Hymer (1960). His analysis is based on the observation that host companies have on the home markets advantage over foreign companies because of better knowledge of the home environment. One possibility how could foreign enterprises compete with the home is to give them some advantage which will compensate disadvantage of the strange environment. Blomström et al. (2000) also shows

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that investment incentives play only limited role when the foreign investment is considered. Other important factors are e.g. market characteristics, relative production costs or an availability of sources.

Blömstrom and Kokko (2003) state that some efforts to attract foreign capital are probably motivated by temporary macroeconomic problems like low rate of growth or growing unemployment. They also show that another can be caused by basic need of foreign investment. According these authors it is show, that globalization and regionalisation of the international economy makes the investment incentives more interesting a more important for the host countries. Trade liberalization goes to the growth of market integration and lowers the importance of market size as a determinant of investment localization. At the same time the countries are loosing lot of their former instruments (as an exchange rate) traditionally used for the support of the local competitiveness, rate of employment and wealth.

The range of the investment incentives has been in the centre of the focus of the economic research for a lot of years (e.g. King, 1977). House and Shapiro (2006) try to analyse impact of one part of the investment incentives – the importance of the bonus depreciation. They show that bonus depreciation appears to have a strong effect on the composition of investment, but the impact on the aggregate employment and output is only modest. The same confirms Billington (1999) who shows that within companies investment decision belongs the market size, unemployment, rate of import of the host country and the political variables (corporate tax rate, interest rate).

Another stream of relevant literature studies the role of incentives as a way how to lower territorial disparities. This was studied for example by Faini and Schiantarelli (1985). In spite of this literature there is no general consensus about efficiency of the investment incentives. During their evaluation is really important but also difficult to consider what should happened if they were not applied. Bronzini and Blasico (2006) are saying that the biggest problem is to create right control group because supported and not supported companies can be considered as a random choice.

3 EU INVESTMENT INCENTIVES

The EU member countries are subject of the EU legislation which is saying how should be a state aid allocated to the business. These rules are related to a state intervention, allowable costs and overall aid provided by the all EU member countries without exceptions. Nevertheless in this quite broad framework the member states can freely adopt measures which will be the most suitable for their economic development. With respect to this framework a lot of countries try to adopt such measures which will reflect the needs of the investors. This aid is different with respect to a type of the investment project (innovative, training etc.), its localization (chosen regions etc.), or to the size of the company which is introducing the project (large, SME). This aid should be provided by the national government, local authorities or by different government agencies. The most often form of the aid are grants, tax exemptions or tax credits. In the next part will be described the most common forms of the investment incentives which are used in the EU member countries on the state level.

- **Labour market**

A lot of the EU member countries provide investment incentives which are aimed at a labour market. In this part will be described measures used for the support of the labour market in the whole country. The countries which use this form of the investment incentives are shown in Table 1.

Some countries provide support for the creation of new working places. Here belong the *Czech Republic*, which gives fixed amount up to 50 000 CZK. The similar measure is used in the *Poland* where it has a form of grants up to 3 900 € per one working place, *Romania* government proposes up

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to 200 000 € per enterprise and per 3 years. *Slovenia* offers to the companies co-financing of the project (up to 12 million €) if it creates required number of the working places. The company can also lower its tax base up to 70 % costs of the gross wages if employs person who belongs to the disadvantaged group. *Hungary* has another type of instrument, if a company creates at least 100 working places and fits other conditions, could be subject of tax exemption up to 80 %. *France* provides support by the lowering of the social security contributions paid by the employer. Small and medium enterprises and enterprises up to 500 employees can also receive lower-rated loans if it can help to preserve working places in the chosen regions. *Bulgaria* support employing of young people and people from disabled groups by the paying the wages and social contributions up to one year, in the chosen region is generally paid lower social security contribution.

The number of countries has focused their attention to the training and retraining of employees. The *French* government has developed a variety of instruments to offer stimulus to train employees. The government support the training by the providing of training and tax allowances for the small and medium enterprises (SME) up to 40 lessons, partly pay the cost of the training (up to 80 %) or the companies can receive amount between 5 and 8 € for the training of expectant employee. The improving of the qualification is supported also in the *Germany* in the form of the cost compensation, *Romania* provides up to 80 % of eligible costs. The *Hungarian* government offers the similar incentive for the education in the form of compensation at least 25 % of costs, but there is a condition that at leas 3/5 of the lessons are during the working hours. The same advantage is offered in the *Italy*, where the company which hires and train new employee can receive at most 50 % of wage of this person up to six months. This support can be higher if it is in the relation to the disadvantaged group. The similar incentive is offered in the *Luxembourg*. In this country can the enterpriser receive financial aid when he hires person who is classified as a disadvantaged. In this situation the company will receive the social contributions for at least two years. Enterprises in the *Malta* can receive state help in the form of tax exemption up to 80 % of the eligible costs if their employees receive certificates and qualification required in the industry. The same situation is in the *Czech Republic* where the enterprise can receive at most 25 % of training costs but only in districts with unemployment that is at least 50% higher than the national average.

Germany offers quite different incentives which are focused at lowering costs of the newly established enterprises. These can receive support for hiring (places for the interview, advertisement, pre-selection of the candidates etc.) and training of new employees, contributions to the wages and initial training in the job. These incentives can be obtained by all types of enterprises.

- **Special regions and branches**

Other group of investment incentives are measures oriented at the chosen regions which are usually problematic because of unemployment or structural problems. The countries which have introduced the investment incentives aimed at the chosen regions are shown in Table 1. This sort of incentives is used in the *France* for the selected regions but there are some sensitive sectors (e.g. steal production, synthetic fibre) which are not the subject of the incentives. The localization of the investment is deciding for the total sum of support. The most often measures are subsidies, repayable advances, exceptions from the social contribution. In these regions is also available support which is oriented on the labour market. Another possibility is to reach at free-rate loan, using of this instrument is restricted to the transferring business to France, diversification or expansion of production, improvement of a production process and should be connected with the take-over of the company or creation of new company. In the *Italy* are the selected industrial areas supported by the non-repayable subsidies (up to 40 % of the eligible costs) and loan-rated loans (up to 30 % of the eligible costs), which are accessible

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for the five years. Similar system is in the *Slovakia* where is supported industry, particularly projects with high added value and making new working places, and share centres of services and tourism. *Spain* also supports specific industry which can be perceived as a priority for the country growth and has an important impact on the whole economy. In specific regions are available incentives which are focused on the achievement of a balanced state between the regions. Investors can reach at non-repayable subsidies or at lower social contributions. Supported areas are especially tourism, production of renewable energy, audio visual and cultural industry. Government in the *Luxembourg* supports the chosen branches too. Here belongs finance or high technology.

Quite different system is established in the *Greece* where are supported young enterprisers (up to 40 years), they can reach at subsidy of total amount 1 million € for the first five years.

Germany has a special program which was created for the East Germany. There are available cash subsidies and tax credits, but the instruments have to be used for the manufacturing industry and for the chosen services. The amount of the investment diversified according to the size of the company. The subsidy is lowering during the time. *Poland* provides support for the new investment in the chosen industry (automotive sector, electronic, aviation, biotechnology, modern services) in the form of grant in the total amount up to 10,5 % of eligible costs.

In Latvia and Poland are created special economic zones which provide favourable conditions for the investment. In the *Latvia* are four special economic zones and one special economic zone. In this areas are available 80 % tax credit for the real estate and for personal taxation, zero value added tax at the most products and services and a tax exemption for the excises duties for the oil products. In the Poland are special economic zones which can provide total tax exemptions for the corporate taxes and personal taxes for the 10 years and for the rest of the time the tax exemption is 50 %. *Poland* offers support to all investments bigger than 50 million € in the chosen areas of the industry – e.g. biotechnology, telecommunication, aviation, automotive industry. The amount of the incentive is connected to the amount of the investment and number of the new working places.

- **Research and Development**

The most countries have developed framework of incentives which are focused on the research and development (R&D) and innovation. The governments which have adopted the investment incentives aimed at R&D are summarized in Table 1.

France provides tax credits to the year costs, the same incentive is in the *Ireland*, but here enterprises can also obtain tax deductions up to 12,5 % for three years and grants for the feasibility study. Next measure is aimed at the multinational corporations; it has a form of incentives for the patents and suitable type of companies can lower corporate tax at profits form the R&D. Grants are available also in the *Cyprus* up to the amount of 120 000 euro. *Lithuania* allows deducting costs of the R&D from the taxable income at most for the three times. Taxable income can be also lowered to the 50 % when the company has the R&D project.

Finland has developed system of grants and loans which are available if the program will lead to the international competitiveness of the products and services. The total available amount of the loans is between 25 – 65 % of the eligible costs; the loans could cover up to 75 % of the total required amount to the project. Also *Great Britain* propose tax credits, tax allowances and grants, the companies which are interested in the R&D can be also subject of lowered corporate taxes from the R&D. Tax allowances up to 20 % are offered in the *Slovenia*, this number can be higher in the chosen areas. Similar framework is also in the *Austria*, the investors can find incentives in the form of the low-rated loans, grants and subsidies. According *Germany* government incentives to the R&D are one of the

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most important in the country. Companies can uses measures such as grants, low-rated loans or special programs for cooperation. Grants are also available in the *Romania*; their total amount is at least 30 % of the investment eligible expenditures.

Italy support highly innovative programs in the strategic branches as are nanotechnologies, biotechnologies etc. *Latvia* has analogous framework which prefers projects with high added value, support of a property rights and introducing of new products and technologies. *Greece* has created measures in the form of leasing up to 80 % of the project value. *Slovakia* is focusing on the technological centres which are interested in the research and development, *Portugal* is trying to encourage the enterprises to better coordination between them. Highly-developed programs for the R&D support can be found in the *Malta,* where is wide range of programs supporting the R&D tax credits are given proportionally to the size of the company. Companies can receive additional bonuses which are available to those who cooperate with other partners or a research institution. Another possibility is during licensing of patents. *Poland* provides investment grant up to 10,5 % of eligible costs for the new investment. *Spain* is trying to promote a highly competitive corporate fabric, create a favourable environment for investments in R&D or develop an integral policy for science. The Czech Republic supports manufacturing sector. When the applicant fulfils requirements then can receive tax incentive in the form of (partial) tax relief. If a new company is established for the investment project, the new company is eligible for corporate tax relief for up to five years. If the investment takes the form of an expansion project within an existing Czech company, the company is eligible for partial tax relief for up to five years.

- **Universal incentives**

The next group consists of countries which provide investment incentives for the whole country. The list of countries with this type of aid is in the Table 1.

Here belongs *Slovenia* which is trying to lower initial costs of the investment which will lead to creation of the new working places and will positively influence a transfer of knowledge and technologies, support balanced growth of the regions and will boost cooperation between host and foreign countries. As an instrument are used depreciation allowances at the buildings and equipment. The companies can also lower their tax base by transfer losses ahead for the seven years. The investing to the equipment, factories and intangible actives will lower tax base up to 30 %. *Greece* has incentives for the big investment plans. A portion of a subsidy can not be bigger than 60 % of the total help. The support is oriented at integrated multi-annual business plans, provides them technological, administrative and organization support. Another priority is a partnership and networking of configurations or clusters. Investors whose projects are oriented at local needs or usage of local competitiveness advantages can reach at support of the leasing or at subsidies. *Romania* provides state aid which tries to ensure sustainable economic development. Depending on total amount of the investment the enterprisers can reach at leas 50 % of the eligible expenses. Projects bigger that 100 million € should have at least 25 % of eligible expenses. *Poland* offers support to all investments bigger than 50 million € in the chosen branches of the industry – e.g. biotechnology, telecommunication, aviation, automotive industry. The amount of the incentive is connected to the amount of the investment and number of the new working places.

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- **Small and Medium enterprises**

Many countries have introduced the system of the investment incentives which are trying to promote Small and Medium enterprisers (SME)[23]. The list of countries which provide this form of aid is in the Table 1.

Luxembourg supports small and medium enterprises which are interested in a craft production and trade. The companies can receive at least 10 % of eligible costs; other instruments cover grants or interest reliefs. The enterprisers can also obtain financial help if they establish new company or if they take-over another company, the aid is available at least 20 % of eligible costs. For the *French* government is the assistance to SME important in the whole country. They provide help with buying technological equipment. SME in the *Finland* can obtain venture capital and export guarantees.

Malta provides lot of support forms in the process of development and diversification of their activities, penetration to the new markets, increasing their competitiveness, creation of new products, services or strengthens their market share. SME can be subject of co-financing in their first participation on the international business trade fairs and of subcontracting external experts in the relationship to the new project. The maximum available support is 50 % of the price. The companies can receive aid in the form of tax credits if the invest in diversification and creation of the new product and simultaneously create new working places. If the SME invest to their competitiveness within creation of the new relationship with foreign partners, access to the centres of excellence, knowledge transfers, or cooperation in the R&D and innovative projects they can receive tax credits, which are calculated according value of capital investment or according value of wages for 24 months including new working places which were created due to investment project. *Spain* supports SME only in the chosen branches (e.g. industry including agrofood, tourism, services). These subjects can receive advantages in financing their project. Between available tools belong considering second-hand asset as a suitable for financing, maturity of loans is lengthen up to 20 years, the definition of the customers under different lines of financing is extended. Other instruments are financing of innovative enterprisers or support of corporate growth. Also the companies in the *Austria* can receive low-rate loans, guarantees or state assistance if the introduces innovative technologies or measures for the quality improvement. Similar system is in the *Portugal*. This country has introduced the incentive system of qualification and internalisation of SME. During this scheme supports competitiveness of SME during increasing of the productivity, flexibility, responsibility and active presence in the global markets. SME can receive financial benefits in the form of covering of the costs in the international exhibitions, cost needed to receive research and development and innovative projects or costs necessary for gaining of research services, diagnoses and audits at energy and environment. Support is available for 2 years; basic rate of support is 45 % of eligible costs. The companies can also receive bonuses (rate 75 %) if they take part in the international exhibitions, 50 % for costs of micro and small companies if they enter to collective effective strategy and up to 80 % eligible cost for training and hiring of technical workers.

[23] A **medium-sized** enterprise is defined as an enterprise which employs fewer than 250 persons and whose annual turnover does not exceed EUR 50 million or whose annual balance-sheet total does not exceed EUR 43 million. A **small enterprise** is defined as an enterprise which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 10 million.

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- **Others**

Some countries have developed system of the investment incentives which are focusing on the other areas which belongs to the priorities. Those countries are shown in the Table 1.

Some countries provide investment incentives focused on protection of the *environment*. To this group belong Austria, Cyprus, Luxembourg, France and Romania. *French* authorities may award grants for investments which seek to exceed the legally required environment standards. The country support enterprises in this field of activity by the covering up to 30 % of investments (this rate is higher for SMEs). Higher rates are available for the chosen types of investments – energy savings, combined heat and electricity generation and investment in renewable energy. SME can also obtain financial help if their project is aimed at reaching EU standards. Companies can also receive decision-making aid in the form of pre-diagnostic, diagnostic and project studies. In the *Cyprus* enterprisers can receive financial incentives if they will invest to the energy saving area and to the support of the renewable sources of the energy. Similar incentives are available in the *Austria*, where the support is oriented to the environmental protection and reaching higher then EU standards. In this case the company can reach 50 % of costs related to the additional costs. If the project is focused only at reaching EU standards the support can be 15 %. If the company will invest to the renewable sources and energy-saving measures then can reach 60 % of additional costs. Also *Luxembourg* has a system of investment incentives for reaching EU (up to 15 % of eligible cost) and higher (up to 30 % of eligible costs) standards. Country also provides external consulting services, aid for the investments in energy saving technologies and investments to the production of electricity from renewable energy sources. *Romania* developed state aid scheme for reduction of emissions, which concerns activities of electric and thermal energy production and consumption and state aid for the promotion of electricity produced form renewable energy sources. Suitable companies can receive 40 % of total eligible expenditures. *Spain* has set up certain specific aid program for the renewable energy industry in compliance with its objectives to foster the use of renewable energies and improve energy efficiency. In this area was developed a lot of specified programs which have their own budged aimed at support of the environment.

In a reaction to the current economic crisis was in the *France* developed special tax incentives. Their aim is to support take-overs of the companies in the problems. Program is focused on the industrial companies; some activities are excluded (e.g. financial sale). The chosen companies don´t have to pay taxes from the profit for the first year but at most 200 000 € per two years, but in some cases it could be higher. Newly established enterprises are not a subject of real estate taxation.

The *Czech Republic* provides site support. It has a form of preferential transfers of land or land with infrastructure owned by the state or municipalities; this aid is depending on landowner's agreement with such preferential transfer.

4 CONCLUSION

In attempting to attract enterprisers to invest in a certain location a lot of governments provide different forms of incentives. Those schemes of a support are aimed at stimulating private sector interests in specified types of expenditures, stimulating activity in the selected sectors or attracting it to the selected regions. Most countries provide information on investment incentives through agencies that have responsibility in this area. However completeness of provided information is in many cases insufficient and if the potential investors require more information they have to contact the liaison

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officer. Also conditions for the adoption subsidies and grants are different; this fact depends on the speed and simplicity of the administrative apparatus, which in many cases too demanding.

Table 1: The main types of the investment incentives.

Labour market	Regions, branch	R&D	Universal	SME	Others
Czech Republic	Czech Republic	Austria	Greece	Austria	*environment*
Bulgaria	France	Cyprus	Poland	Luxembourg	Austria
France	Greece	Finland	Romania	Finland	Cyprus
Germany	Italy	France	Slovenia	France	Luxembourg
Hungary	Latvia	Great Britain		Malta	France
Italy	Luxembourg	Germany		Portugal	Romania
Luxembourg	Poland	Greece		Spain	Spain
Malta	Slovakia	Ireland			
Poland	Spain	Italy			*crisis*
Romania		Latvia			France
Slovenia		Lithuania			
		Malta			*site support*
		Poland			Czech Republic
		Portugal			
		Romania			
		Slovakia			
		Slovenia			
		Spain			

Source: Authors.

A lot of EU member countries offer both new and existing investors investment incentives and business support through several schemes. In those countries is required compatibility of the investment incentives regulation with EU legislation but as a framework is quite wide the individual countries have a lot of possibilities how to support investment activity in their country.

In the nearly all EU member countries are the investment incentives schemes aimed at the same target groups. The most countries support research and development and labour market, between other targeted groups belongs small and medium enterprisers or regional aid. In a lot of countries is this areas interconnected, e.g. investment incentives aimed at specific branches support employment, innovation activity, R&D or SME, and if the applicant fulfil more requirements then will receive more extensive aid.

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In the field of R&D a lot of countries distinguish between fundamental, applied and experimental research. As a fundamental research is often perceived experimental and theoretical research aimed at gaining of a new knowledge, applied research presents research aimed at improvement of the existing products and services. Experimental research is focused on the production plans, prototypes and concepts. Those forms of research are commonly supported by different rates. The most common form of support is tax credits and tax allowances which are aimed at lowering of the costs expended on the preferred investment. Other available measures include grants or co-financing of the project.

Other important part of the incentives is those focused on the labour market. The most commonly used support is aimed at training and retraining of employees; it has a form of partial cost compensation. The government also encourage creation of the new working places especially in the areas which suffer at high unemployment or structural problems. Then the suitable companies the most commonly receive funds for paid wages or social security contributions. Between next important areas belongs support of SME and of the chosen regions and branches. Many countries have selected which are considered as a highly important for the countries economic growth (e.g. nanotechnologies, electronic, pharmacy) and support them. In the last years increased interest in the environment and its protection. Growing number of countries support activities which lead towards reaching higher environmental standards, also can be recognized effort to higher usage of renewable energy sources.

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TRADE SHOW INDUSTRY AND ITS FUTURE TRENDS IN LATVIA

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Abstract

The aim of the research is to analyze the trade show industry and its future trends in Latvia. A lot of things all over the world have changed due to the global economic crisis, and the trade show industry is not the exception. International trade shows has become an integral part of corporate advertising budget and project planning. Around the world they have been recognized as a successful product promotion and sales promotion tool. Trade shows serve as a mirror for technical development, information exchange, the price ranges, the seller and a buyer meeting place. This sector's contribution to economy is several billion dollars per year.

The research concludes that the significance of trade shows is expected to grow in the automotive, IT and electronics industries as well as in the areas of environmental protection and healthcare. The social media and new technologies will be more and more involved in the trade show organizing and exhibiting at trade shows.

Key words: *trade shows, trade show industry, future trends*

1. INTRODUCTION

This paper aims to explore the trends that will shape the nearest future of trade shows in Latvia. Development of trade show industry in the world is obvious; the dynamic growth of the exhibition halls throughout the world demonstrates it. This sector's contribution to economy is several billion dollars per year, and the state with the proper legal framework and business support can contribute to the development of this field. Trade show industry promotes investment inflow in the country, resulting in a direct form of portfolio investments as well the region benefits from the trade show grounds. Latvian trade show business is currently still in its initial development phase, although some of the trade shows are a serious announces to the international market. Lack of money, over-intensification of competition is now the problem to be solved in terms of Latvian trade show market.

This paper is based on existing literature, different researches, scientific publications and other materials. The research is mainly based on the monographic descriptive method and methods of analysis and synthesis. The research paper provides a list of important factors that most likely will influence the trade show industry in the nearest future.

Trade shows have been recognized as a successful product and sales promotion tool all over the world for many centuries. They serve as a mirror for technical development, information exchange, the price ranges, the seller and a buyer meeting place. Trade show or exhibition is unique in the aspect that in short period of time companies are able to get a lot of new contacts, meet and speak to their existing and potential customers as well as introduce new products to large group of interesents. The trade show is an important tool in marketing strategy and company participation in trade shows can be very effective (Kelle, 2011).

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2. TRADE SHOW INDUSTRY KEY FACTORS IN LATVIA

Trade show organization is not the most common type of business in Latvia and there are just few trade show organizers. The industries in Latvia are ranked according to NACE codes, which identify key sectors and subsectors. According to existing provisions of Latvian branch codes, exhibitions or trade shows, are classified under the sector "the administrative and support service activities" and below under the sub-sector – "administrative offices and other business support activities" which according to NACE codes are further subdivided: code 82.3 meetings and trade show services.

"Administrative offices and other business support activities" section includes various daily office administrative services, as well as a permanent regular business support for others on a fee or contract basis. This section also includes all support services, which are usually provided by companies and are not classified elsewhere. (CSB, 2011).

The sector of "meetings and trade shows services" includes also other similar events, for example, conferences, seminars, business meetings and other. That is the reason why the authors believe that current industry classification makes it difficult to carry out the analysis only of the trade show organization and trade show services.

Latvian trade show industry begins its roots in more recent history. In 1895 the Jelgava Agricultural Society organized the first agriculture, handicrafts and industrial products trade show. One of the biggest agricultural trade shows were held in 1903 in Valmiera by Kauguri Agricultural Society. It had 14 thousand visitors. Different small trade shows were organized by other agricultural associations (Kelle, 2011).

The first international trade show in Riga was held in 1901. Agricultural and industrial international trade shows in Riga were regularly organized since 1921. Trade shows as a type of business is relatively new in the Latvian economy, which began in 1992 when Ministry of Economy and Latvian Chamber of Commerce and Industry (LCCI) jointly organized the trade show "Choose Latvian product." The trade show "Choose Latvian product" was held with interruptions until 2001. This trade show's success demonstrated the business demand and the importance of both business and consumers, also significant potential for industry in general. Afterwards, in 1993, Gundars Petersons founded company "Creatio", which in a relatively short period of time carried out a number of significant projects. Since 1996, when the Olympic Skonto Hall and Kipsala Exhibition Centre was build, a power struggle began between two of these complex manager firms, namely, "BT1" and "Exhibition Company Prima". By 2008 the following companies in Latvia were working in the trade show organizing business - SIA "BT 1" – organizing events in Kipsala Exhibition Centre, "Exhibition Company Prima" – working in Skonto Hall, "AML"- making different agricultural trade shows in Ramava complex and "Latexpo", who organized trade shows in various rented halls and complexes.

In 2009 when economic conditions changed a lot of things throughout the world, changes appeared also in trade show industry in Latvia. "Exhibition Company Prima" ceased operation, but appeared in a new company - "EXPO PRIMA", which arranged only a few projects and currently is not active anymore. "KELLE EXPO" introduced themselves in the market with a project "Made in Latvia" - they came in with new ideas and new attitudes and at the time when all, so to speak, on the road had to press the crisis.

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Exhibition company name	Organized events in one year	The most popular trade shows
BT 1	26	House, House II, Riga Food, Riga Agro
KELLE EXPO	2	Made in Latvia, Made in Baltics
LATEXPO (now FEHU)	2	Beauty Expo, Salon de luxe
A.M.L.	2	Spring, Autumn
Total:	**32**	

Table 1. The average number of the trade shows organized during one year in Latvia

Table 1 shows the average number of trade shows in Latvia, which are held during one year. BT1 events in Kipsala Exhibition Centre often are organized as combined events, for example, at the same time in the same exhibition halls are held trade shows Recreation and Sport, Motorcycle and Baltic Boat Show – 3 trade shows at once. If comparing this to the other Baltic States - Lithuania organizes approximately 20 trade shows a year and Estonia about 14 trade shows a year.

A solid idea of why companies are taking part in trade shows and how much they acquire, can be obtained only by analyzing the company's achievements and benefits from the trade shows. There are no organizations in Latvia competent in collecting and analyzing data on the trade shows' impact on the economy. Latvian trade show business is currently still in its initial development stage, although some trade shows make serious announces in the international market. Lack of money and over-intensification of competition at the moment are the problems to be solved in terms of Latvian trade show industry, but trade show industry in Latvia is able to live and compete.

The main goal of the trade shows has always been the result of it, which is the positive rating from the visitor or customer. One of the very important values is an increase in turnover - here again appears a problem, which needs a solution: every company has its own product promotion strategy for the market, which they try to protect and withhold from their customers and competitors – that means that the exponent not always wants to disclose the information about his company's increased turnover. While the exhibition company needs and is very interested in obtaining such data for more complete and detailed analysis of the trade show and its success. Of course the trade show organizer can see the interest increasing or decreasing when preparing the next trade show of the same sector or field. Many exhibition companies and also exhibitors are practicing surveys, but it is only the first subjective evaluation. The results of the trade show can be specified only after some time. In this area Latvian exhibition companies are still ample opportunities to develop.

The prices for the exhibitors to participate in the trade show in Latvia varies from 35 EUR for 1 m2 to 119 EUR for 1 m2 plus also the exhibitor in most trade shows need to pay participation fee. In the world prices are relatively higher than in Latvia. Also, participation fee is high, especially in Estonia. Table 2 presents the prices for participation in the trade show in various trade shows/exhibitions in different countries.

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Country	Trade show and sector	Organizer	Price for 1m2, EUR	Participation fee, EUR
Latvia	House I, bulding	BT1	from 64.00	104.00
	RIGA FOOD, food industry	BT1	from 69.00	99.00
	MADE IN LATVIA, multibranch	KELLE EXPO	from 41.00	95.00
	MADE IN BALTICS, multibranch	KELLE EXPO	from 43.00	108.00
Lithuania	RESTA, building	Litexpo	from 111.00	145.00
	BALDAI, furniture	Litexpo	from 57.92	110.05
	ALT 11, automotive industry	Litexpo	from 46.33	110.45
Estonia	EstBuild, būvniecība	Estonian Fairs	from 57.00	351.00
	Tallinn FoodFest, pārtika	Profexpo	from 61.00	224.00
Germany	MUZIKMESSE	Messe Frankfurt	from 181.00	X
Russia	МЯКИНИНСКАЯ ЯРМАРКА, multibranch	Mir-Expo	from 120.58	X
	InnotechExpo, innovations and technologies	InnotechExpo	from 173.73	254.00
France	International Luxury Travel Market	ILTM CANNES	from 1050.00	520.00
China	BM EXPO CHINA, building	Beijing China International Exhibition Center (CIEC)	from 213.00	X

Table 2. Prices for the participation in various trade shows/exhibitions in different countries

Lately, the popularity of trade shows in Latvia has fallen, a lot of companies exhibits only every second year or just for the image marketing. The authors believe that trade show industry will change one dominant exhibition organizer will remain in the market. The authors also preclude the possibility of appearing a foreign investor, who builds a new hall, establishing a large company and in such way crowds out Latvian trade show organizers.

3. THE FUTURE TRENDS OF THE TRADE SHOW INDUSTRY IN LATVIA

Trade show industry is directly dependent on the clients, economic environment, financial stability, relevant legislation. It seems logical chain the economic situation is better the trade show industry gains more. The people or companies have more funds the more they will spend. This quasi clear chain has not only emotional grounds but also statistical grounds. Such statement has to be grounded on the assessment of concrete indicators: firstly, trade show rented space; secondly, exhibitor and visitor tendencies. Real economic life proves that the market and competition is the main mechanism for the development of modern economies. Market functioning efficiency is higher, the more active the competition is and the better the conditions of its expression. To be competitive, every company wants to have continued success, the philosophy and operation must be innovative. According to the

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economic experts, the region of Southern and Eastern Europe with Croatia, Albania, Bosnia and Herzegovina, Bulgaria, Romania, Serbia, Montenegro and Macedonia is besides China, India, Brazil and Russia the most successful emerging market worldwide. The positive impact of the following elements is directly connected with the results of the exhibition industry, for example: sustainability of the economy, market liberalization and competition framework, privatization, development of the entrepreneurship and foreign investments, socio-ecological development level, increase of the standard of living, and economic wealth, the countries in Central and South East Europe are target of many companies from Western Europe in terms of cooperation, investments and trade, especially Germany, Italy and Austria, success of the political stabilization process, start of the several reforms in the process of joining or approaching to EU. (CEFA, 2009)

Kirchgeorg, Jung and Klante made research on future of trade shows. The analysis produced five factor groups as follows: international shift in demand and supply; communication patterns in business relationships, especially the importance of face-to-face communication; positioning strategies of trade show organisers; trade show efficiency and time pressures on exhibitors and visitors; and barriers to mobility and crises. A company has to consider both the macro trends in economics, politics, law, technology, demographics, society and culture, which are out of its control but influence the decision making, and the activities of diverse persons and organisations present in their market with whom they interact, i.e. competitors, customers, partners and suppliers. This network has recently been complemented by special regard for such groups as local communities, non-profit organisations, universities or environmental activity groups due to the growing awareness of their role in creating sustainability and influencing business.

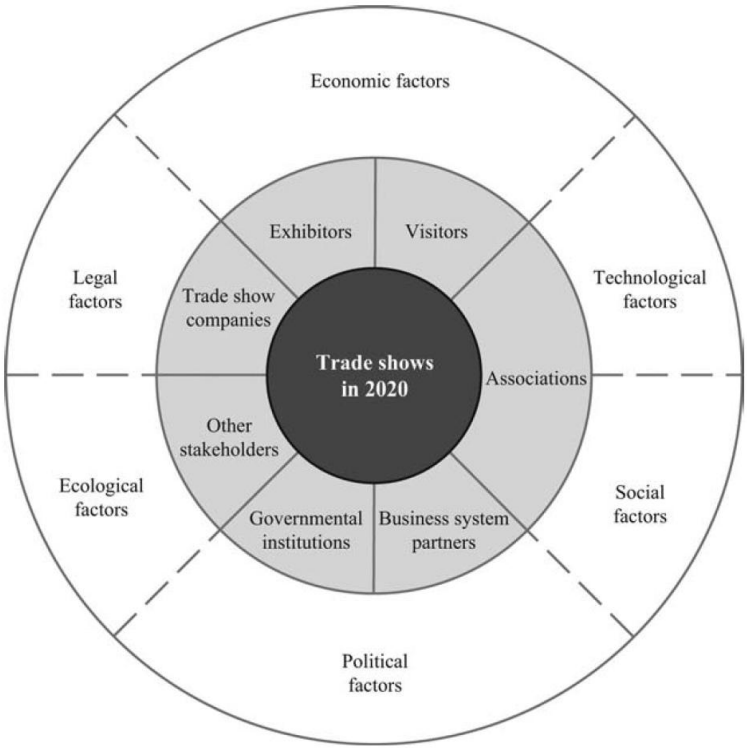

Figure 1: Factors of influence analysed for the trade show future trends

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Trade fair is regarded as the perfect platform, which can be used to buy and sell products in front of a global audience. Due to the exposure through trade fairs, the industry has found new buyers who were never a viable prospect in the past. The massive appeal of trade fairs have resulted in the complete transformation of some of these companies which have grown manifolds. This tremendous result has inspired the formation of new companies as the people have realized that starting small is not bad at all. Small scale company owners have not only benefited from exhibiting at the fairs but they have also gained a lot by visiting trade fairs. Newer products and cutting edge technology have been made available to the smaller companies due to the trade fairs. Moreover, they have been able to create tie ups with other bigger companies, forming a symbiotic relationship which has benefited both parties

Trade shows will continue to be an integral and indispensable part of the marketing mix of companies. However, trade show companies should continue to move away from selling space and instead become information brokers who facilitate the networking and interaction of market players. There are indications that this function represents the competitive advantage of trade show companies now and in the future. In addition, trade show organizers need to focus more on offering a broad range of high-level services.

Ian Whiteling explores UFI's Delphi Study and remarks that one of the most enthusiastic hypothesis regarding the trade shows is that „trade shows should become thought leaders in their markets", that trade shows should take the initiative to become „kings of content", and instead of selling space, the ability to supply clients with future-oriented information is seen as more and more important.

The research showed that many trends or activities that affect trade shows start with changes that happen outside of them, but end up having consequences on trade shows anyhow (Thimmesch, 2010). According to Thimmesch, the trade shows in the future will grow as exhibitors will be past their smaller budgets, companies will invest in marketing to compete with aggressive competitors, large number of new products needs to be introduced at shows. Thimmesch states that sustainable exhibiting will be the trend of the future and that more exhibitors will exhibit internationally.

Authors conclude that more exhibitors and trade show organizers will use social media to promote the trade shows/exhibitions, conference presentations and exhibitor presentations will improve and be more interactive as technology and tools get better and more interactive.

4. CONCLUSIONS

Trade show industry promotes investment inflow in the country, resulting in a direct form of portfolio investments as well the region benefits from the trade show grounds. Latvian trade show business is currently still in its initial development phase, although some of the trade shows are a serious announces to the international market. Lack of money, over-intensification of competition is now the problem to be solved in terms of Latvian trade show market. Trade shows bring multiple economic benefits and job opportunities to local communities and cities, these events connect individuals with feature product or service launches, problem-solving, education, and networking opportunities. Also they enable participants (both exhibitors and visitors) to stay on top of the latest industry trends, obtain competitor insights, as well as get new information of different fields.

The significance of trade shows is expected to grow in the automotive, IT and electrical/Electronics industries as well as in the areas of environmental protection and healthcare. Instead of selling space, the ability to supply clients with future-oriented information is seen as more and more important. The

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social media and new technologies will be more and more involved in the trade show organizing and exhibiting at trade shows.

Latvia geographically has a potential to become a significant Baltic States centre of the trade shows, but the proper legal framework is needed, as well as Baltic governments should cooperate and create conditions for sustainable development in the trade show field.

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THE PRESENCE OF STEREOTYPES IN ADVERTISING

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Abstract

The research we have conducted is based on LeoShe II Study, published by Leo Burnett Advertising Agency, which certifies the presence of stereotypes in advertising addressed to women. A previous study on the content of advertisements issued in 2007 for five of the most important categories of products addressed mainly to women audience showed that 90% of the ads had contained at least one stereotype. If we take into account media investments, than the phenomenon dimensions become obviously clearer. Advertisements addressed exclusively to feminine audience in 2007 represented 47% of the total GRP in advertising (while TV ads targeting men only 17%), and the ads targeting altogether the women, 82%. Therefore, it is not an isolated or minor phenomenon but the main majority of Romania advertising.

The conclusions of this paper provide a summary of advantages and disadvantages of maintaining stereotypes and their influence on consumer behaviour.

Key words: *stereotypes in advertising, women audience, advertising stimuli*

1. INTRODUCTION

Advertising stereotypes reflect in many cases certain lifestyles through psychographic qualities of the consumers. They enable social identification with presented models or self-image awareness. Thus, in this case, advertising becomes an important factor of social development and enhancement of such thinking. For it is not always personal life experience the one to provide values and facts, but the individual who learns from the experience of others. Thus, integrative and stereotypes-based advertising is promoted.

Our research has started from LeoShe II Study, published by Leo Burnett Advertising Agency, which approaches issues related to the presence of stereotypes in advertising addressed to women. A previous study on the content analysis of advertisements issued in 2007 for five of the most important categories of products addressed predominantly to feminine audience showed that 90% of them had contained at least one stereotype. If we take into account media investments, than the phenomenon dimensions obviously become clearer. Advertisements addressed exclusively to feminine audience in 2007 represented 47% of the total GRP in advertising (while TV ads targeting men only 17%), and the ads targeting altogether the women, 82%. Therefore, it is not an isolated or minor phenomenon but the main majority of Romania advertising.

The methodology was less conventional: in depth interview. We selected 36 women who had 20 minutes available to design ads for five categories of products: detergent, shampoo, coffee, shower and sausage. They were selected so that preponderant feminine audience would be targeted and communication be sufficiently supported to favour an eventual emergence of stereotypes. At the end of the interview we applied a role-play in pairs, in which women adopted the role of "agency", trying

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"to sell" ads to the "client" by arguing their effectiveness. As a result, it was created a dictionary of stereotypes selected from the ads designed by the respondents. We considered as communication stereotypes those common elements appearing in most commercials created by feminine consumers in the category concerned. For example: stunning flavour/smell (coffee), hair shampooing image (shampoo), effect on the cloth (detergent), etc..

The representatives of Leo Burnett Advertising Agency Leo Burnett said that the best way to avoid use of stereotypes in advertising, was to identify them. Their argument grounds on the fact that most advertisers work for weeks on seeking original ideas for commercials, discovering later from researches that they are either already shared or too common.

Our research aims to check whether the conclusion resulted from LeoShe II Study is true or not, namely: "consumers use stereotypes when they are put in the situation to create and assess advertisements".

2. RESEARCH DESIGN

Analysing LeoShe II Study, one can see that when acting as "specialists", the consumers take advantage from the lessons learnt in the only advertising school they ever have attended: advertising breaks. People who have been exposed to thousands of ads can replicate and produce stereotypes when they are asked to bring examples of advertising.

The purpose of the research is to test consumers preference for stereotypical thinking when talking about advertising.

Therefore, the research objectives are as follows:

- Identify the stereotypes associated by respondents to each category of product in the ads.
- Detect possible differences in the stereotypical formulation, depending on their experience or lack of experience in marketing.

Research Hypothesis

Hypothesis 1: When consumers are put in the situation to create and assess advertisements, they use the stereotypes found in advertisements frequently (conclusion of the LeoShe II Study, published by Leo Burnett Advertising Agency in 2008)

Hypothesis 2: Creativity and originality of consumers in creating advertising depend on their marketing knowledge (the capabilities and skills acquired by a marketing graduate versus the capabilities and skills acquired by a finance-banks graduate)

The study method is the in-depth semi-structured interview. This is the best solution, since it is the only one that provides a response to the assumption that, usually, the consumers recommend stereotypes when creating ads. This method will allow us to identify the main stereotypes together with the reason why consumers consider them effective. The semi-structured interview has been conducted separately in pairs of two respondent students, belonging to the same specialization. The study relies heavily on the atmosphere that enables participants to express their creativity, argue their ideas freely and without inhibitions. That is why we have chosen pairs of friends as respondents. There are 18 pairs of friends, totaling 36 of feminine consumers of five categories of products,. They are third year students, 18 students from marketing specialization and 18 students from finance-banks

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specialization. Another selection criterion has been the preference for television as means of recreation and also their level of tolerance for commercials.

Instrument of the Study: semi-structured interview guide

3. RESULTS OF RESEARCH

Since stereotypes influence consumer's behavior, we considered necessary to test consumers` predilection for thinking in stereotypes when talking about advertising. This has also become the objective of our research when analysing the presence of stereotypes in the ads addressed primarily to feminine audience.

When they have been asked to create and assess advertisements, the respondents have used and recommended the stereotypes. These are frequently circulated elements in advertisements, therefore they are believed to be accurate and efficient because they are the "recipe" used by all the ads for a category of products. It is obviously clear they have stepped into the feminine consumers` mind, who have immediately attempted to justify their importance.

The respondents with marketing-background avoided to use too many stereotypes, trying to bring more originality and uniqueness. Certainly, ads designing has been a challenge for them. In return, the respondents with finance-banks background had a more technical approach, trying to emphasize the quality through a greater number of stereotypes. Therefore the above hypothesis is true, namely: "creativity and originality of consumers when creating commercials depend on their marketing skills". We can also make the difference between vocation for original ads and vocation for informative ads.

The fact is that the presence of stereotypes has become inevitable, since some of them grew indispensable components in the universe created for each category of product.

Stereotypes associated with coffee advertising:

- connecting people – this is the essential promise of the coffee.
- a cup of coffee is usually placed between at least two people.
- the steam does not make any reference to the coffee temperature, but always to its the flavour/smell.
- soothing atmosphere of drinking coffee
- coffee beans, most often fried to become recognizable.
- energizing effect – the coffee awakens and saves you from extreme situations.

Associating stereotypes and coffee ads, the highest rate is recorded as follows:

- coffee cup (24%) - 27 appearances
- soothing atmosphere (21%) - 24 appearances
- connecting people (21%) - 24 appearances

Stereotypes associated with shower gel advertising:

- natural attribute suggested by a natural environment, such as: water, fruit, wood, etc.

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- pleasant fragrance described by the protagonist's gestures, smelling her skin with satisfaction, closing the eyes, or going closer to her partner who is captivated by the fragrance of her skin
- shower gel pouring
- washing action becomes an artistic moment, emphasized by the protagonist's beauty
- fine skin - effect suggested by smooth touching of the skin while or after showering.
- refreshment – the protagonist is happy and energetic after showering
- woman's happiness - she seems lost and detached from the world when using it
- flirt - after using the shower gel, the protagonist gets a great power of attraction on her partner

Out of the total stereotypes associated with shower gel advertising, the most mentioned within the sample of respondents are as follows:

- pleasant fragrance (20%) - 23 appearances
- washing action (18%) - 20 appearances
- flirting (17%) - 19 appearances

Stereotypes associated with detergent advertising:

- clean underwear
- detergent` scent
- stain - which always ruins a garment
- the children who always generate difficult stains
- 30-40 years old women, the consumer`s profile in the detergent ads
- demo - animation with the detergent effects/action on cloths
- third person – the one that recommends the detergent
- Stereotypes associated mostly with detergent advertising:
- children (20%) - 24 appearances
- third person (17%) - 21 appearances
- clean underwear (17%) - 21 appearances

Stereotypes associated with salami advertising:

- arrangements on plateau
- vegetables and cheese, ,,inseparable friends" of sausages
- family (usually in the average number)
- sandwich - the final result of salami ads
- the child - who is almost always present

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- cutting the salami
- use in different contexts
- grandmother – the prominent figure of our childhood

We have noticed that the following stereotypes are mostly associated with salami advertising:

- the child - who is almost always present (17%) - 20 appearances
- arrangements on plateau (18%) - 22 appearances
- use in different contexts (15%) - 17 appearances

Therefore, the first hypothesis is confirmed, namely: "consumers use the stereotypes they find frequently in advertising when they are put in the situation to create and assess advertisements.

Research restrictions:

- time limits: low time allowed to design each advertisement, the respondents felling they are time-pressed;
- long duration of interview (3h40min): the interview participants got tired, so that their state of fatigue has predictably influenced their responses.

4. CONCLUSIONS

Stereotypes can be understood in two ways: on the one hand, as a resistant reasoning to social change, on the other hand, as a necessary way to process and arrange the information, and to discover a sense of the world, given individual peculiarities of human thought. The dilemma between individual and collective, general and particular has generated emphasize on the disadvantages of stereotypes against the benefits of stereotypes. When placing these features face to face means nothing but an accurate analysis of the same issues that have helped us to identify the stereotypes: segmentation of audience, life style, ads text message, product image and its impact on consumers.

Advertising stereotypes often reflects certain lifestyles of consumers through psychographic qualities. They enable social identification with presented models or self-image awareness. Thus, in this case, advertising becomes an important factor of social development and enhancement of such thinking.

Stereotyping results in excessive schematization of the product by positioning, which overshadows some of its attributes. Product qualities are highlighted by relating them to other competition products. Image viewing is done by categorizing and not by full description of the product. For a non-user, the information role of the advertising is essential in choosing the product. Thus, we conclude that, on the one hand, stereotyping motivates the action of choosing, and on the other hand it blocks up such action if the consumer likes the variety. As for the fact that stereotypes are difficult to change, because cognitive mechanism is strongly embedded in a direction, stereotypical promoting can make harm to the product in case of new and sophisticated consumers.

One of the consequences of using stereotypes in an advertisement (elements that are present in most spots of the same class) is that it tends to look similar to others. This is why some commercials do not enjoy a higher brand attribution. For the consumer of advertising is becoming more difficult to make

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the association between advertise and brand. Also, perception of initial information is much stopped by the abundance of stereotypes, in case such perception exists.

A well done brand tracker can be a true brand test, offering opportunities to identifying clues for a stereotypical communication.

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POTENTIAL TO OVERCOME THE PROBLEMS IN CONTEMPORARY DEVELOPMENT OF RESTAURANTS THROUGH THE IMPLEMENTATION OF THE MODEL MANAGEMENT BY OBJECTIVES

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Abstract

Tourism and restaurants in particular have become an essential factor both internationally and in the Bulgarian economy. Globally, emphasis is placed on effective management of human resources and quality of service. Currently in Bulgaria are mainly being monitored indicators such as turnover and profit, without seeking their relationship with managing staff and quality of services. We conducted two surveys, one aimed at staff and the second to the management staff in the restaurants. The results highlight problems in the sector and the arising the need for finding new approaches. In the current study a possible solution is sought by introducing a model of human resources management by objectives.

Key words: *Management by objectives, MBO, restaurants, problems*

1.INTRODUCTION

Tourism is one of the main areas of development and income for our country. the improvement of the conditions for its better management would lead to growth in the sector and the economy as a whole. In recent years, tourism in our country is developing in a very extensive way with significant expansion of facilities. However, infrastructure aspects and providing of qualified personnel do not meet the same development intensity. These shortcomings associated with rapid growth and the gap between the subjective factor affects the overall efficiency of the tourism industry in our country. The theme of this report is determined by: (1) The need to overcome the negative aspects of restaurant development in Bulgaria. (2) The ability to draw on international experience, which tends to apply the approach of management by objectives with proven effectiveness.

The aim of the study was to identify weaknesses in the system of restaurants in the country, to analyze their causes and to offer an alternative organization to address these shortcomings.

The tasks placed in the article are:

A. To identify the problems, based on the results of the surveys;
B. To describe the main features of management by objectives;
C. To compare principles of effective management in the restaurants
D. To answer the question which problem areas could be improved through the implementation of management by objectives in restaurants.

Different materials and methods were used:

- Monitoring;

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- Theoretical analysis;
- Questionnaire and interview;
- Statistical and mathematical methods.

The strategy of management by objectives will be considered first in the study.

2. THE STRATEGY OF MANAGEMENT BY OBJECTIVES

Management by objectives is a term in the field of public relations, which means proactive process of anticipating, assessing, evaluating and responding to results of public policy which may affect the relationship of an organization and its stakeholders work audiences.

The core concept lies in two main elements:

1. Timely determination of the result with potential impact on the organization and
2. Strategic response to lighten and even benefit from the consequences.

Beyond the functions of public relations strategy of management by objectives provides study and determine the priority outcomes, evaluates them on the organization recommended that the policy and strategy to reduce risk to a minimum, developing common tactics, and their implementation, evaluate the impact of the program. [1]

Management by objectives is traffic management (the entire company, department or individual employee) to produce business results, which at this stage of the company are of paramount importance. [2]

Management by objectives is a systematic process by which an organization involves its employees as individuals and members of the group to improve organizational effectiveness in the implementation of corporate mission and goals. [3]

Some of characterization of the culture of management by objectives are connected with effective teamwork, organizational flexibility, openness to innovation and creativity, ability to invest capital to tolerate mistakes and manage risk, ability to create strategic alliances, cooperation, and negotiate to achieve joint outcomes, adaptability to changing circumstances, perseverance, encouraging diverse points of view, understanding of different cultures, ability to balance the tension between short and long term goals, ffective knowledge management [4]

Effective management is largely entails and cost reduction is one indicator of effective management. Management model by results in the course of its operation also leads to more efficient use of resources to reduce costs and therefore increase profits.

The principles of effective management in the restaurant proposed in the book "489 Ways to Cut Costs in Restaurants, Cafes, Clubs, Catering, Hotels & Bars" can be compared with those which are entered in parallel model of management by objectives. So both will be displayed and some of the features of the system of management by objectives.

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Table 1 . Compare the principles of effective management in the restaurant proposed in the book "489 Ways to Cut Costs in Restaurants, Cafes, Clubs, Catering, Hotels & Bars" and those which are entered in parallel model of management by objectives [5].

N	Principles given in "489 Ways to Cut Costs in Restaurants, Cafes, Clubs, Catering, Hotels & Bars"	Principles in management by results compared with these given in "489 Ways to Cut Costs in Restaurants, Cafes, Clubs, Catering, Hotels & Bars"
1.	Use the internet to advertise positions - to speed up recruitment and cut costs. This way the ad stays up for days or weeks.	In management by objectives follow certain details, which are made by software programs, some of which are web based. Also, it should not preclude the use of internet recruitment.
2.	Get your staff to help you recruit – once they are established ask them to recommend others	It is also a method and management by objectives.
3.	Pay trusted staff a bonus if a person they recommend stays beyond a particular time eg 3 months	In the model does not practice, giving bonuses for recruiting new staff, but if managers consider not contraindicated to introduce.
4.	Hospitable beginnings – make time for induction and a tour of premises.	This is required for the work with the model by objectives.
5.	Give them time and a quite area to read your staff policies & procedures.	This is also good practice that applies to the system through the objectives.
6.	Introduce them to other staff both front and back of house.	Apply in management by objectives.
7.	Make training time for familiarisation with the menu, beverages, cooking methods etc.	All activities related to informing new employees using the system through the results.
8.	Assign a team buddy to demonstrate procedures and answer questions.	And this is related to information awareness.
9.	Clarify key issues like pay day and rates, staff meals and uniforms etc.	In management by objectives is tolerated individual treatment.
10.	Check back within 2 days and at the end of the first week – a formal seated discussion of what's happening and what else they need to know.	Required prerequisite for the functioning of management by results.
11.	Use the systems in the Profitable Hospitality *Essential Staff Manual & Kit* to get all areas of recruitment and staff management organised quickly. Tight, written systems always mean lower costs.	These are administrative duties that apply always, no matter what system of management will be chosen.
12.	Have specific responsibility for *watching* costs and reporting waste in the	Monitoring costs are mainly carried out by managers, but reporting on waste, returned

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	job descriptions of all staff.	orders and claims must be reported by staff.
13.	Have specific responsibility for *managing* costs and *implementing* costreduction programmes in the job descriptions of all management staff	This was partly explained in paragraph 12. Managing costs is important for the model by objectives.
14.	Make sure supervisors and managers have specific numbers to report on, and the information they need to draw their reports from.	Mandatory condition to the proper functioning of management by results.
15.	Who is your trainer – does that job fall to the manager? They may not be the best person to do this job – too busy, not interested or not patient enough to coach and guide someone new. Split off this job and find someone who will find it a boost and do a much faster and more efficient job and get onto it much more promptly.	In management by objectives the manager is not always informative enough prepared or have enough free time. Very common is the practice of hiring professionals working in this field as a consultant, trainer or coach.
16.	Investigate and establish a work-place agreement that rolls extra pay and allowances and different weekend rates into one hourly rate.	These details should be regulated regardless of the management approach used.
17.	Even if you average pay rates over a week, offer a slightly higher rates for less popular times to ensure rostered staff turn up.	In managing payment by results is based on goals achieved and if there are special conditions of remuneration of labor, they must be clear to all employees.
18.	Make sure your tip allocation system works for your business as well as for the staff who collect them. Check that it encourages proper sales and cost-control behaviour. Change the rules if needed.	In any restaurant or other establishment, the percentage of gratuity should be determined carefully.
19.	Check classification of staff for workers compensation insurance rates. Check exemptions that may be possible for apprentices and trainees and have them classified separately in your payroll totals so you can get totals quickly and easily.	It is requisite for correct policy to employees in all cases.
20.	Make sure incentives for reducing labour don't	One of the goals of management by objectives,

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	reduce quality – they should be matched with performance indicators for service or product quality also otherwise overall quality may decline.	improving quality and lowering therefore is inadmissible.
21.	Adjust your opening hours - if you can get 2 long shifts staffed by fulltime people this may be less expensive or the same cost as casual employee for shorter hours. You may be able to open longer hours for almost the same wage cost	Time established standards are important not only in the restaurant. In management by objectives not focus on such distribution of tasks. There are other indicators into account.
22.	Set standards for how long it takes to do standard tasks eg how long to clear and set up the bar fridge, how long to peel a bucket of onions, how long to peel and prepare 5kg of shrimp. This gives guidance to new staff and helps supervisors keep the pace moving.	Standards are an important part of management by objectives.
23.	Hand out tasks in threes – 'I want you to do this, this and that, then come and see me when you've finished' – they will always have one more thing to do. Just giving one task at a time allows it to be stretched to fill the time available	These are technical details which, if managers may deem appropriate to implement the system through the objectives.
24.	Be careful of not to give too many hours to staff who want it extra work because they are short of money – there's a short term advantage but as they become tired their work quality suffers and productivity is reduced. You could get someone else to do those extra 20 hrs for the same rate and they would be fresh, more energetic and accurate.	This training is mandatory for the operation of any restaurant.
25.	Consider contractors for certain jobs eg cleaning that is traditionally done by kitchen or bar staff and not done well eg cleaning floor and bathrooms	It is optimal if the hygiene of the place is maintaining by a specially appointed staff responsible for it.

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	at the end of a long shift – no-one likes it or does it very well.	
26.	Look at the whole package of what you offer when setting pay rates. Often the business in your area with the lowest staff turnover is NOT paying the highest rate per hour. They are usually offering a lot of other benefits and intangibles such as teamwork, training, uniforms, staff discounts and social activities etc. Overall, their costs are much lower even though they seem to offer 'more'.	Practice has shown that the increase in wages leads to increased efficiency to a certain point, after which the proposed work began to decline or stay the same despite increasing the money. Intangible factors and incentives always have a positive impact on staff motivation.

After a thorough description of the characteristics of management by objectives is possible to answer the question of which problem areas could well be affected by the application of this system in the restaurant. The problem areas could be found by the two surveys conducted among the employees and managers in restaurants.

This study consisted of two surveys.

The first one is conducted among 20 employees of different restaurants and different positions - waiters, bartenders and chefs. Establishments were located in different towns in Bulgaria. The questions are related to the method of recruitment, motivation for work, how they evaluate the management of their superiors, how conflicts are resolved, what motivate them to work better and improve their qualifications, setting team work, how they evaluate the working conditions, their attitude to development in the sector, to what extent they feel valued as individuals and how they perceive their pay based on work performed. The survey included mainly closed questions, allowing for additional response where the respondent deems necessary.

The second survey is among 25 executives, managers and owners of establishments of different types and sizes located in 5 cities. The purpose of the survey is to verify the actual methods of management in the Bulgarian institutions; indicators that are monitored by managers, the attitude towards staff motivation, the consequences of financial crisis, ways of working and wage formation, turnover, educational level and requirements in this sector and other features. The questions were mixed with prevailing closed ones. The conclusions made are based on statistical analysis of responses received. Data were analyzed by SPSS Chicago Ill.

3. Results

The responses of respondents in the first survey can be summarized in Table 2 as follows:

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Table 2. Summary of responses from the survey among employees:

N	Domain	Results
1.	Gender	The ratio men : women is about 49:51
2.	Education	67% have secondary education, others have higher. There are no registered cases of primary or elementary degree.
3.	Education	10 % of respondents with higher education with majors in tourism.
4.	Training	The staff in restaurants do not have the proper training and education.
5.	Experience	Their average experience in tourism and in particular the restaurant is 5.9 years.
6.	Local experience	Their internship in this organization has an average duration of 2.2 years.
7.	Turnover	There is higher turnover in this sector than in other sectors of the economy.
8.	Knowledge of languages	The main languages spoken by respondents are English and Russian.
9.	Knowledge of languages	Levels of proficiency in the language are secondary and primary. 80% of the candidates speak only one foreign language, 10% speak 2 and more languages, while 10% did not speak any foreign language..
10.	Recruitment	85% of staff is recruited after a recommendation from a colleague who now works in the organization or job advertising.
11.	Satisfaction	To the question: "Are you satisfied with your job?" - Only 10% of respondents were satisfied and wanted to keep their current jobs. - 60% of respondents said they were satisfied, but want to change jobs. - 30% were not satisfied and wanted to change their job. The conclusion that can be drawn from the above figures is that there is a desire FOR??? among 90% of current employees, even if they are satisfied with their job.
12.	Values	In one of the questions the respondents have to point out various factors of importance to them. Results are a grand total of points given by each of the respondents to each indicator : 1 - The most important thing is wages to show results from the labor process - 191 2 - a stable salary - 188 3 - fair pay - 184 4 - the atmosphere in the team - 179 5 - building a career - 176 6 - independent thinking and self-expression - 167 7 - raising the qualification - 160

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		8 - working conditions - 155 9 - fair distribution of work - 149 10 - relations with management - 145 11- work without stress - 138 12 - reputation of the employer - 124 13 - flexible working hours - 110 14 - content of the work - 96 15 - the additional benefits - 82
13.	Training, Qualification, Motivation	In another question respondents have to rank the most important factors that influenced the training of workers. Results are a grand total of points given by each of the respondents to each indicator: 1- most would affect fair assessment - 186 2- improving the working climate - 184 3- the possibility of career advancement - 180 4- seeing the results of its work - 174 5- the opportunity for training - 168 6- participation in decisions about changes in company policy - 145 7- the desire for greater awareness of senior managers to staff - 136 8- stable operation without the threat of redundancy or dismissal - 118 9 - an opportunity for the expression of their own strengths -97 10- the possibility of job autonomy - 86 11- obedience to the authoritarian leader -75
14.	Negative aspects	The results shown in the following lines are associated with negative aspects in the management and organization of facilities, personnel who stands out, once again are ranked from most negative to less active with a negative sign. Results are a grand total of points given by each of the respondents to each indicator: 1- Llack of moral and material encouragement from managers and successful performance of employees - 190 2 - The impossibility of expressing his own opinion and position - 185 3 - Dissatisfaction with lackof rise of the salary for a long period of time - 175 4- Bad atmosphere at work - 169 5- Indicated lower wages of some employees, provided that the same qualifications, experience and conducted the same activities as the rest of the staff - 150 6 - Positioned mismatch between training and operating as a whole - 139 7 - Unfair and subjective attitude of managers towards some members of staff - 115 8 – The negative of uneven distribution of work and in terms of volume and in terms of the expertise and some of the employees shall be less skilled and in most cases less lucrative work, which is contrary to the requirements for employment to which are the same for all - 97 9 - Overtime events. The feeling of the employees that are part of the organization - 80
15.	Labour migration	The survey included a question related to the setting of the staff to take

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		the same position but in another country. 60% of employees are willing to accept it, and expecting higher pay accordingly.
16.	Conflicts	In other question respondents must answer what is the organization in relation to conflict and how to deal with them. - 40% note that in the event of conflict management intervenes to take sides and thus solve the problem. - Another 40% responded that conflicts of any kind are avoided. - The remaining 20% mark that conflicts are not solved and suppress or decide in favor of employees with more experience or training in the organization.
17.	Attitude to the profession	When asked whether they wish to change jobs and their profession in the restaurants 90% of respondents answered "YES".

Fig.1. Satisfaction of the employees from working

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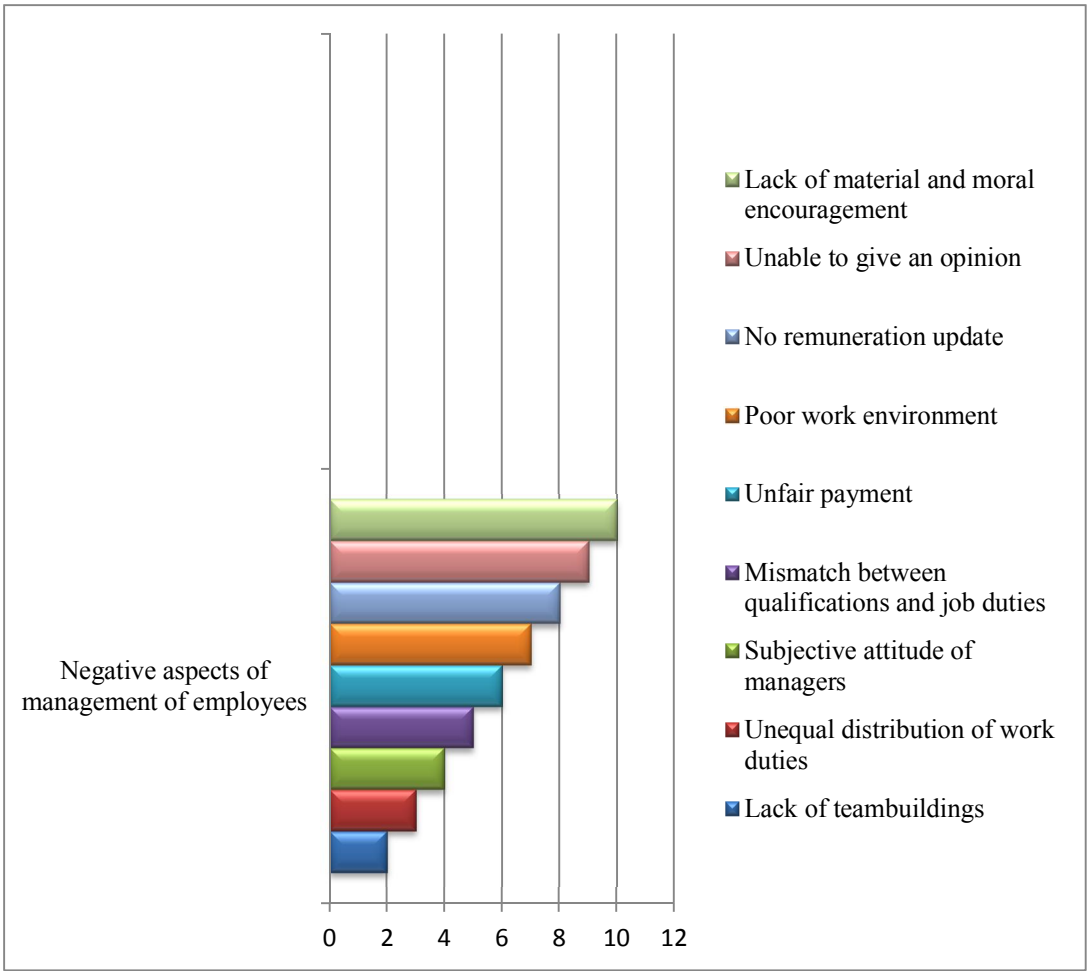
Fig.2 Negative aspects of management of employees



The results of the second survey among managers are posted in table 3.

The general conclusions that can be drawn is that among the analyzed restaurant managers has little interest in the field of human resource management which is not in parallel with global trends. Changes or the introduction of something new is accepted with distrust and reserves from both managers and staff. Motivation is just about the financial needs of employees. Money is not invested in software and consulting with specialists. In general, conflicts are regarded as a problem rather than as an opportunity to constructively address the issues and derive lessons for future practice. Staff in its marginal part, does not have the necessary education. Management by objectives is an unknown term and is used in units of institutions, with the assistance of external experts and training.

Many common views, applying to staff and managers, can be identify of the two surveys. The results are posted in table 4.

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Table 3. Results of a survey among managers

N	Domain	Results
1.	Education	About 70% of executives and managers do not have higher education. The other 30% have university degree but not in the necessary field.
2.	Experience	Managers usually have previous experience of at least 3-4 years in the field of tourism
3.	Professional development	60% of employees rise through the rank.
4.	Knowledge of languages	The main spoken languages are English and Russian.
5.	Organization of work	The work is organized into 80% of cases in 2 shifts and 2 rest. 85% of the salary is forming a solid wage and an additional percentage of turnover.
6.	Organization of work	Work shift in 90% of cases is 12 hours and more.
7.	Trial period	In all institutions there is a trial period before signing a permanent contract within 1-6 months.
8.	Recruitment	The main sources of recruitment are announced recommendations from other employees in the company and exchange between different sites of the same chain.
9.	Recruitment	In 98% of cases, candidates have to do through an interview and test.
10.	Criteria	The criteria that raise staff are mainly: previous experience of such a position, teamwork, appearance, communication skills.
11.	Criteria for promotion	The criteria for promotion within the organization are based on loyalty, promptness, communication, dedication, although 95% of companies do not plan a career and do not give an opportunity for development.
12.	Creativity	With few exceptions, everywhere the creativity of staff is tolerated.
13.	Gender	No overwhelming majority of either gender in leadership positions. Men : women 54 : 46
14.	Software	Specialized software is used mainly by large institutions, the small ones operate only with cash register and the most popular products are "Mistral" and "R-keeper"
15.	Training	Training is done on recruitment and is not typical in the process of work.
16.	Motivation	No focus on staff motivation except in case of problem.
17.	Motivational system	There is no motivation system in 60% of establishments and the existing one is in the form of fines and incentives.
18.	Personal relationships	The companies do not make team buildings, but most institutions support and good convergence between personal relationships.

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19.	Team vs individual	In 70% of the cases the team is valued more than the individual.
20.	Governance	Two main styles of governance are democratic and liberal.
21.	Control	Control is exercised mainly by managers and sometimes higher managerial areas.
22.	Benefits	No benefits in 90% of sites and in the remaining 10% are provided in the form of transport after work or pay for taxis.
23.	Financial crisis	The financial crisis is reflected in the most by reducing the workload and number of customers corresponding reduction of wages and staffing, increasing the duties of a position and increase the expenses.
24.	Turnover	Turnover is very individual, but is generally higher than other sectors of the economy. In small establishments is not very big or moderate, because works team from the beginning and it works without major changes. In the resort facilities exist in large numbers. In large and expensive restaurants employee benefits are greater in most cases and thus is moderate, but there are seasonal and migration during the high season at the resorts.
25.	Requirements	Employees were informed in 95% of establishments for their requirements and qualities that are valued.
26.	Literature	Managers and administrators trust 97% of cases of intuition in management of the house and little interest in lateral literature. They read very little specialised literature.
27.	Monitoring	Indicators that are monitored are turnover and profit - 100%, and after that number of clients served, number of complaints, speed and quality and motivation are poorly monitored.
28.	Report of results	The results are reported on a different period but most often hits a month and week. A make comparisons with previous periods is not being made.
29.	Planning	Respond to changes in circumstances after they are already a fact. Planning and forecasting, excluding orders for supplies and products, are less affected.

Table 4. Summary findings of the two surveys

N	**Domain**	**Findings**
1.	Recruitment	The recruitment is done mainly through advertisements and recommendations from staff members.
2.	Education	Staff in its marginal part, does not have the higher education.
3.	Gender	The ratio men : women is marginally 50 : 50
4.	Motivation	No attention to staff motivation
5.	Atmosphere	Managers rarely work focused on improving the atmosphere in the team.

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6.	Teambuildings	No teambuilding events organized outside work despite the willingness of staff
7.	Turnover	Turnover is generally higher than other industries.
8.	Financial crisis	The international financial crisis negatively affects turnover and headcount, which is loaded with additional debt and reduce, while the payment is not updated. In most cases this demotivats the employees.
9.	Literature	Most of the managers do not read and are not informed about the intricacies of training or personnel management and the staff often complain of non professional attitude or requirements.
10.	Knowledge of languages	Languages spoken are mainly English and Russian.
11.	Attitude towards work	54% of respondents were willing to work abroad in the same direction. More alarming are the statistics that 85% want to change the work in restaurants with another.

Fig.3. Educational structure of employees

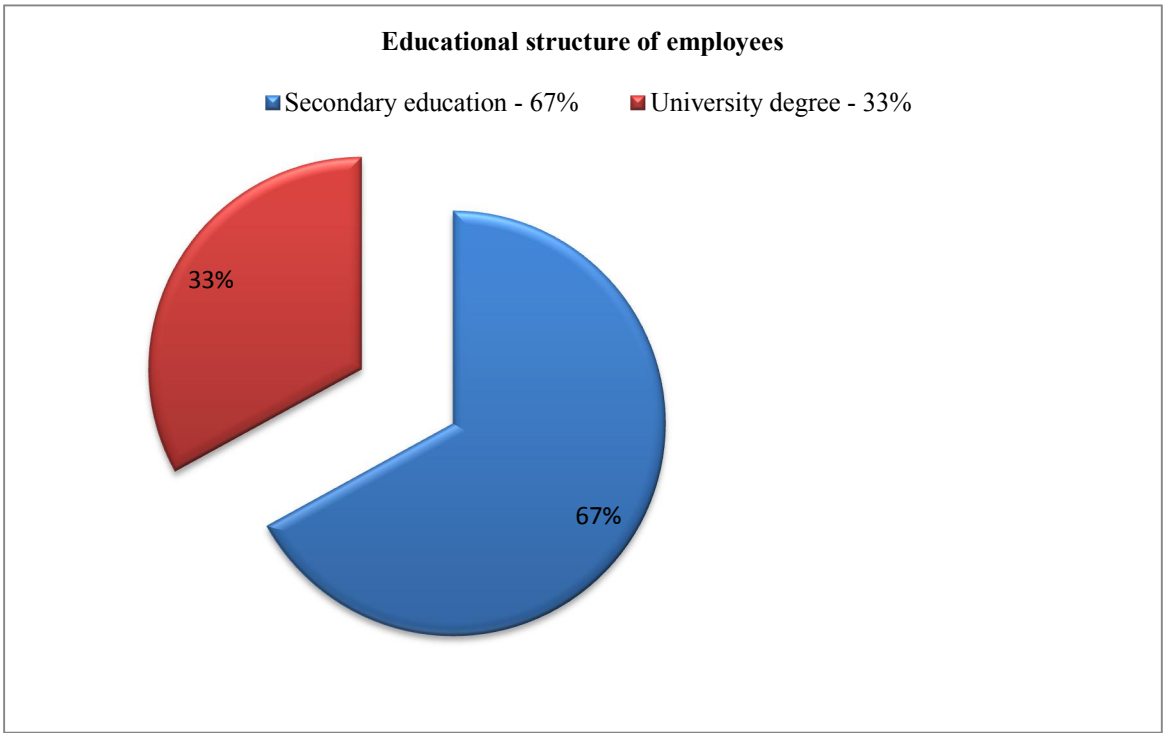

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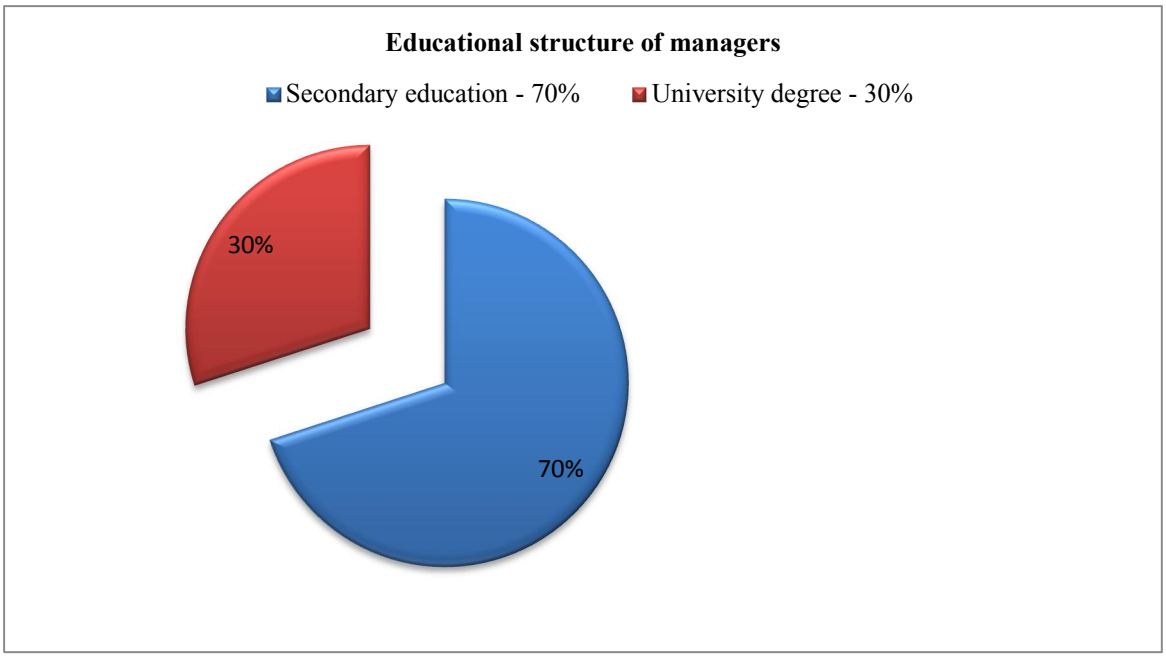
Fig.4. Educational structure of managers



4. GENERAL CONCLUSIONS

In this project target was set based on the questionnaire method to investigate some weaknesses in the organization of restaurants and look at real world experience opportunities for improvement. The outcome of two surveys made some general conclusions:

1. In the field of human resource management in the Bulgarian restaurant not keen interest and desire to develop in parallel global trends.

2.Changes or the introduction of something new is accepted with suspicion and reserve.

3.Motivation shrinks to only financial needs of employees.

4. It relies on intuitive decisions based on personal, not always sufficient experience and money is invested in software and consulting with specialists.

5. Staff including and management team for the most part, not the necessary education. After analyzing the results of both surveys is necessary to show the possibilities for eliminating or reducing the problems identified. This will be considered a winning strategy / organizational approaches / solutions in countries with developed tourism - management by objectives.

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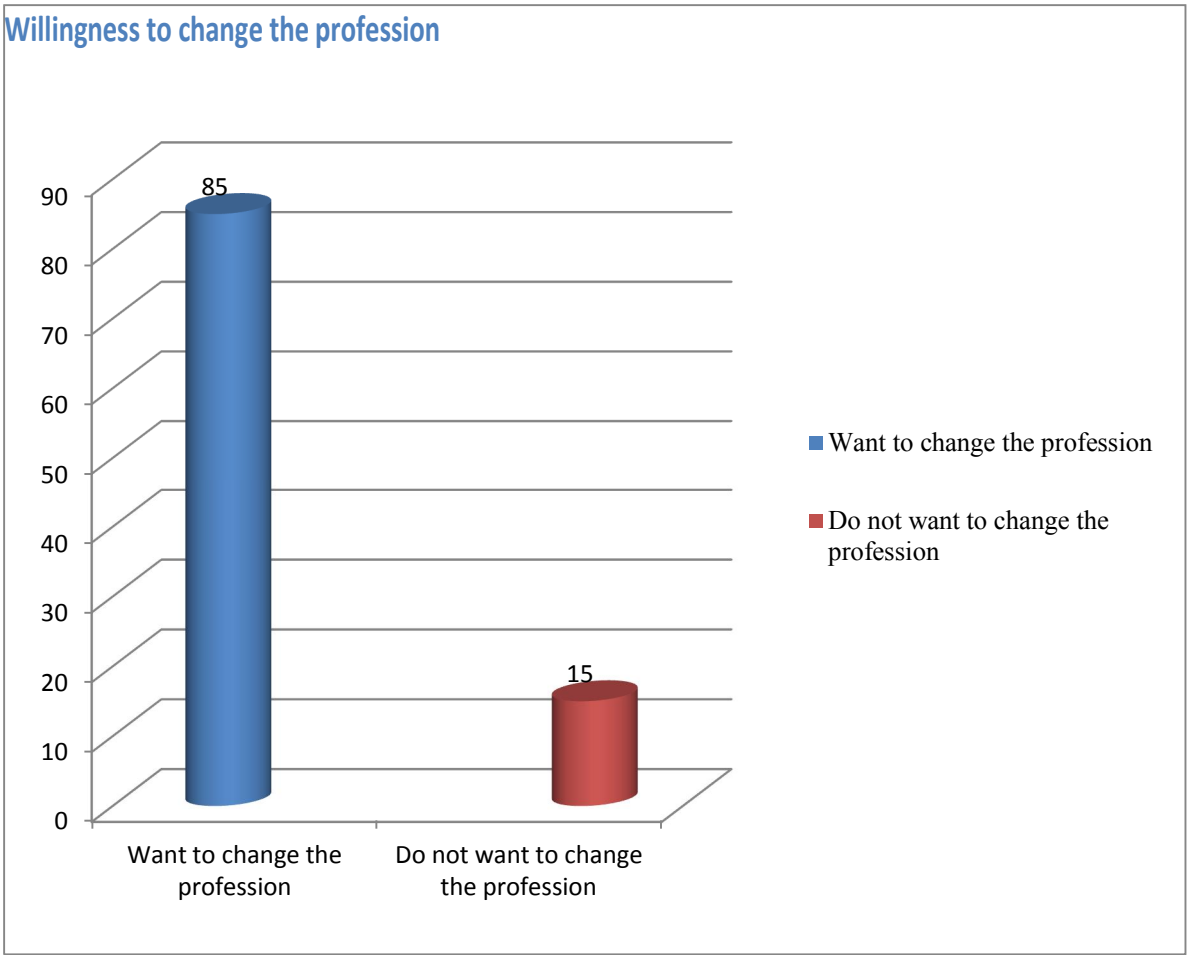
Fig.5. Willingness to change the profession among managers and employees



5. LISTED HERE ARE GENERAL IMPROVEMENTS PREVAILING IN MOST PLACES:

1. Acceptance of the work in the restaurant can be seen and not only as a temporary solution as an option for future development, but this can only happen if the work is evaluated and gives a real chance of the results of the staff to rise in the hierarchy and the career.

2. Through the system of management by objectives can be increased the motivation of both managers and staff.

3. Improving the business climate is very real result of the model.

4. Increasing the duration of work for an employer and reduce turnover.

5. Improve the image as an honest and capable development employer. Making the company a desirable workplace and attracting excellent staff.

6. Gaining competitive advantage for the company compared with competing organizations, arising from goodwill among employees and job seekers better candidates.

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Could be achieved many positive changes and results, but this applies to individual needs of each organization. The system allows such an individual approach consistent with the desired results and the existing restrictions. All these changes can be made through management by results and final results it can be an effective tool for overcoming them.

6. CONCLUSIONS

In conclusion, we can say that the improvement of labor relations: the maintenance of labor peace between rulers and ruled, between employer and employees. Man is seen as a resource as part of the management of human resources but is also a person who feels has its own interests and goals and is influenced by the work atmosphere. A manager is required except a decent wage, to provide an atmosphere conducive to their subordinates in the workplace and understanding, because it favors to maximize their potential deployment, better work performance and hence improve labor relations.

Management by objectives is proved positive influence method. With proper application leads to increased work efficiency, increase revenue and quality of services, improve staff motivation and faster development of the organization.

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POSSIBILITY OF APPLICATION MANAGEMENT BY OBJECTIVES IN THE RESTAURANTS. ADAPTING THE PHASES OF THE IMPLEMENTATION OF THE MODEL IN THE SPECIFIC AREA IN BULGARIA

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Abstract

Management by objectives is a widely used and successful method of management since 1960. The presence of certain characteristics and problem areas in restaurants in Bulgaria gives reason to believe that the application of management by objectives can lead to positive change in the sector and its development in parallel with global trends. The report examines phases of management by objectives and implementing them to the specific features of the restaurants. Thus offers a practical model for managers, giving guidelines for action in the implementation of management by objectives in restaurants.

Key words: *management by objectives, MBO, restaurants, phases*

1. INTRODUCTION

Management by objectives is a widely used and successful method of management since 1960. The presence of certain characteristics and problem areas in restaurants in Bulgaria gives reason to believe that the application of management by objectives can lead to positive change in the sector and its development in parallel with global trends.

The methods used in the present study include:

- Theoretical analysis;

- Surveys;

- Monitoring as an additional method.

2. POSITIVE ASPECTS

Before starting to put performance management into practice, the restaurant managers must be convinced in the positive aspects of this approach and its characteristics. These are the main advantages of the implementation of target management.

It causes great enthusiasm, since target management offers a practical method of management by investing time in planning and reduceing the time needed for control. Targeted management leads managers to seriously consider more objectives. Explicit targets help to improve the exchange of information and gives the staff the opportunity to participate in decision-making. In addition, planning

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is done in such a way that largely avoid the hazards associated with the difficulties of assessing performance and control.

Further, management by objectives provides staff the opportunity to interact with managers. However, it is a means of providing feedback indicating how successfully the assigned tasks are peformed. This allows staff to participate in the development of norms for performance. To know what is expected of staff, it is also necessary feedback on how it actually works. When this connection shows inefficient work, workers should concentrate their efforts and energy on raising labor productivity. Productivity of people with specific targets is higher than that of people who work daily guidelines. Management by objectives when properly applied, represents a viable and powerful strategy to effectively address this challenge. Most organizations underestimate the scope and impact of organizational changes that accompany the management by objectives. This control will not work in an organizational culture adherent to a strict hierarchy, tight control and management by rules and procedures. Organisational change affects every aspect of the operations, including strategic planning, resource allocation and management, evaluation and incentives, monitoring and reporting. This suggests that the organization should be ready to launch a well planned and adequately funded process of change management.

In developing the model for management should consider whether it is already functioning restaurant, or a new one, which has just started its activities. It is assumed that the restaurant worker organization has stated things about mission, strategy, location, facilities.

The composition of the strategy includes elements such as mission, vision, values and competitive advantages.

The above elements can be summarized as "corporate philosophy of government." They are descriptive and in order to be implemented, they must be transformed into real action through strategic objectives, key success factors and specific tasks.

We must clarify that the management system through objectives can be applied in every sphere of business activity, not only in human resources. Also, if the restaurant is now run and managers have decided to apply this type of management - goals and strategy of the organization would be better to coordinate with the expected results and objectives to be carried out in the first phase of management by objectives. To start implementation, the idea must come from managers.

3. PHASES

3.1 Phase 1 Strategic Planning

Most managers comply with the terms of yesterday because have gathered experience and have succeeded. But management for tomorrow, refers to what should be done rather than what is already done. [1]

At this stage a good idea is to make SWOT and PEST analyzes.

SWOT analyze refers to Strengths, Weaknesses, Opportunities and Threats.

PEST analyze refers to Political, Economic, Social and Technological factors.

The factors of macro external environment must be weighted as well.

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Fig.1. Phases of management by objectives

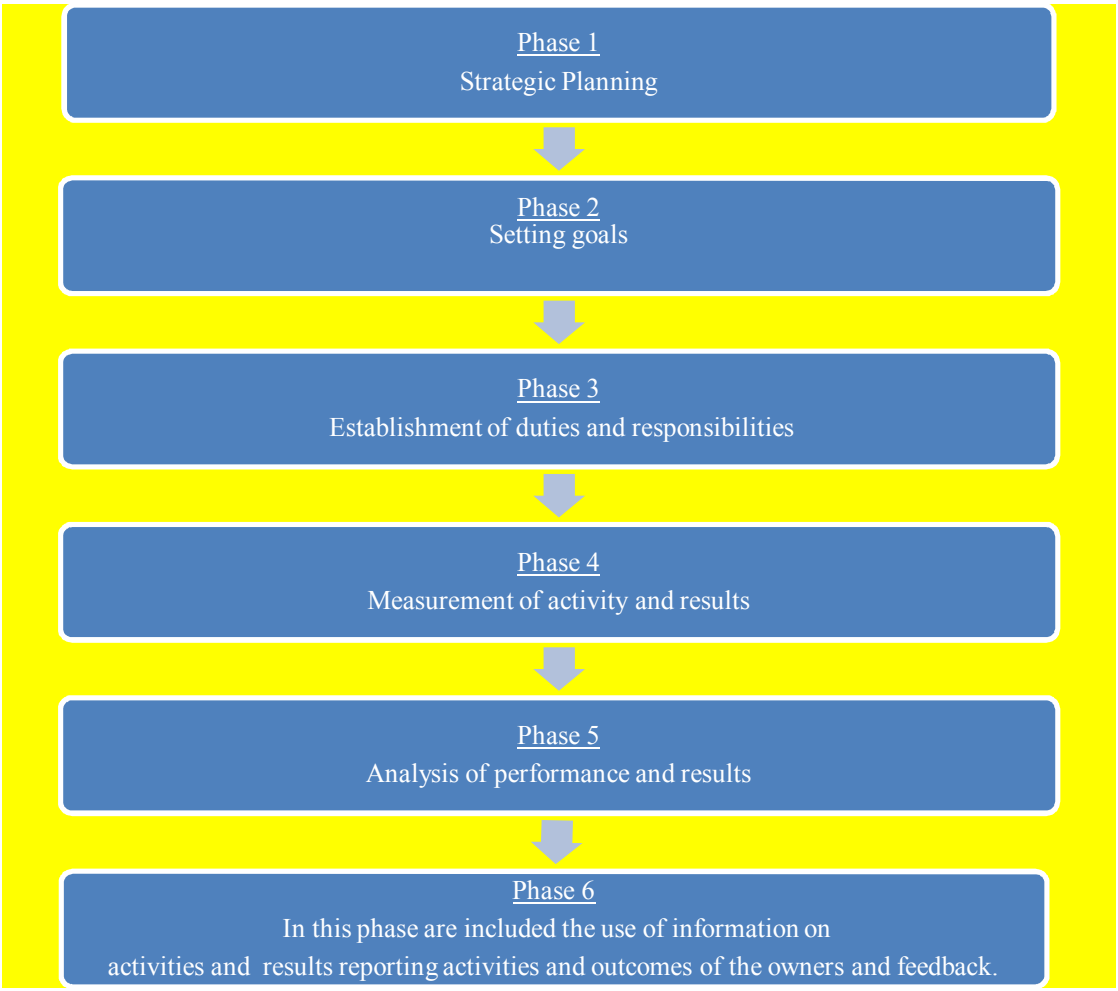

Table. 1 The factors of macro external environment.

POLITICAL FACTORS	ECONOMIC FACTORS	SOCIAL FACTORS	TECHNOLOGICAL FACTORS
Commercial Law	Inflation in%	demographics:	Scientific discoveries, innovations
Consumers	Factor for growth rate	Number, population growth, fertility, mortality	Innovations in technology and production technologies
Labour legislation	Exchange rate against major currencies	Migration, residence	Innovations in transportation, communications, information, electronics goods / materials

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Tax legislation	Interest rate	Age, sex, marital status	Technologies to protect the environment and cleanliness in urban
Protection of competition	Gross domestic product in the lev	Education, occupation, income, social groups	Alternative products places and natural resources
Protecting the environment	Unemployment	culture	
Health protection, ensure hygiene and safety of products and services	Inactive population in %	Material and spiritual values	
Tourism Act		Code of Conduct	
Unions		Traditions, customs, fashion	
Financial Institutions		Beliefs, ideas, attitude	
Organizations protect private interests			
Financial Institutions			
Political conflicts Terrorist Attack Strikes, protests, business			

[2]

Factors of the microenvironment must be weighted as well.

Table.2 Factors of the microenvironment

Factors of the microenvironment	Key features of the organizatior	Resources of the organization
Consumer demand / markets	Name	Material
Competition	Legal status	Financial
Analysis of strengths and weaknesses of the organization	Core Business	Intangible
Suppliers	Hygiene	
Intermediaries	Location	

[3]

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Table.3 Factors internal environment and their impact on organizational development

Factors internal environment			
Human Resources and Social Environment	Processes, activities and systems	Management	Image, popularity and uniqueness
Service and operating staff Administrative staff and personnel executives Specialists Atmosphere; Relationships Work as a team and groups	The technology of production and sales, delivery and transport, EMS information, supply of raw materials, goods and resources and more. Technology serving the clients	Objectives, strategies, plans. Systems management: cost, human resources, quality, environment, products markets. Values, skills and knowledge desired of managers	The image is a combination of ideas and beliefs that people have about the organization or its products and services, and brand name, full activity. The image is a complex of associations and institution about the firm or company. They are the product of the mind which seeks to handle the variety of data organization

[4]

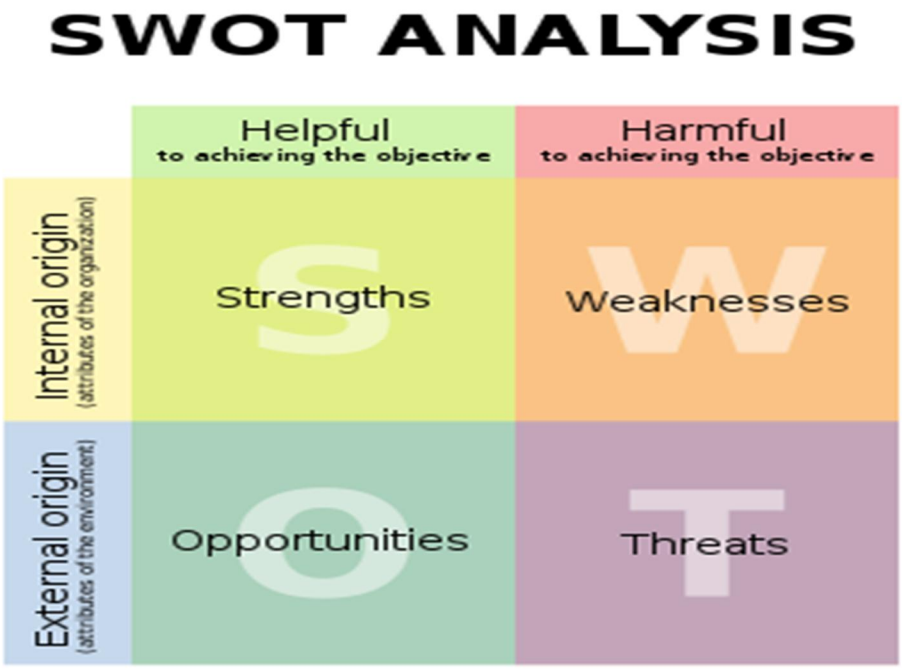
Table.4 SWOT analysis

		Strengths		**W**eaknesses	
		Attract customers	To competitors	Attract customers	To competitors
Opportunities	Markets, sales, clients				
	Competitive advantages				
Threats	Markets, sales, clients				
	Competitive advantages				

External environment [1]

SWOT analysis can be depicted as well by the following figure. [5]

Fig.2. SWOT analysis



The managers should also assess the strengths and weaknesses of the organization to customers

Table. 5. Strengths and weaknesses of the organization to customers

Strengths and weaknesses to customers
Name
Activities and History
Location
Hygiene
Facilities
Intangible resources
Staff
Atmosphere
Corporate Culture
Image associations
Popularity
Originality

[6]

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After making these analyzes, based on the information they can answer the following questions.

1- Where have we been so far and where are we now?

- An objective analysis of the external environment (competitors, threats and opportunities) as well as their strengths and weaknesses is needed.

- A response to what stage of development is the organization is required.

2- Where will we be in the future if we continue our current course of development?

3- Where do we want to be in the next 3-5 years?

- An organization unaware of its mission, scope of activity, goals and objectives, looks like an unmanageable ship.

- Getting from point A (now) to point B (3-5 year endpoint)

-Detailed plans are drawn up, defining the necessary actions and resources.

4- How will we know that we have reached the end point?

- On the basis of predefined values. [7]

After the managers have responded to all the items the analysis must be combined with economic budget purposes. Important role here will be that of the accountants or financial advisors.

This phase is to assess the human resources to date. To answer the above questions, managers need to establish new ones, such as.

Staff- sufficient or not?

Qualification - good or not good?

Motivation - positive or negative?

What prospects for staff alone sees himself as a development of this restaurant? What prospects for the management sees each member of staff?

What is the level of service?

Turnover - great or little? Reasons for it?

Age and sex structure?

Educational structure?

What employees think about the restaurant and how they see its future development?

To assess these parameters must first be adopted criteria that according to management, each employee must meet. At a later stage, these criteria will come and work characteristics.

To explore these indicators and categories would be better to use questionnaires aimed at staff, who have questions of both types (open / closed). Also held individual meetings with each staff member as to prevent factors concern calls can be made with an outside specialist or internal one, to which employees are equally susceptible, and surveys can be anonymous. Can also be applied game models and situations. This is very useful, especially if the staff is young and inexperienced. It would be very helpful if managers seek information about the departure of employees, managers or staff ask or post a poll conducted for his cause.

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A more precise knowledge in languages, or specific area of work will be enjoyed testing. To get real answers, the survey can be anonymous and no identifying signs and issues. Here are some sample surveys, it is a complete version.

3.2 Phase 2 Setting goals

The objectives and tasks are defined by SMART principle

Specific - specific organization units, assistants;

Measurable - it is necessary to determine the parameters for calculating productivity;

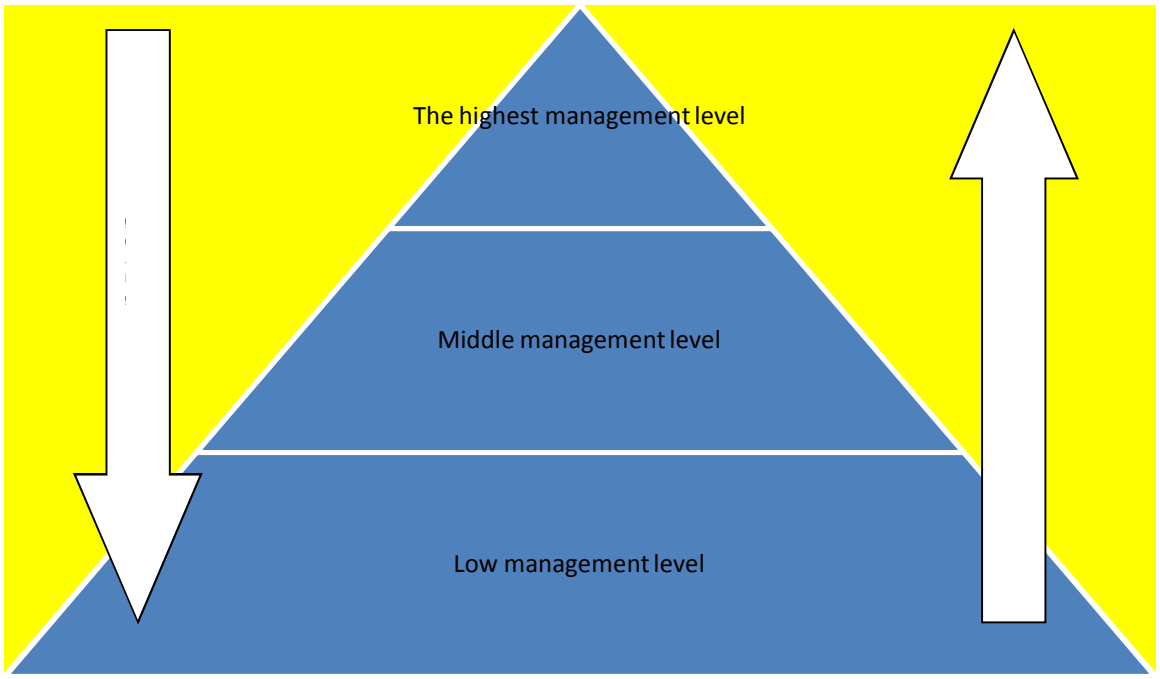
Achievable - achievable, realistic;

Result-oriented - oriented toward results rather than effort;

Time-based - it is necessary to establish time requirements for each goal.

Goals should not be too many on each level. As optimal are considered 3-5 main goals. Goals determine the direction of development and usually are distributed top-down - from the overall corporate-oriented norms and actions.

Fig.3. Objectives, indicators, levels of government



[8]

In turn indicators express the results of actions to achieve the organization goals and they are determined bottom-up. The actual procedure of survey and interview, control, removal of conclusions and making recommendations and working methods can be carried out by an external expert and the internal auditor or by a member of the management staff.

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As metrics into turnover and turnover in the relevant institution, taking into account every 1 and 3 months and an analysis of effectiveness. Other indicators are also observed, some of which have a subjective element, but in most cases must be considered the overall results in order to detect possible problems.

Indicators can include:

- Number of clients served,

- Average client order

- Offering various types of products from the menu (which in most cases can contribute to increased turnover)
- The number of complaints, evaluations given by customers.

In the current case, depending on the policy periods of paid staff, put an average of the turnover in the same period for the previous year (basic turnover) by increasing its value by 5-10% and is given as the minimum required to implement each employee. In its execution without being paid more than the normal wage / salary for his over-30% is given with normal fixed salary before bonus and in excess of the rate of 50% is paid a higher pre-contractual bonus.

Table.6. Turnover - Wage

Turnover for the same period last year (basic) plus /+/ % of increasing	Wage plus /+/ bonus
Basic + **10%**	Normal wage
Basic + **30%**	Normal wage + bonus
Basic + **50%**	Normal wage + bigger bonus
Basic + **100%**	Normal wage + the biggest bonus

Managers should make an analysis and design of postitions, including:

Activity (design) defining, analysis of content, functions and relationships between positions in which are taken into account both technological and economic demands of work and individual needs of the executive. Thus are provided baseline data for determining criterion in the selection and evaluation of staff form which is the basis for appraisal and pay system. The results of the design and analysis of the positions are a necessary component in the process for determining training needs and development. Analysis study and formulate tasks, duties and responsibilities is associated with work skills, knowledge and abilities.

The design of postitions based on the views of managers about how the job should look like. Prepare officials with characteristics in which they appear and some of the requirements to be monitored in the next step of selecting staff. They contain the duties and responsibilities of employees. There have been additions and minor changes to suit most accurate management by objectives.

3.3. Phase 3 Establishment of duties and responsibilities

An important prerequisite for the fulfillment of the strategy is to reach consensus on the obligations and responsibilities of all levels. Effective delegation of authority is essential. If staff will be

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responsible for results, they must be clearly authorized to be given the power they need to perform their jobs. Entitlement is achieved through progressive human resource management, which allows flexibility in determining how staff do their work while giving priority to the measurement, control and manageing of the results.

The activity is enhanced when staff who actually do the work, have power and duties that are delegated to them directly. This type of delegation goes beyond the traditional justification based on effectiveness or efficiency and requires a significant rethinking management systems and practices. Procedures in carrying out recruitment are:

- Defining the requirements for the restaurant category and the number of candidates.

- Using the results of the analysis work to determine the criteria for applicants.

- Finding and attracting candidates.

- Interview with a set.

- Evaluation of the activity "recruitment".

Determining the needs of human resources - analysis and design jobs. Design of job descriptions. Planning the size and structure of human resources

3.4. Phase 4 Measurement of activity and results

Information to be reported will come from:

- Software Program

- Observations of Governors

- Observations of waiters, bartenders and cooks

- Questionnaires to customers

- Surveys and tests to employees

Some information is subjective and therefore are used as many sources to obtain an objective assessment. The control system must be established on the basis of information sources. Data derived from a computer program should be broadcasted in the form of statements and reports, whose features well be required in the selection of software.

Personal conversations are also appropriate to place the end of quarters, because there are features of the organization that may be overlooked or covered by the questionnaires.

Also must first examine and explore the different standards for various products on offer. It's appearance meals / drinks and time to issue orders. Data that can draw on international and Bulgarian experience, which has documented results. It should however be expected values for the time of issuing an order to precisely and stick to them 100% because during the working day is a busy and more relaxed moments, which will certainly affect those numbers.

The restaurant over time will establish and own values and parameters of work which will be more real.
Results are reported every 1 and 3 months, and in the end of the year, and now the analysis is carried out in the next phase.

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3.5. Phase 5 Analysis of performance and results

This analysis is carried out by their managers or supervisors. The analysis is important for control of projects. Measurement and control of information requires an iterative process of evaluation, comparison and interpretation. Once data has been interpreted comes the time for an analysis whether the predefined objectives have been met.

Staff motivation is also an indication how the system works. If employees are more highly motivated than the period before the introduction of management by objectives, it would mean that they paid to their efforts are valued correctly.

3.6. Phase 6 In this phase are included the use of information on activities and results reporting activities and outcomes of the owners and feedback.

These activities could be separated in different phase if the managers consider as a better version.

- Use of information on activities and results

  This information is useful for many purposes, including decision making, improved business processes, documentation of progress and reporting on organizational effectiveness. But a change of plans and strategies can usually be done only by senior management. To make the process effective information must be translated in the form of reports, in most cases is done by a computer program and reported to managers and owners, which takes place in the next phase. This phase will identify problem areas and employees. With those difficulties in work must work hard to train or assist them in any other way to overcome the problems.

- Reporting on activities and outcomes to the owners.

  Reports must be clear and precise and to discuss with their direct managers or executives to understand what is the way of getting to the observed positive or negative results. Owners may not require reporting in a short period as one month or three-quarter, but certainly at least 6 months must be made clear so as not to miss the moment to correct the path or to avoid mistakes.

- Feedback

  This is the final step to a complete range of process management. After the examination and identification of bottlenecks managers and owners make an informed decision on what direction to go change or maintain the course, if the reports are positive. This later formed the basis for the next stage of planning and implementation management. You can change targets if they are too high, because unrealistically high expectations lead to lower staff motivation. Managers are those who may consider, in consultation with managers, employees that need team building, further clarification or otherwise. They will do an analysis of costs and outcomes, whether the budget is covered or there is a need for adjustments. Most importantly, senior management is fully aware of the system results to provide correct and accurate assessment. Otherwise it is best to hire external experts.
  After examining all the phases through which the management by objectives and characteristics of restaurant management in the country will do a little summary of the most important moments in the management by objectives.

4. 7 simple steps to manage through the results

There are seven simple steps to follow in managing the results:

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R Review, current job tasks and responsibilities - they are discussed with each employee and further decisions are being made.

E Estsblish established and measurable outcomes and deliverables. Measurable results are focused on quantity, quality, time, cost, information, methods or steps required to complete a task.

S SPECIFY specific, which is obtained by monitoring the achievements and results in temporary checkpoints and deadlines.

U Use language Use language that avoids subjectivity, ambiguity and interpretation. Clarity and certainty.

L Link Connecting the results and goals for organizational purposes. It is important for managers to devote time to see the importance of staff work and function in the organization of the objectives of the mission, products and services.

T Track intermediate results of execution. Follow-up allows you to assess how the employee is doing compared to previous period.

S Schedule Current evaluation and revision as necessary. This applies to both current and for the formal assessment of the effectiveness of employees in the process of management by objectives.[9]

We should not forget to give immediate feedback. In addition to regularly scheduled reviews of the results should be used every opportunity to provide feedback to employees. [10] Improving labor relations: the maintenance of labor peace between rulers and ruled, between employer and employees. Man is seen as a resource as part of the management of human resources but is also a person who feels has its own interests and goals and is influenced by the work atmosphere. A manager is required except a decent wage, to provide an atmosphere conducive to their subordinates in the workplace and understanding, because it favors to maximize their potential deployment, better work performance and hence improve labor relations.

Management by objectives is proved positive influence method. With proper application leads to increased work efficiency, increase revenue and quality of services, improve staff motivation and faster development of the organization.

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THE ESSENCE OF CUSTOMER CAPITAL IN THE INDUSTRY OF AGRICULTURAL MACHINERY ON THE EXAMPLE OF POLISH COMPANIES

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Abstract

The purpose of this paper is to present the scope and specificity of customer capital in the engineering industry. Customer capital in the study is understood as that part of the intellectual capital which accumulates the company's abilities to influence target markets to the greatest extent. Building lasting relationships with the customer decides on building a competitive advantage of the company. The analysis takes into account the importance of a brand, the level of innovation of farms and the importance of individual contacts with the customer. Also the specificity of the farmers as consumers of agricultural equipment was indicated. The study is based on the example of the Polish market, and the conclusions were supported by research results developed at the request of one of the producers of agricultural machinery in the north – eastern Poalnd.

Key words: *intellectual capital, customer capital, engineering industry, engineering products*

1. INTRODUCTION

The purpose of this paper is to present the scope and specificity of customer capital in the engineering industry. In the study customer capital is understood as that part of the intellectual capital which accumulates the company's ability in influencing target markets to the greatest extent. Customer capital is usually manifested in the intensification of market activities, which create lasting relationships with customers. Companies of the engineering industry are characterized by B2B relationships, which also strengthen the role of customer capital. Also important is the technological complexity of products and strong competition, which largely determine the quality of relationships between entities in the sector concerned. Conclusions were supported by the results of research concerning the evaluation of the innovative potential of one of the major manufacturers of agricultural machinery in the north - eastern Poland.

2. THE ESSENCE OF CUSTOMER CAPITAL

Companies operate under conditions of increasing faster and faster number of products and competitors. This means that there is not shortage of products in the market, but of customers (Kotler, 2004). So the long-term success of the company will result from building lasting relationships with customers based on loyalty. In relationship marketing, which is the basis for modern marketing, the product is not itself, understood as a category of marketing instrument, but a relationship a company creates with the customer. The product cannot be defined in isolation from the relationship, because it

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blurs the difference between the product and service. Relationships with a customer concern all processes and activities that take place after the sale of the product and during its use. Unlike traditional marketing, the essence of the company's activity is not limited to sales of products for which there is market demand, but the use of the company's abilities to build a connection with customers, leading as a consequence to building a competitive advantage. In traditional marketing, the activities of the company aim at delivery of value to a customer, while in relationship marketing, value results from a relationship which is formed between the customer and supplier. According to the principles of relationship marketing, relationships with customers should be profitable, which means that it is necessary to identify profitable customers and the creation of such cooperation which will be beneficial for both parties.

Customer capital is a major determinant of development of marketing activity in a company. It determines marketing possibilities for creating and using customer databases and delivery on their bases products which meet the needs of a customer. As a result, this leads to the creation of the attitudes of loyalty (S.S Liu, Yuh-Yun C., 2007). Since modern marketing in not seen in the categories of activities aimed at attracting buyers, it focuses on the current customer and improvement of services for them (Zeller, 2006; Kovalevskaya - Musial, 2006). Therefore, relationship marketing pays huge attention to the creation of loyalty attitude. In the creation of lasting relationships with customers the specificity of companies is not irrelevant, products they offer as well as the specificity of the industry.

Analysing the topic of customer capital, it should be remembered that the customer still remains the most important element of the company's environment and orientation at customer remains the most important in achieving the objectives of an organization. Contemporary struggle in the market is not only a fight for products, but mainly a fight for customers.

3. THE SPECIFICITY OF THE AGRICULTURAL MACHINERY MARKET

The agricultural machinery market consists of the following entities:

- Manufacturers of tractors, machines and tools used in crop and animal production (including food storage and processing agricultural products),
- Dealers engaged in the distribution of agricultural equipment and spare parts,
- Other companies that provide services to farms,
- Farmers – end-buyers and users of agricultural equipment.

This market is considered to be a strategic market, not only because of the turnover realized. The relationships in this market help to meet the basic needs of the people involved in the production and consumption of food.

The specificity and scope of relations (relationships) in the market of agricultural machinery are formed by the following factors:.

- The close relations between the entities constituting the market, particularly at the level of producers and distributors (taking into account the specificity of the product, manufacturers of agricultural machinery are not able to create their own sales network),
- Professional and complex product,
- Short channels of distribution,

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- High reliance on price factors, including the increasing importance of price competition,
- Strong dependence on external factors, including the system of financing purchases,
- The complexity of the factors determining the choice of product, such as economic factors, technology, origin, brand; but also the importance of psychological factors as well as geography and natural factors – that complexity has a direct impact on the way of offering agricultural machinery.

The agricultural machinery market, because of its role, is an important component in the whole system of agribusiness. This role is largely to provide supplies of the technical equipment necessary for the mechanization of technological processes of food production and the production of certain raw materials for a variety of industries (including chemical, textile, etc.).

The situation in the market of agricultural machinery is shaped by such issues as: the boom in agriculture, production capacity and technological level of the machinery industry, the organization of distribution, as well as prices of technical equipment and their relation to the purchase prices of agricultural produce. At the same time, it has a significant impact on the implementation of technological progress in agriculture

Changes in the structure of farms and subsidies and assistance programs from the European Union as well as a wide range of means of production in agriculture on the market cause a continuous increase in sales of tractors in recent years.

4. THE MARKET FOR TRACTORS IN POLAND

The Polish market for tractors can be described as dynamic because of:

- The increase in realized sales,
- The abundance of brands on offer,
- Parallel functioning of the market of new and used tractors,
- The big competition.

It is estimated that currently Polish farms use about 1,566,000 tractors. This situation is mainly determined by the change of the structure of farms, the system of subsidies, and a wide and diverse market offer. According to recent estimates, sales of new tractors currently achieves 15 thousand units per year. The development of the market for tractors in Poland is also supported by the following facts:

- The increase in prices of agricultural produce (especially high-quality products),
- The growth in demand for bioenergy,
- Structural changes in agriculture (concentration and an increase in area of farms),
- The increase in demand in regions with a low level of mechanization.

The barriers to development of the domestic market for tractor include:

- The high cost of the means of production,
- Fluctuations in the prices of agricultural produce,

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— Climatic instability.

In 2010, purchases of tractors, both new and used, increased. Most of them were registered in the first quarter. Successively, purchases were reduced, and in the third quarter the level of purchases was below average (see chart). Analyzing trends in sales of tractors, its seasonality can be noticed. This confirms a trend according to which in the spring months sales volume exceeds the average annual level. On average, the number of registrations in 2010 totaled to 2,439 units per month, including tractors manufactured in 2010 - 958 units. The lowest sale below the average is for the months of autumn. It should be emphasized that nearly 37% of registered new tractors were produced in 2010. Nearly 17% of the tractors were 2 - 5 years old. Despite a clear upward trend in the purchase of new tractors, it should be emphasized that every ninth tractor is over 20 years old. Approximately 16% of registered tractors reached more than 25 years (see Figure 1).

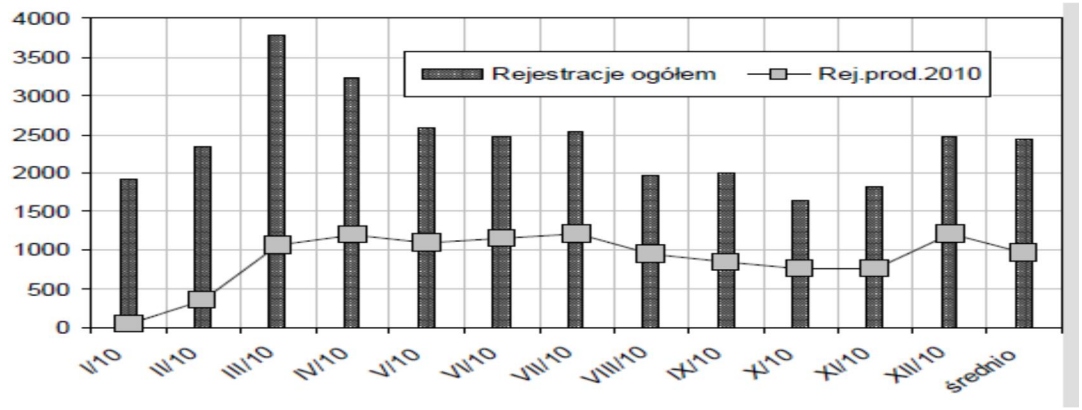

Fig. 1 Registration of tractors in Poland on a monthly basis in 2010 (Total number of registration Registration of tractors produced in 2010)

Source: E. Lorencowicz, *Regional and qualitative differences of the market for tractors in Poland,* the 16th Workshop of Agricultural Economists, Krasnobród, June 2011.

The regional diversity of the market for tractors in Poland strengthens, which is reflected in the structure of purchasing tractors. In the central-eastern and southern provinces tractors with lower capacity and higher average age are purchased, whereas the west and north of Poland buys big and little used tractors. As every year for the past seven years, a major impact on the level of purchases were caused by the EU funds and it is still the major source of financing purchases.

It should be emphasized that the market of new tractors ought to be considered as growing market to a higher extent. The analysis of the number of tractors sold in the years 2001 - 2008 indicates that the market for new tractors grew by an average of 19% year on year. The upward trend was disturbed only in 2008, where in comparison to 2007 there was a 18% drop in sales. Since 2009 there has been seen a rising trend (see table below).

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Table 1. Registrations of agricultural tractors by province

PROVINCE	TOTAL REGISTRATIONS	INCLUDING NEW (PRODUCTION 2009 and 2010)	SHARE of NEW (%)
Dolnośląskie	1224	529	43.2
Kujawsko-pomorskie	2306	1216	52.7
Lubelskie	2653	848	32.0
Lubuskie	481	274	57.0
Łódzkie	2084	1056	50.7
Małopolskie	1364	529	38.8
Mazowieckie	4647	2805	60.4
Opolskie	795	432	54.3
Podkarpackie	947	325	34.3
Podlaskie	3113	1560	50.1
Pomorskie	1379	693	50.3
Śląskie	774	401	51.8
Świętokrzyskie	973	466	47.9
Warmińsko-mazurskie	1033	609	59.0
Wielkopolskie	4219	2389	56.6
Zachodniopomorskie	471	397	53.6
Total	28733	14529	50.6

Source: as above.

Table 2 Sales of new tractors in Poland in the years 2001 - 2010 in thus. pieces

Year	The sales volume	Sales increase (+) / sales decrease (-) as compared to the previous year
2001	4523	-
2002	4614	+2%
2003	7491	+62%
2004	9983	+33%

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2005	10946	+10%
2006	13701	+25%
2007	16578	+21%
2008	13654	-18%
2009*	13900	+2%
2010*	14200	+2,2%

* - Approximate values

Source: Martin Jacobs' report, 2011.

It should be be noted that the domestic market for tractors is a sensitive market because of:

- It requires a high degree of stability of the instruments related to support the purchase. According to many experts, the collapse of the market in 2008 may have been related to delays in the transfer of funding from the EU funds.
- From the farmers' point of view, a strong stimulus is often not actual but rather superficial product differentiation, which a tractor is. The farmer is not always able to reliably indicate the benefits that may result from the purchase of new machinery, paying more attention to the stereotypical reasons that determine the purchase.
- The volume of sales realized to a large extent depends not only on the technical parameters of the tractor, but on the trade efficiency of dealers..

Taking into account the regional conditions of the demand for tractors with a particular capacity, this demand for the greatest power was in the provinces:

- Warmińsko – mazurskie
- Lubuskie
- Dolnośląskie
- Opolskie
- Zachodniopomorskie.

Tractors with the lowest power were purchased by farmers from the provinces:

- Małopolskie
- Świętokrzyskie
- Podkarpackie
- Lubelskie.

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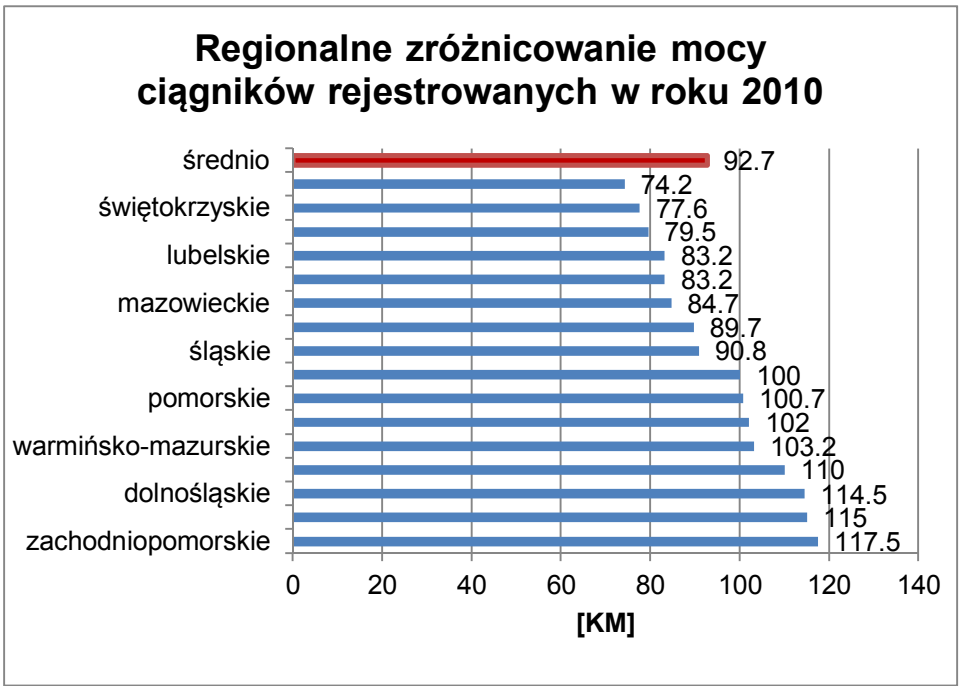

Fig.3 Regional diversification of the power of tractors registered in 2010

Source: as above.

Detailed verification of the level of regional demand for tractors with a specific power level indicates the following trends:

- The highest demand is for tractors from 70 to 100 HP in almost all regions. In Mazowieckie Province as many as 919 tractors with this power level were registered in 2010 for the first time. There were 425 tractors with the power below 70 HP were registered in this region, due to the high share, compared with other regions, of vegetable and orchard farms;
- In Wielkopolskie Province more powerful tractors from 100 to 150 HP are more popular. In the first half of 2010 there were 487 tractors in the given power range registered. In the range above 150 HP in the analyzed region 82 tractors were registered.
- In Dolnośląskie Province 102 tractors with power range 100 to 150 HP were recorded in the first half of 2010. For comparison, the share of smaller tractors from 70 to 100 HP was lower by 30%. In the analyzed region tractors with power above 150 HP were popular.

Statistical data for the years 2000 - 2009 show an increase in the volume of the market, expressed as the number of tractors in the Polish farms. It is estimated that the number of tractors in 2000-2009 increased on average by 2.1% year on year. Assuming a similar rate of growth in next years, forecasts were calculated for the years 2010-2011 (see Figure 3).

On this basis, it was concluded that the market will be still growing. In 2012, the number of tractors in agriculture may reach 16.8 thousand pieces. It should be remembered that the probability of estimated forecasts depends on the extent of the impact of the factors influencing the market. The most important are the following:

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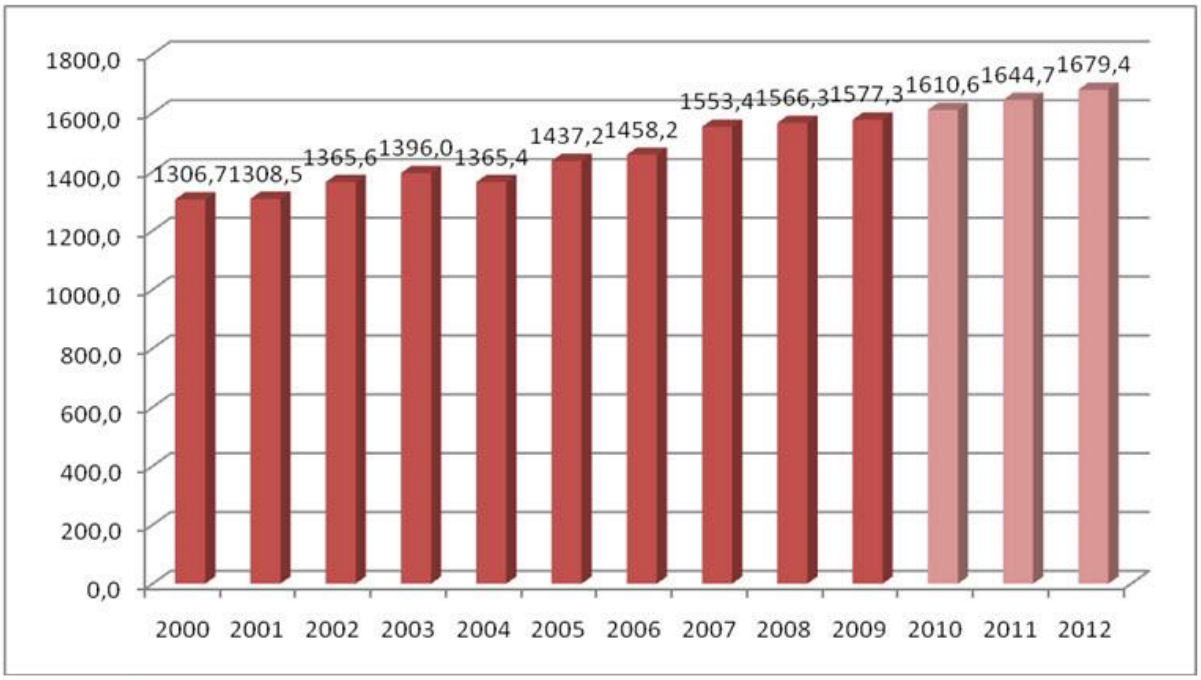

Fig. 4 The number of tractors in agriculture in years 2000-2009 and forecasts for years 2010-2012

Source: Own calculations based on the Central Statistical Office data for the years 2000 – 2009.

- Development of economic situation in agriculture
- Deepening of positive structural changes in agriculture
- Inclinations to changes and risk taking - particularly in the context of technological changes
- Changes in the mentality of farmers in relation to Polish producers of tractors.

The above forecast referred to the entire market for tractors, analyzed in terms of both segments of new and used tractors. It should be empasized that the developmental market is the one which expresses the growing demand for a new product. This results form the shortening of a product life cycle and the changing needs of target markets. The market for tractors is specific. In some areas it is different from the generally accepted trends. It is supported by the following facts:

- Many domestic farmers regard a used western product as a better one, although it is often not adapted to the needs of domestic farms,
- There is strong competition both at the level of actual product and brand image.

Data on sales of new tractors indicate that the market for tractors in Poland is a perspective market. Despite the dramatic collapse of sales in 2008, it is estimated that in 2013 sales of new tractors in Poland will reach 18 000 units (see table).

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5. THE SPECIFICITY OF THE CLIENT AS A DETERMINANT OF CUSTOMER CAPITAL IN THE INDUSTRY OF AGRICULTURAL MACHINERY[24]

Customer capital in the industry of agricultural machinery is determined by the specificity of the customer. Farmers are a distinctive segment of the market. Meeting the needs of this group of customers is a demanding process. Knowledge about the products and the market is often shaped by stereotypes.

A brand is a determinant of customer capital. In today's trade, also of the means of production, is becoming increasingly important. The latest data (for the year 2010 and first quarter of 2011, see table), confirm the certain trends revealing in the selection of tractors. The most important include:

- Traditionalism, including the stereotypical approach to the purchase. Still the most popular are the largest producers of western brands, such as John Deere, Case, New Holland. This often reflects stereotypical attitude of farmers to the product - the western is better.
- Practicality - low price and easy operation are the most important. This applies in particular to the Belarusian tractor brand, Belarus.
- Finding new - statistics confirm that more and more farmers decide to purchase new Polish tractors. The reasons for the purchase decision can be found in the growth of farmers' awareness of Polish products, or in seeing more benefits from the purchase of a new tractor than used equipment.

The most popular brands in 2010 among Polish farmers were the brands of western producers (see diagram):

- New Holland
- Zetor
- John Debre
- Case Ih
- Deutz – Fahr.

The share of Polish brands in sales is still small, but increasing trends are noticeable. The recognizable Polish brands of tractors include:

- Ursus

[24] Conlusions were supported by results of research on the market analysis in connection with the completion of the first stage of the project related to the extension of the product offer in one of the companies in the agricultural industry in the north – east Poland, co-financed by the European Union under the measure 1.4 (the contractor IBiA VIVADE sp. z o.o. in Bialystok, August 2011). The support for specific targeted projects of the priority axis 1 Research and development of new technologies and the measure 4.1 Support for implementation of results of R & D of the priority axis 4 Investments in innovative projects of the Innovative Economy Operational Programme 2007-2013. The study was prepared on the bases of the analysis of already existing data as well as surveys and panel research conducted among national dealers of agricultural machinery. The high level of knowledge on market and products among the respondents allowed the generalization of conclusions.

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— Farmtrac
— Farmer
— Pronar.

Table 3 Sales of tractors by brands in the first quarter of 2011

Item No.	Brand	Sales in the first quarter of 2011	The percentage share: sales in the first quarter of 2011
1	Belarus	551	16.3%
2	Case IH	262	7.67%
3	Claas	74	2.17%
4	Deutz-Fahr	222	6.50%
5	Farmer	27	0.79%
6	Farmtrac	112	3.28%
7	Fendt	103	3.01%
8	Foton	0	0.00%
9	John Deere	446	13.05%
10	Kubota	52	1.52%
11	Lamborghini	31	0.91%
12	Landini	31	0.91%
13	Massey Ferguson	139	4.07%
14	McCormick	31	0.91%
15	New Holland	551	16.13%
16	Pronar	68	1.99%
17	Same	23	0.67%
18	Ursus	85	2.49%
19	Valtra	73	2.14%
20	Zetor	366	10.71%
21	Others	171	5.00%
Total		3,417	100%

Source: E. Lorencowicz, *Regional and qualitative ....., op. cit.*

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The reasons of such situation can be seen in:

- Mentality of the farmers who are convinced of better quality of western products;
- A strong brand positioning of the western tractors on the Polish market - western brands are clearly associated with high quality,
- Growing importance of psychological satisfaction in the process of decision-making to purchase and use – possessing a western brand is more elevating from the farmer's point of view,
- The lack of clear information system on the benefits of buying Polish tractors,
- The lack of cooperation of Polish producers of tractors in the popularization of domestic brands among farmers.

Western tractor brands are the most popular both in new and used machinery. However, a trend is noticeable in the growing sales of domestic brands of tractors on the Polish market. This is an important symptom of market development from the perspective of domestic producers. It may reflect the activity of their sales, increased marketing efficiency, especially in the construction of distribution and promotion networks.

It turns out that the brand, even in the market of the means of production may perform apart from quality and warranty functions, also a psychological function. However, brands of western manufacturers are the most recognizable and identified with the highest quality. It was indicated at the same time that often emotional approach to the purchase of the tractor causes a situation that the real needs of a farm and farmer are not taken into account. On the one hand, it is a threat to Polish brands of tractors, but on the other a chance for development because of the ease in positioning the offer and the creation of market gaps. In this regard, attention was paid to the functioning stereotypes associated with the perception of western brands, but also some Polish brands in the opinion of target markets. Besides, it was noted that sales of western brands is more supported by western companies. The discussion also brought to the conclusion that the level of farmers' knowledge about specific brands is often very superficial.

The price is also very important in building a proper relationship with the customer. In particular, it is an important factor in the decision making process of the purchase of production goods. From the perspective of both the manufacturer and dealer, development of proper pricing policy is often the measure of market success. The pricing policy includes:

- The system of creation of the right price – reflecting the real value and some idea of the product in the mind of the buyer;
- The system of discounts and rebates, attractive from the viewpoint of dealers (as well as end users of tractors);
- The system of loan sales.

For the farmer, the end user of the tractor, the price serves as:

- The criterion for product selection,
- Quality information,
- Information on the level of technological advancement,

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— Brand identification.

It should be noted that in connection with the functioning system of financial support to farmers, the price is not always the primary selection criterion. The importance of prices in the market for tractors is growing due to:

— High level of domestic and international competition,

— Increasing access to distribution channels,

— The existence of a developed market for used tractors,

— Stereotypes operating clearly in users' awareness of western brands of tractors as expensive and better and eastern as cheap and less technologically advanced.

Such a developed market, particularly in the case of domestic producers, requires an orientation on non-price competition instruments. This concerns in particular:

— Creation of effective and flexible dealer networks, mainly integrated distribution channels,

— Creation of loyalty programs,

— A clear product positioning in the market, including the emphasis on distinctive competencies,

— Building the profile of a product and its brand, specifically adjusted to the needs and characteristics of Polish agriculture.

Apart from the brand and price, an inclination to increase the level of innovation in households, thereby influencing the purchasing decisions, is a determinant of customer relationships. Due to changes in the structure of farms and thereby upgrading the intensification of production processes is necessary to strengthen the competitiveness of the farm. So from the perspective of domestic producers, it is necessary to provide a high level of satisfaction based on new technologies. As carried out research show, in the opinion of 61% of dealers an increase in the level of innovation of the farm is a factor significantly influencing the purchasing decisions of farmers (see chart).

Building relationships with customers which is the main determinant of customer capital requires individual contacts with the customer. It is also important to provide a distribution network enabling individualized contacts. This situation is also confirmed by the carried out research. The vast majority of respondents, as many as 69%, rated current trade relations with the dealer as having a significant impact on the decision to purchase a new tractor. 8% of respondents have indicated a very significant level. 15% have rated this factor at the avarage level, and 8% at the lowest level (Fig. 4).

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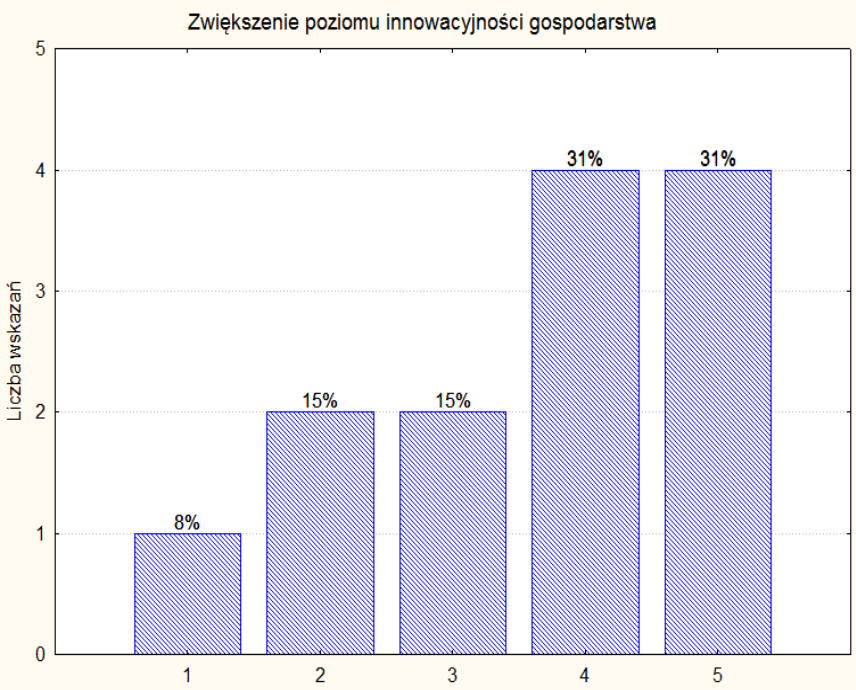

Fig.4 Assessment of increase in the level of innovation in the farm as a factor influencing the purchasing decision

Source: own elaboration.

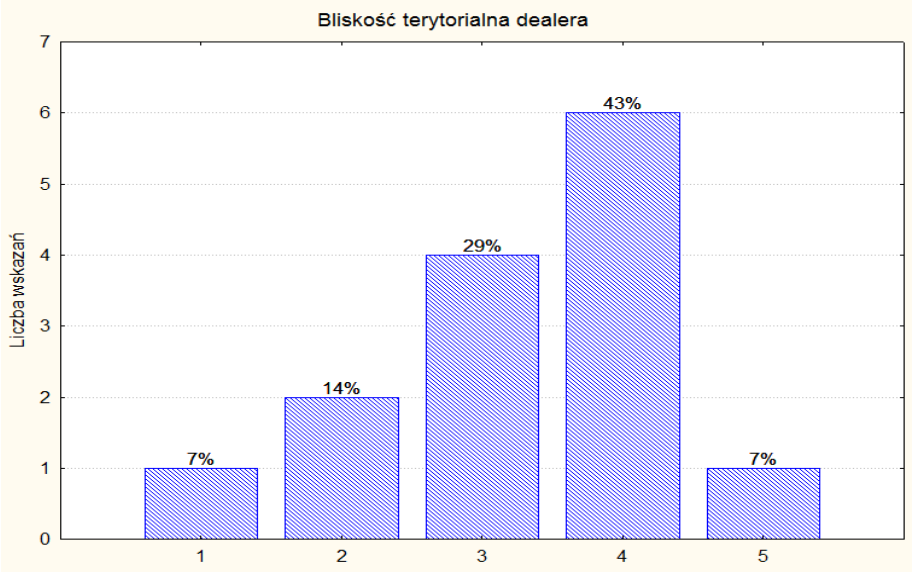

Fig. 5 Assessment of the territorial proximity of the dealer as a factor influencing the purchasing decision in the buying decision

Source: own elaboration.

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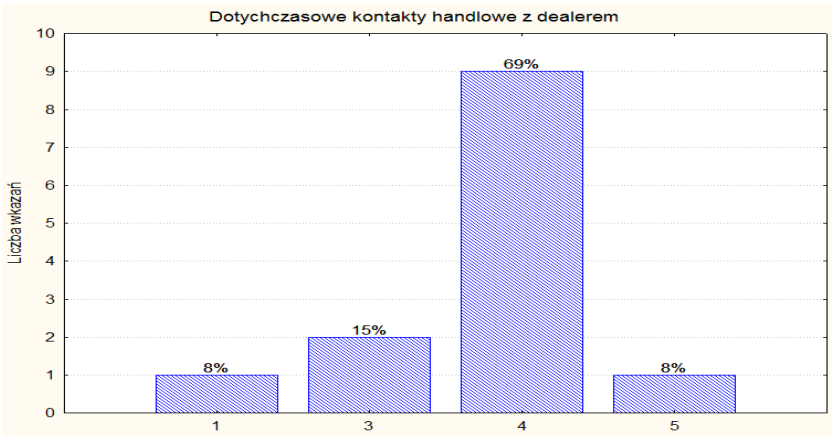

Fig. 6 Assessment of the existing trade relationships with the dealer as a factor influencing the purchasing decision

Source: own elaboration.

CONCLUSIONS

In companies of the engineering industry customer capital, and thus building lasting relationships with customers, is an important factor in achieving competitive advantage. In a dynamic market environment, a competitive advantage is not determined only by an innovative product, but mainly by the ability to get into the minds of the customers. A Polish recipient and user of agricultural machinery is demanding, and his choice is determined largely by stereotypes and knowledge shaped by tradition. A brand, increasing innovation of households and creation of sales systems strengthening individual contacts with the customer are primary in creating the proper relationships with the customer in the market of agricultural machinery.

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BEFORE THE EURO INTRODUCTION: WHAT CAN BE LEARNT

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Abstract

Every country entering the European Union is expected to give an approval for the eurozone's membership at certain point in time, after reaching the Maastricht criteria (with an exception of Denmark and the United Kingdom). Once permission is given, the changeover is planned. During the changeover it is important that an emphasis is placed on problematic areas experience in "older" members of the Economic and Monetary Union, one of them is an issue linked to the directives related to notes and coins. Although people usually deal with new bills without major problems, we can not say the same of the coins. Furthermore, a research has shown problems with the price estimation. There are several ways that people use to correctly estimate if the price of a new currency for a given product or service is appropriate, overvalued or undervalue. The existence of the conversion process of the price in the original currency into the euro was noticed after a long time after the introduction was confirmed. This represents a proof of a long process of adaptation to the new currency and is said to slow down the building of the confidence into the euro. This article deals with mention problematic areas in Slovakia 3 years after the changeover.

Key words: *the eurozone, the euro, the confidence, the eurocoins, the euronotes, dual pricing, the eurocalculator.*

1. INTRODUCTION

June 2008 represents an important milestone in lives of Slovak population. The Slovak Republic was approved by the European commission to become 16th member of the Eurozone after reaching the Maastricht criteria. From a technical point of view the whole process was not complicated, yet a new currency led to a cultural change. Even though many people had already experienced the euro currency while travelling, for many more it was an utter novelty. Nevertheless both groups started to go through a long process of adjustment that consists of "thinking" in a new money terms and finishes with a behavior that does not refer back to an old currency. Needless to say, based on experience from other Eurozone countries (Marques and Dehaene 2004; Missier et al. 2007; Ranyard 2007), it will take a long time.

Confidence in the euro has been shattered for the time being. There have been problems with the situation in Portugal, Ireland, Italy, Greece and Spain (known as the PIIGS countries) who can not manage their public finance effectively anymore. In addition during 13 years of existence of the single currency it has been found out by researchers that the presence of certain factors hinders the confidence in the euro. Their elimination might lead to higher trust into the euro. According to Hoffman et al (2007), they can be summarized into five main areas:

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1. Attitudes in relation to the euro - and their influence by the elements of national and European identity.
2. The process of the euro introduction - or "logistics" of the whole operations and views on how should change take place and who is responsible for it
3. Euro illusion - a phenomenon that is associated with lower nominal prices of goods and services in euros than in the original local currency,
4. Perceived change in prices - many people of the EMU believe the price increase is due to the introduction of the euro.
5. The process of adaptation to the euro - is composed of the process of getting used to the new banknotes and coins, and the development of intuition for new prices and strategies that people use to convert.

Due to persistent problems in the euro area we are widening the mentioned areas by another related to public finance problem of the PIIGS countries (Maťovčíková, Suhányiová, Suhányi, 2011). It is evident that this area must be paid attention to as the threat of collapse of the euro area member reduces the credibility of the whole monetary union and undermines the common monetary unit. We focus on the fifth problem area.

2. ADAPTATION TO THE EURO – THE THEORETICAL BACKROUND

During the changeover it is important that an emphasis is placed on the directives related to notes and coins. Although people usually deal with new bills without major problems, we can not say the same of the coins. Hofmann et al (2007, p. 378) gives three main reasons: (1) coins are heavier than bills and embody a lower face value, (2) the lowest note in the amount of € 5 is much higher than face value as the smallest note in f. e. Austrian schillings, which was at 20 Austrian schillings - around 1.45 euro, and (3) people have in their wallets far more the euro coins than in the original currency before. These facts led the authors to the finding that people lose control of everyday spending because of the confusion and difficulties with coins, and therefore propose to cancel 1 and 2 cent coin and 2 euro coins to replace with the paper equivalent. The problem was not in defining the coins, but in their handling. Significant role in getting used to new coins was played by the euro coin pack distributed by government and consisting of coins of all denominations.

The research has shown that there are several ways that people use to correctly estimate if the price of a new currency for a given product or service is appropriate, overvalued or undervalued. According to Hofmann et al (2007), the strategies can be divided into 4 groups: (1) the intuitive strategy, (2) the conversion strategy, (3) the anchor strategy (4) the strategy of market value. The authors reported different levels of accuracy, as well as different levels of intensity. According to the results of their research, people generally use more than one strategy, yet the dominant strategy was the one using market value. The intuitive strategy is most often used by those who quickly adapted to the euro, evaluated the progress of the changeover as smooth and the introduction of the euro did not affect their purchases. Consumers who preferred the conversion strategy recalculated all rates in order to know exactly how much everything costs. Although this strategy is the most accurate, people felt it as time consuming and had the impression that it was difficult to cope with the advent of the euro. The essence of the anchor strategy consisted of memorizing the prices of basic products such as meat, milk, bread, petrol, fruit and vegetables, allowing them to easily remember the prices of other goods. This strategy helped them seamlessly to forget the original currency and to adapt to the new currency

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quickly. The strategy of market value is in many ways similar to the strategy of the anchor, but is not based on knowledge of prices of specific products, but a market value – f.e. 100 Australian shillings is about 7 euros, thus people learn a new system of values by heart. The strategies are described in detail in Table 1.

Lemaire (2007, p. 385) conducted research in France. His aim was to see the use of strategies prior to the euro introduction and 5 and a half years after its circulation. The conversion rate was set at 1 euro = 6.55957 French francs and people use more ways how to convert the euro prices in the original currency in order to see the product value. Up to 34% of respondents used decomposition, where they separately recalculated tens and units of euro prices by multiplying the number 6 and then adding them. A further 25% applied the transformation, which rounded off the euro prices and multiplied them by number 6. In addition 22% of the respondents calculated the prices directly, 12% replaced in prices units by zero and the result was multiplied by 6, 5% multiplied the total value of euro by 6 without separation units and tens, and the remaining 2% used long-term memory, because they managed to memorize all prices. Precision of calculations was improved over time what led to the elimination of some strategies. The first place was kept by decompositions, some people used euro calculators and the least problems were seen in children who used long-term memory. The existence of the conversion process of the price in the original currency into the euro was noticed after a long time after the introduction what confirmed a long process of adaptation to the new currency. The author stressed the need to search for appropriate strategies and inform the public about their use. Although it may not be accurate, the aim should be to facilitate the conversion.

The type of strategy	Characterization
The anchor strategy	Prices of frequently bought products are learnt and then used to evaluate prices of other products.
The conversion strategy	Every price is converted to the old currency by means of either exact calculation or an approximate conversion rule.
The intuitive strategy	Comparison with the old currency is not made a people intuitively buy what they need.
The market value strategy	The associations are made between some values in the new and old currencies.

Table 1: Strategies used to develop the value system after the currency change
Source: MAŤOVČÍKOVÁ, 2010

Marques and Dehaene (2004, p. 153) compared techniques of calculations in Austria and Portugal a half years after the introduction of a new monetary unit. They assumed the existence of memorizing prices and calculations according to the set conversion rate, in the case of Austria 1 euro = 13.7603 Austrian schillings in the case of Portugal, 1 euro = 200.482 Portuguese escudos. It has been confirmed that although the Portuguese had an easier option of calculation due to simple conversion rate of 200, they were more prone to errors than the Austrians, who mainly used intuition and the prices changed in mind. When recalculated using the conversion rate in Austria, the results were accurate even in presence of more complicated course, when the accuracy was more pronounced for

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frequently purchased products. It is believed that this issue is related to a slower adaptation to the new currency in Portugal.

Ranyard (2007, p. 317) found significant reduction of the number of new techniques for converting the original currency in Ireland, where the exchange rate was fixed at 1 euro = 0.787564 Irish pounds after switching to the euro. Generally positive results justify the smooth adoption of the euro in the country and ability to adapt fast to new currency especially for young people who had no problems with conversion. The author indicates that the long term conversion leads to slow adaptation that has been experiences in f. e. Italy.

3. THE HYPOTHESES AND METODOLOGY

HYPOTHESIS 1: We assume that the ease of handling the euro coins and notes is related to the type of the job.

HYPOTHESIS 2: We assume that there is a correlation between the type of conversion used to compare the euro prices and original prices in Slovak crowns and the type of employment.

The research was conducted in Slovak Republic in March 2012 among the population older than 18 years. The sample of 522 respondents was drawn by stratified selection, which is the preferred method in determining public opinion polls. The basic set was broken down by major characters, in our case age, gender and employment type. The significance of the result was tested by chi-square value and we used a Likert scale. The structure of the survey sample is clearly visible in the following frequency table.

Item		Scale		Frequency	%
1	**Gender:**	1	Male	252	48.28
		2	Female	270	51.72
			all	522	100.00
2	**Age:**	1	18-24 years	111	21.26
		2	25-39 years	169	32.38
		3	40-59 years	152	29.12
		4	>60 years	90	17.24
			all	522	100.00
3	**Type of job:**	1	Student	87	16.67
		2	Manual job	124	23.74
		3	Brain work	150	28.74
		4	Entrepreneur	93	17.82
		5	Retired	68	13.03
		6	Different	0	0.00
			all	522	100.00

Table 2: Distribution of respondents

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4. THE RESULTS

1.1 HYPOTHESIS 1: We assume that the ease of handling the euro coins and notes is related to the type of the job.

Respondents expressed a high % agreement with the statement that the banknotes are handled easily with, positively responded 86.21% of respondents (Tab. 3).

It is easy to use euro notes.			Yes 1	Don't know 2	No 3	All
Type of employment	1 Student	Frequency	77	2	8	87
		%	88.51%	2.30%	9.20%	100.0%
	2 Manual job	Frequency	92	15	17	124
		%	74.19%	12.10%	13.71%	100.0%
	3 Brain work	Frequency	129	14	7	150
		%	86.00%	9.33%	4.67%	100.0%
	4 Retired	Frequency	89	3	1	93
		%	95.70%	3.23%	1.08%	100.0%
	5 Entrepreneur	Frequency	63	0	5	68
		%	92.65%	0.00%	7.35%	100.0%
All		Frequency	450	34	38	522
		%	86.21%	6.51%	7.28%	100.0%

Table 3: Distribution of an opinion on euro notes handling

Strong agreement with the statement confirmed 95.7% of pensioners; on the other hand most problems had a manual handling workers, only 74.19% proved trouble-free handling. Chi-square value reached 33.3465, which at p = 0.000053 confirmed the significance level of 0.01. We can therefore say that the euro banknotes are handled easily with.

Another testing showed that respondents consider easy handling with euro coins, but only slightly compared with a negative response (Tab. 4). Although the positive responses to some extent outweigh because 46.74% agree with the statement and 45.6% disagree, we recorded a significant discrepancy in the respective groups. Up to 56.99% of retired and 49.19% manual workers disagree with the statement, while 52.94% of entrepreneurs had tendency to a positive response. The least indecisive about the answer to this question are students (2.3%) and most entrepreneurs (16.18%). This part of the hypothesis has been confirmed as the chi-square reached 22.4496, which is at p = 0.004148 confirmed at 0.05 level of significance.
Hypothesis 1 has been confirmed. We have shown that the euro coins and the euro notes are easy to handle with and there is a link between responses and the type of job. Even though the percentage of positive and negative responses with the regards to the coins was nearly identical, we observed a significant discrepancy among the group as for this area.

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1.1 HYPOTHESIS 2: We assume that there is a correlation between the type of conversion used to compare the euro prices and original prices in Slovak crowns and the type of employment.

Up to 69.34% of respondents admit that they are still converting at purchasing (Tab. 5), the strongest representation have retired (almost 85%) and entrepreneurs (76%).

It is easy to use euro coins.			**Yes 1**	**Don't know 2**	**No 3**	**All**
Type of employment	1 Student	Frequency	43	2	42	87
		%	49.43%	2.30%	48.28%	100.0%
	2 Manual job	Frequency	52	11	61	124
		%	41.94%	8.87%	49.19%	100.0%
	3 Brain work	Frequency	76	13	61	150
		%	50.67%	8.67%	40.67%	100.0%
	4 Retired	Frequency	37	3	53	93
		%	39.78%	3.23%	56.99%	100.0%
	5 Entrepreneur	Frequency	36	11	21	68
		%	52.94%	16.18%	30.88%	100.0%
All		Frequency	244	40	238	522
		%	46.74%	7.66%	45.60%	100.0%

Table 4: Distribution of an opinion on euro notes handling

While shopping, I always convert from the euro prices to the Slovak crowns and vice versa.			**Yes 1**	**Don't know 2**	**No 3**	**All**
Type of employment	1 Student	Frequency	45	2	40	87
		%	51.72%	2.30%	45.98%	100.0%
	2 Manual job	Frequency	86	3	35	124
		%	69.35%	2.42%	28.23%	100.0%
	3 Brain work	Frequency	100	8	42	150
		%	66.67%	5.33%	28.00%	100.0%
	4 Retired	Frequency	79	0	14	93
		%	84.95%	0.00%	15.05%	100.0%
	5 Entrepreneur	Frequency	52	0	16	68
		%	76.47%	0.00%	23.53%	100.0%
All		Frequency	362	13	147	522
		%	69.34%	2.50%	28.16%	100.0%

Table 5: Opinion on conversion

The least convert students (approximately 46%). Since the chi-square reached 32.7044 and p = 0.000070 the significance was proved at the significance level of 0.01.We also confirmed the significance is of age related (Table not shown here). The order is as following: the most convert those

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of age over 60 years (83%), then 40-59 years (77%), followed by 25-39 years (65%) and 18-24 years (54%). Chi-square reached 33.2216, p = 0.000122, therefore the statement has been confirmed on the significance level of 0.01.

By testing, we also demonstrated the presence of certain strategies that serve to create a value system. In general it may be argued that in Slovakia the use of intuitive strategies was not confirmed (Tab. 6). Nearly 55% of respondents said they did not use it and mainly the retired disagreed (63%) and manual workers (59%). This strategy is especially preferred by students (57%). Chi-square test reached 17.4418, p = 0.025824, which has proved a link to the significance level of 0.05.

I do not compare the prices in euros with those in Slovak crowns, I intuitively buy whatever I need.			**Yes 1**	**Don't know 2**	**No 3**	**All**
Type of employment	1 Student	Frequency	50	0	37	87
		%	57.47%	0.00%	42.53%	100.0%
	2 Manual job	Frequency	48	3	73	124
		%	38.71%	2.42%	58.87%	100.0%
	3 Brain work	Frequency	66	5	79	150
		%	44.00%	3.33%	52.67%	100.0%
	4 Retired	Frequency	34	0	59	93
		%	36.56%	0.00%	63.44%	100.0%
	5 Entrepreneur	Frequency	29	0	39	68
		%	42.65%	0.00%	57.35%	100.0%
All		Frequency	227	8	287	522
		%	43.49%	1.53%	54.98%	100.0%

Table 6: The intuitive strategy according to employment

At the same time we managed to confirm the significant result depending on the sex of a respondent (Fig. 1).

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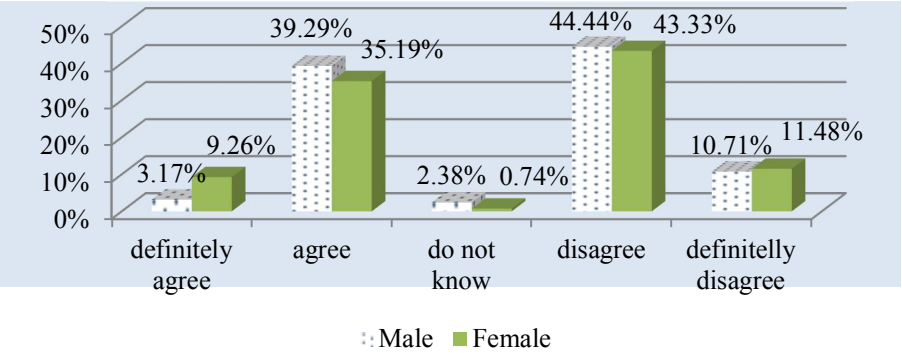

Figure 1: The intuitive strategy according to sex

Women are significantly more inclined to radical positive answer than men. The chi-square test result equal to 10.617 and p = 0.031223, what proved the significance on the significance level 0.05.

In addition a conversion strategy was confirmed to be used in Slovakia (Tab.7). Up to 57.66% of respondents confirmed its use, mainly seniors (72%) and entrepreneurs (almost 65%). Students do not prefer using this strategy; answer of 59% was negative. Chi-square reached 32.9341, which is at p = 0.000063 confirmed on the significance level of 0.01.

I use the exact conversion rate to see the prices in euro and Slovak crowns.			**Yes 1**	**Don't know 2**	**No 3**	**All**
Type of employment	1 Student	Frequency	31	5	51	87
		%	35.63%	5.75%	58.62%	100.0%
	2 Manual job	Frequency	69	4	51	124
		%	55.65%	3.23%	41.13%	100.0%
	3 Brain work	Frequency	90	8	52	150
		%	60.00%	5.33%	34.67%	100.0%
	4 Retired	Frequency	67	0	26	93
		%	72.04%	0.00%	27.96%	100.0%
	5 Entrepreneur	Frequency	44	0	24	68
		%	64.71%	0.00%	35.29%	100.0%
All		Frequency	301	17	204	522
		%	57.66%	3.26%	39.08%	100.0%

Table 7: The conversion strategy

Further testing strategy was the anchor strategy. Up to 57.85% of respondents answered positively to the statement (Tab. 8), and again the strategy was applied mostly by pensioners (nearly 68%) and businesses (63%). The strongest opposition was expressed by manual workers (35%). Chi-square reached 21.9791, p = 0.004955, therefore the significance has been proved at the significance level of 0.01.

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It might be argued that the respondents agree with the simplicity of calculations (Tab. 9). Up to 72% confirmed that the conversion is simple, the chi-square = 15.5636, p = 0.049070 therefore the finding has been confirmed at the significance level of 0.05.

I use the prices of the frequently bought products as the anchor and then I made my decision.			**Yes 1**	**Don't know 2**	**No 3**	**All**
Type of employment	1 Student	Frequency	43	17	27	87
		%	49.43%	19.54%	31.03%	100.0%
	2 Manual job	Frequency	72	8	44	124
		%	58.06%	6.45%	35.48%	100.0%
	3 Brain work	Frequency	81	30	39	150
		%	54.00%	20.00%	26.00%	100.0%
	4 Retired	Frequency	63	7	23	93
		%	67.74%	7.53%	24.73%	100.0%
	5 Entrepreneur	Frequency	43	6	19	68
		%	63.24%	8.82%	27.94%	100.0%
All		Frequency	302	68	152	522
		%	57.85%	13.03%	29.12%	100.0%

Table 8: The anchor strategy

It is easy to convert from euros into Slovak crowns.			**Yes 1**	**Don't know 2**	**No 3**	**All**
Type of employment	1 Student	Frequency	70	5	12	87
		%	80.46%	5.75%	13.79%	100.0%
	2 Manual job	Frequency	97	5	22	124
		%	78.23%	4.03%	17.74%	100.0%
	3 Brain work	Frequency	108	10	32	150
		%	72.00%	6.67%	21.33%	100.0%
	4 Retired	Frequency	58	5	30	93
		%	62.37%	5.38%	32.26%	100.0%
	5 Entrepreneur	Frequency	43	3	22	68
		%	63.24%	4.41%	32.35%	100.0%
All		Frequency	376	28	118	522
		%	72.03%	5.36%	22.61%	100.0%

Table 9: The easiness of the conversion

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Respondents had a possibility of using different tools to ease the conversion process (Fig. 2). Dual pricing was strongly preferred (54%), followed by eurocalculator (15%); on the other hand 17% of respondents confirmed they did not convert the prices.

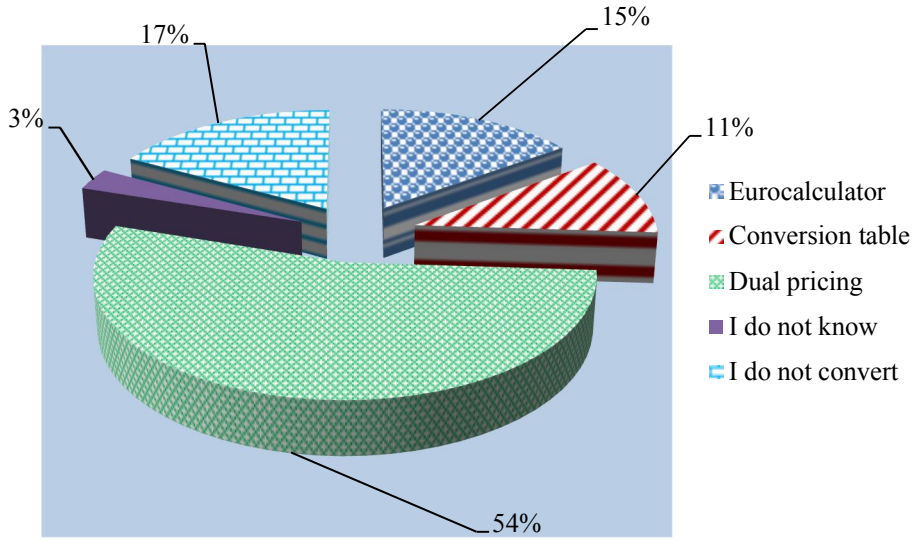

Figure 2: Conversion tools

Opinion on dual display of prices differed across age groups (Fig. 3). Up to 100% of respondents over 60 years expressed positive view. Chi-square p = 14.8199, p = 0.021705, a relationship has been confirmed on the significance level of 0.05.

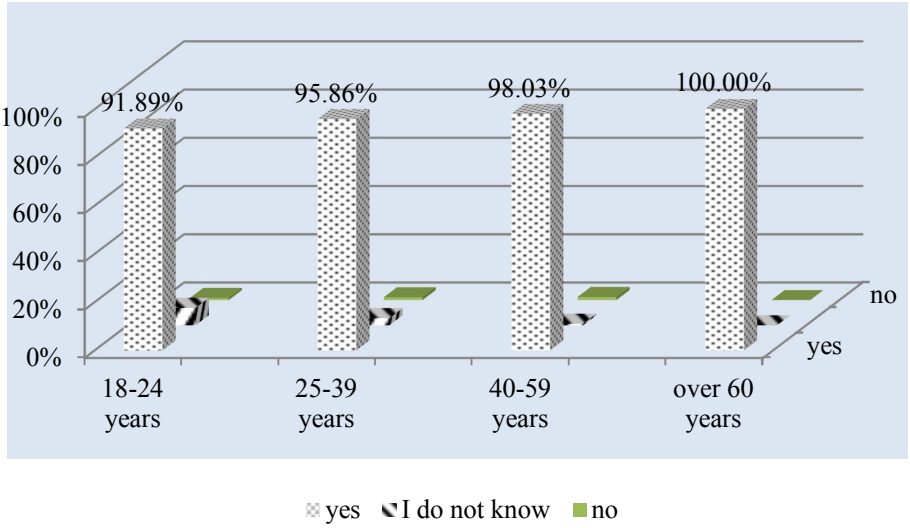

Figure 3: Dual pricing according to age

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Considering tools, 15% of respondents preferred an eurocalculator. Overall, 64.18% favored the view that the handling of the eurocalculator was useful (Tab. 10). Most inclined to the use of this device were entrepreneurs (91%), then seniors (67%) and brain workers (63%). The least effective was the eurocalculator for students (23%). Chi-square reached 38.5722 and p = 0.000006, therefore the relation has been confirmed at significance level of 0.01.

An eurocalculator was useful.			**Yes 1**	**Don't know 2**	**No 3**	**All**
Type of employment	1 Student	Frequency	42	25	20	87
		%	48,28%	28,74%	22,99%	100,0%
	2 Manual job	Frequency	74	36	14	124
		%	59,68%	29,03%	11,29%	100,0%
	3 Brain work	Frequency	95	34	21	150
		%	63,33%	22,67%	14,00%	100,0%
	4 Retired	Frequency	62	15	16	93
		%	66,67%	16,13%	17,20%	100,0%
	5 Entrepreneur	Frequency	62	2	4	68
		%	91,18%	2,94%	5,88%	100,0%
All		Frequency	335	112	75	522
		%	64,18%	21,46%	14,36%	100,0%

Table 10: A view on an eurocalculator

Detailed testing helped to prove this hypothesis. At the same time we were able to confirm not only the presence of conversion in respect of employment, but also the use of specific conversion strategies.

5. CONCLUSION

To build a trust into a new monetary unit takes usually a long time. The length of the whole process depends on many different factors, one of them is linked to an ease or difficulty of coping with new coins and notes and conversion strategies. The theoretical part of the paper confirmed the similar problems in other members of the eurozone, such as France, Ireland, Italy, Austria and Portugal, the analytical part proved the occurrence of the problematic issues in the Slovak Republic even after 3 years of the euro introduction. The results confirmed that the people in Slovakia find it easy to deal with new banknotes, especially retired considered it elementary; on the other hand manual works found the dealing with new notes the least facile. Agreement with coins handling was not so strong, what is more, the retired acknowledged the most problems.

As for the conversion strategies, Slovak people find it easy to convert, what might be caused by simple conversion rate of 1 euro = 30.1260 Slovak crowns. Moreover, they keep on recalculating the prices to see the value of the goods and prefer to use the conversion and the anchor strategies. In addition they indicate the dual pricing as the most important tool of assessing the value in new currency with an eurocalculator taking the second position and being preferred by mainly entrepreneurs.

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These partial results serve as the ground for further research on the euro trust issues mentioned at the beginning.

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A COMPARISON BETWEEN THE BEHAVIOR OF BUYING ORGANIC CERTIFIED AND UNCERTIFIED PRODUCTS. CASE STUDY ROMANIA.

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Abstract

This paper studies the differences perceived by customers between organic eco labeled products and those products considered to be organic but without certification to prove it. In Eastern Europe, the latter market is still larger than the former. Because of rural agricultural development, the still large population employed in agriculture, and the division of land, the latter market is even more important to study than the former.

Key words: *organic product, local product, eco-certification, food, East Europe.*

1. INTRODUCTION

Many studies note the organic products problem, but as long as consumers' understanding of the term 'organic' differs from the international standards, this market starts to become blurry.

Loureiro shows that eco-labeled products are placed in consumer preferences between conventional and organic products. Many consumers who are in favor of buying eco-labeled products consider organic products as a safer alternative and more environmentally friendly, so they buy organic products if that has the same price as the eco-labeled.(Loureiro et al., 2001)

In this sense, labeled products are those that meet standards set by law and organic products are those that do not use any type of synthesis techniques.

Other matters related to this idea are sometimes extravagant modes of transport, loss of genetic diversification, seasonality, overpackaging, health and hygiene products (food safety). Here we can mention the problem with E. coli, which surprised European markets last year. All this makes the field, although well regulated internationally, less well understood by consumers. After all, the consumer has the decision to purchase, and if he perceives a product as organic and is willing to pay for this feature, our scientific interest is to examine this behavior. This is more so in Eastern Europe where consumers' perception about green products does not match the regulations that provide eco-labeling.

2. QUALITY OF FOOD PRODUCTS

Food is an important symbol of cultural tradition for many European societies, (Gilg and Battershill, 1998) especially those in the Balkans.

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In recent years more and more consumers began to question the quality of the food they buy and were willing to pay more for confidence that they buy a quality food. (Gilg and Battershill, 1998)

Consumer demand is continuously growing for quality and safe products. Communication of these features is done by certification and labeling, which are achieved by the fulfillment of certain standards. (Reardon et al., 1999)

Quality has a broad meaning; it can be evaluated in terms of: the intrinsic values of the product such as taste, the prevention of health problems during or immediately after consumption, and production conditions. Consumers may be interested in a combination of these factors. (Gilg and Battershill, 1998)

Other authors say that food quality is determined by several factors including: food safety, health, nutritional quality (less fat, less salt), authenticity, production processes that promote safer and sustainable agriculture, and "fair trade" working conditions. (Reardon et al., 1999)

Those interested in all these qualities have found the answer in traditional food products, thus developing various market niches that are called organic in many cases. These are products from animals that live on traditional farms, products labeled as regional goods, or products made by traditional methods on the farm. (Gilg and Battershill, 1998)

Quality is a complex term, as we saw, which includes a wide variety of characteristics and can be defined differently by consumers and producers. For consumers, quality may show concern for food safety, while for producers quality may be an opportunity to increase sales and raise prices. (Sage, 2003)

If until the 1980s we talked about efficient and cheap production for food, from the 1990s there appeared negative attitudes toward cheap food produced by: intensive farming methods, agricultural industrialization, overexploitation of agricultural areas, and the effects of agriculture on the environment. From these discussions, a current of opinion formed that required that food production to affect the environment less.(Gilg and Battershill, 1998) The people who held this opinion formed the first contingent of consumers who financially supported the appearance of “clean” food instead of industrialized food.

Many manufacturers are seeing this opportunity. They produce and communicate through different types of labels the affiliation of their products to the organic products family. Studies of buying behavior in response to labeling have shown that a change in labeling or information may change consumer perception and behavior. (Loureiro et al., 2001) Most studies have attempted to investigate the link between eco-labeling and willingness to pay more for such products.

On the other hand, there are many models of development in the market. Given the demand, the market has diversified, offering different solutions to meet the demand.

The scale of the transition to this niche model is still small, but the development of this niche certainly will take place in coming years. Linking consumers that want organic products with farms that use traditional extensive production methods can be a win-win-win situation. The traditional producers find a market to capitalize on better value for the production, with a higher gain per unit. Consumers find food at the desired quality and satisfy their needs at an acceptable cost. The third winner is the environment by reducing pressure on natural factors of production. In this case those who win are pressure groups: environmentalists, politicians, academic groups and society as a whole.

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Table 1 The industrialised food system and the consumer

	The Industrial Model	The Hybrid Model	The Niche Model
Supply	Profit motivated farmers running industrialized margin –led farming systems based on economic logic	Farmers motivated not only by profit but also by behavioral factors	Framers driven by behavioral beliefs but restricted by the need to remain solvent
Processors	Multi-nationals producing standardized highly processed products for the mass market, with sub-market of fresh food	Smaller firms producing a mix of standardized and niche products for targeted markets	The need to remain solvent encourages farmers to add value to their produce by targeting certain markets
Consumers	Majority of consumers are influenced by price and convenience and the majority of their food is highly processed for them	A substantial minority of consumers remain influenced by quality and freshness and more than half of them cook traditionally	A minority of consumers driven by ideological beliefs insist that their food meets high welfare, environmental or other standards
Caterers	Fast-food and other outlets which rely almost entirely on centrally produced food which is merely heated locally	Restaurants and pubs which provide a mix of prepared foods from outside and Specials	Specialty outlets which derive their food almost entirely from local or special sources.

Source:(Gilg and Battershill, 1998)

Altruism may be reflected in the purchase decisions of eco-labeled products because the environment is considered a good of the whole community. While standards for eco-labeled products include reducing or even completely removing the use of pesticides, the conditions for a product to be considered truly organic are much more strict. The term organic is applied to products that will be able to meet certain measurable standards such as a lack of synthetic pesticides as determined by laboratory tests. (Loureiro et al., 2001)

We can ask ourselves the reasons for which consumers have started to be interested in this subject. Let us begin with the premise that this current first appeared in developed countries, the United States and Western Europe. That is where humans may be considered well-fed as a result of the standard of living. They have access to many kinds of food, and the majority can afford to choose what they want to eat without fear of remaining hungry (Gilg and Battershill, 1998) Their motivations are multiple: environmental care, health care for themselves or their children, food taste, etc.

Demand for environmentally friendly products exploded in the 1970s, resulting in eco-labeled products. Blue Angel, introduced in Germany in 1978, was among the first eco-labels. Twenty years later, at the European Union level, the EU flower appeared, the symbol of European eco-friendly products defined by European Union regulations on euro-eco-labeling. In the United States, eco-labels appeared by the program Grean Seal, provided by Scientific Certification Systems and the Energy Star Program insured by the U.S. Environmental Protection Agency. At the local level, eco-labels appeared for agricultural products such as the Stemilt Growers, California Clean Growers and The Food Alliance (TFA).(Loureiro et al., 2001)

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An environmental impact statement that is certified and communicated to consumers through eco-labeling includes processes related to processing, product use and disposal after use. (Loureiro et al., 2001) Since eco-labeling requires compliance with standards, they began to be very important. Among the most important criteria are those formulated by IFOAM - International Federation of Organic Agriculture Movements, an association that appeared in the early 70s which proposed a development of this sector of production. Many of IFOAM's criteria were followed by the EU and the United States in defining eco-friendly products.

But as we know, when there are some standards, different groups will lobby to influence these standards according to their interests. Conflicts between the interests of the market and the agro industrial manufacturers were evident in the recent efforts to formulate national standards. For example, agro industrial manufacturers tried to introduce standards for GMOs, use of sludge after treatment and nuclear radiation. (Raynolds, 2004)

Even though many of these efforts have not succeeded yet, major manufacturers generate huge pressure, and all these interests tend to weaken or remove the initial concept of standardized and legalized organic products. The most important criteria for a product to be declared organic are listed below.

Table 2 Basic Organic standards

Conversion	At least a 1 year conversion period before start of annual production cycle; 2 years for perennials
Certification and monitoring	Initial inspection followed by annual visits to each farm unit by monitors from accredited certifying organization
Documentation	Map and list of registered fields. Complete records of farm input use and yields
Planting material	Must be chemically untreated; no genetically modified organisms (GMOs)
Fertilizers	Organic soil enhancing processes must be used. No synthetic fertilizers or sewage sludge
Plant and disease control	Use of synthetic herbicides, fungicides, and pesticides prohibited except those on approved list
Livestock	Feed must be 100% organic; use of antibiotics prohibited. Some restrictions on animal concentrations
Transport and handling	Chain of custody must be maintained: no co-mingling with non-organic products
Processing	No irradiation. Synthetic additives can be used from approved list
Labeling	Products labeled organic must have >95% organic inputs

Source: (Raynolds, 2004)

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Be it a standardized product or not, in other words a product which is eco labeled or only considered organic by the producers and buyers, it typically appeals to the same customer segments. In general, the idea of eco-labeling is much vaguer in consumers' minds and the benefits are much harder to measure in comparison with those of organic products. (Loureiro et al., 2001)

3. THE METHODOLOGY RESEARCH

Consumers buy labeled and non- labeled products for a lot of reasons. The difference in buying behavior between the two types of products was the theme of our study.

As a method of sampling we have chosen simple random sampling. The sample was calculated using the formula: (Catoiu et al., 2009)

$$N = \frac{t^2 * p(1-p)}{\Delta\acute{\omega}^2}$$

For a coefficient t of 1.96 which corresponds to a confidence level for the results of 95%, an acceptable limit error $\Delta\acute{\omega}$ of 3%, and a probability p = 0.5 because we have no other information, the calculation shows that a sample size N of 1067 is required. Because in the collection of data we have involved student volunteers, such as interview operators, we collected a larger sample so that we could eliminate questionnaires which were filled incorrectly. Thus, we collected 1350 questionnaires. Of these, only 1185 were considered valid as a result of the verification activity undertaken.

The first question was a filter one, asking if they know what organic products are. Those who said they did not know were automatically eliminated from the sample, leaving a total of 1128 respondents to the questions.

4. THE RESULTS OF THE STUDY

Table 3 How often do you buy organic food?

		Frequency	***Percent***
very often	*100% - 80% of cases*	37	3,3
often	*80% - 60% of cases*	114	10,1
between	*60% - 40% of cases*	321	28,5
rarely	*40% - 20% of cases*	229	20,3
very rarely	*20% - 0% of cases*	413	36,6
Missing System		14	1,2
Total		**1128**	**100,0**

Interest in organic products is still low in Romania. More than half of buyers said that they rarely or very rarely buy organic food, with 'very rarely' accounting for nearly 40% of buyers. This shows that the majority of people buy as a function of price without concern for environmental details. Only 3.3%

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of the respondents said that they buy organic food very often (i.e. almost every time they go shopping). In the formulation of our question, we asked only whether they buy organic food, not whether they buy only organic food. This means that the 3.3 % of 'very often' respondents may purchase a single organic product per shopping trip. However, their response shows that they are the target segment, together with those of the second category which is a percentage of only 10 %, the two segments together being 13%.

Table 4 What percentage of what you buy do you believe is organic?

	Frequency	***Percent***
between 80-100%	25	2,2
between 80% -60%	97	8,6
between 60%-40%	272	24,1
between 40-20%	361	32,0
between 20%-0%	364	32,3
Missing System	9	,8
Total	**1128**	**100,0**

In our questionnaire construction, we started from the idea that people, even if they do not try to buy organic products, still have a minimum of information about what they buy. A large percentage of those who said little of what they buy is organic show a disinterest in this field. This disinterest is due to objective reasons such as low financial strength and an overall disinterest regarding the type of food purchased. From this point of view the situation seems alarming: over 60% of respondents said that only a small part of what they buy is organic food. The same very small segment of respondents, this time under 2.5%, said that a very high percentage of the food they buy is organic. Another 8.6% said they bought a large percentage of organic food. Among past studies conducted by our research team and others in Romania, we can consider that the target for organic products is 2-3% of the entire population, and that there is another segment that is quite open to this idea but this segment oscillates around 10% of consumers. However, in this segment we can identify two types of consumers who buy certified organic products, which are usually found in Romania in modern retail systems and specialized stores, and another segment that is greater than the first of consumers who buy locally-produced foods or foods whose origin have interest, or who know the actual manufacturer. That is why the following questions refer to both purchasing of eco products which are certified and therefore labeled as well as products which the producers declare to be eco-friendly but which do not have a certificate. In this latter group are the products purchased on traditional markets or directly from the manufacturers.

To understand without doubt the term 'organic', we preceded this question with an explanation, and then we asked if the respondent has actually bought labeled or non-labeled ecological products. For the following questions, we focused on the consumer's family's behavior.

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Table 5 Have you personally bought organic products?

	Label			***Non-label***	
	Frequency	***Percent***		***Frequency***	***Percent***
Yes	601	53,3		807	71,5
No	514	45,6		313	27,7
Missing System	13	1,2		8	0,7
Total	**1128**	**100,0**		**1128**	**100,0**

Over 50% of respondents said they bought a certified organic product at least once. This percentage is still small for food purchased in a household. However the percentage itself was not a scope for this question. The hypothesis from which we started was that the number of people who buy non-certified organic products is higher than those who buy certified products. And this was demonstrated by the responses, where almost 50% more people had purchased non-certified organic products. This trend is also reflected in the next question.

Table 6 How often are organic products purchased in your family?

	Label			***Non-label***	
	Frequency	***Percent***		***Frequency***	***Percent***
Once a month or less	634	56,2		398	35,3
2-3 times a month	265	23,5		296	26,2
Once a week	155	13,7		257	22,8
More often than once a week	45	4,0		159	14,1
DN, NA	29	2,6		18	1,6
Total	**1128**	**100,0**		**1128**	**100,0**

Almost 15% of the respondents said that in their household, they bought products considered organic but non-labeled more often than once a week. In comparison, only 4% said that they buy labeled organic products as frequently. The difference is maintained at a purchase frequency of once per week. As we expected, labeled products led only for the very rare buying category. Over 50% of respondents said that they buy such products less frequently than once a month.

Surprisingly, the main reason for purchase of labeled products is the motive that the products are very healthy. Our first hypothesis was that consumers buy non-labeled organic products for health reasons. However in both cases it seemed that this is the main reason to buy, even if one party has more than 60% and the other not quite 40%. For non-labeled products, the other primary buying motives are also surprising. Over 20% report that they buy such products because the taste is better, and 16% said that these acquisitions are due to the quality / price ratio. However, these products are seen as being much cheaper than certified ones. Only 2.5% of those who buy certified products

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declared the quality / price ratio as the primary reason for their purchase.

Table 7 What is the main reason for buying organic food?

	Label			*Non-label*	
	Frequency	***Percent***		***Frequency***	***Percent***
They are healthier	710	62,9		437	38,7
They taste better	111	9,8		261	23,1
To protect the environment	46	4,1		38	3,4
Because I have a medical recommendation in this regard	65	5,8		28	2,5
Are more nutritious	78	6,9		106	9,4
Their quality / price ratio is the best	28	2,5		183	16,2
Other reasons.	47	4,2		41	3,6
Missing System	43	3,8		34	3,0
Total	**1128**	**100,0**		**1128**	**100,0**

Table 8 What are the main reasons for not buying organic products?

	Label			*Non-label*	
	Percent of Responses	***Percent of Cases***		***Percent of Responses***	***Percent of Cases***
Because they can't be found	15,8%	20,0%		16,2%	18,3%
Because they are too expensive	52,0%	65,5%		22,7%	25,8%
Because I don't trust that they are really organic	27,3%	34,4%		48,4%	54,9%
Because there is no difference between eating organic and conventional products	4,1%	5,2%		10,3%	11,7%
Other reasons.	,8%	1,0%		2,5%	2,8%
Total	**100,0%**	**126,0%**		**100,0%**	**113,4%**

The main obstacle for purchasing was declared as the price for labeled products, and the distrust that they are organic for uncertified products.

We also note the high percentage of respondents who distrust the certified products. Almost 35% of the respondents said that they did not have confidence in the fact that these products are truly organic. In both cases, it is worth pointing out the problem of limited facilities for purchase, almost 20% of the respondents indicating this.

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Table 9 How much do you trust the producers of neighborhood markets when they say their products are organic (chemically untreated) scale from 1 to 5

	Mean
Herbs	3,64
Vegetables	3,30
Cabbage	3,26
Salad	3,24
Potatoes	3,18
Apples	3,05
Grapes	2,74
Tomatoes	2,67
Strawberry	2,59
Oranges	2,42

To see the confidence in the products sold in neighborhood markets we have formulated a question with a scale from 1 to 5, with many types of products that are usually found in such markets.

We have chosen two reference products that were expected to be at the ends of range. Nettles are wild plants collected usually from forests. The plant is perennial and spontaneous; it is not grown by anyone. In these circumstances, the use of chemicals should be null, as should other processes which may not be environmentally friendly. At the other extreme are oranges, fruit originating from import. Oranges are known for their conservation treatment during transport as well as for their treatment during growth. Indeed, the two products were at opposite ends of the range. Herbs, followed by lettuce and cabbage, are considered to be relatively clean products, while grapes, tomatoes and strawberries are seen as rather chemicallytreated products. We have drawn up this scale to measure consumer perception of the degree of 'greenness'. Since the source and production process are unspecified, these results are numerical transformations of the consumers' perceptions. In fact, from the same producer there are a number of similar chemical treatments for cabbages and tomatoes. But this can be seen in any case of perception; the score for nettles should have been closer to 5 if it were an accurate reflection of the degree of chemical intervention in the process of growth.

As a place where you should go to purchase organic products, consumers say that they have more trust in buying directly from the farmer's yard, followed by exhibitions of traditional and organic products. The third place is specialized organic food stores. Products sold at the farm gate was surprisingly in only the fourth position, probably due to cases of sale at the gate of products that were purchased from other parts, thus devaluing the perceived greenness of gate-purchased goods. Two of the last three places, with a trust of 3 of fewer points on a scale from 1 to 10, belong to large retail networks that, though they have specialized departments for organic products, are primarily sellers of food produced in industrialized system. The standard image of neighborhood supermarkets and other modern retail elements in Romania is that organic products are not found there. The small neighborhood stores, the convenience stores, were the lowest-ranked in this list. In Romanian

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neighborhoods, these stores are located in the first level of blocks of flats, although there are also a few specialized organic shops located among them.

Table 10 Ordering by the degree of greenness of products found in these sale locations

	Mean
Directly in the peasant yard	6,66
In traditional organic fairs specially designed	6,05
In organic products stores	5,96
At the gate of farm	5,91
From old farmers who sell on the street	4,95
In leaflets markets	4,21
The fruit and vegetable markets in the neighborhood	4,12
In the big retail chains	3,07
In supermarkets in the neighborhood	2,80
In small neighborhood shops	2,59

5. CONCLUSION

The organic products market is still in its early development.There is some interest in buying organic products, but there is a noticeable difference between the reasons to buy labeled products labeled and unlabeled products. Personal or family health reasons are the leading determinant for purchasing organic foods in Romania. Environmental concern, one of the primary determinants in Western Europe and the United States, here seems insignificant. Taste is also declared to be the second most important factor. Lack of confidence in products that are truly organic and concerns over price are two important factors in purchasing this type of product. Other findings of the study are that consumer understanding of organic products is not yet well formed, and that consumers perceive the most trustworthy place of purchase for such products to be directly from the peasant producer.

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LOCAL PRODUCTS MARKET VERSUS ORGANIC PRODUCTS MARKET DIFFERENCES AND SIMILARITIES

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Abstract

Organic products, local organic, slow food, bio food, many traditional forms are only found in that part of smallholder products. This paper attempts to better define these growing two names, organic products market and local products market. Although it may have more in common among which we highlight the factors shaping the development, consumers desire to have healthier food though these markets are different. The difference is not an obvious one on different national markets you can find or not this difference as well as in certain categories of products. This paper supports the need to develop this market in Eastern Europe and to avoid taking over sales of large retail chains as happened in Britain. This is needed for proper development of organic products market - local and direct distribution systems to small producers.

Key words: *organic products, local products, Romania, food market, East Europe*

1. INTRODUCTION

In developed countries, organic market is at the end of its growing period and the period of maturity approaches. (Zanoli et al., 2012)

Growing importance of this market is probably the result of both demand for healthier diets and greater concern for the natural environment. (Zanoli et al., 2012)

As other authors emphasized in recent years have seen a growing concern for sustainability of agriculture and food system.(Pretty et al., 2005)

There are many perspectives on agricultural sustainability (Pretty et al., 2005) and this paper attempts to analyse various concepts and strategies to clarify this concept.

2. ORGANIC PRODUCTS MARKET

The concept of organic has hybrid international roots. Its principles and the healthy ecological systems of agriculture are often attributed to British authors who wrote about peasant farms in Asia. (Raynolds, 2004)

Movement that popularized the idea of organic criticized the destructive practices on the nature of agro-industrial system and endorsed the creation of systems of production, distribution and consumption based on small organic farms, food distribution through cooperatives, box schemes, and farmers markets, and wholesome diets.

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Organic farming is an agricultural system that promotes organic production of food, fibre and wood. In this system soil fertility is seen as key to success in production. Working with the natural properties of plants, animals and earth, organic farmers want to optimize quality in all aspects of agricultural and environmental. (Raynolds, 2004)

In 1972 was founded - IFOAM - International Federation of Organic Agriculture Movements. IFOAM has established a definition of the concept of organic farming in 2008. It is the following: Organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved. (IFOAM, 2008)

According to other definitions, organic products are those that differ from conventional processes rather by production and processing than through attributes that are to note in the product itself. The philosophy of organic products subject to production and processing without synthetic chemicals and fertilizing is done using biological techniques such as using compost, animal manure and crop rotation. (Loureiro et al., 2001)

Several elements stood at the development of this concept. Caring for animals rose in intensive farms, overcrowded led to a number of people to choose to change their feeding. Another reason was the increasing current for Low-food, low fat or that of healthy foods.

This trend also appeared as a counterweight to the ways of feeding the urban population, fast food and ready-made food. (Gilg and Battershill, 1998)

Not everywhere in the world the reasons for appearance of this movement were the same. First there is a difference between urban consumers and rural people in how they perceive and eat the food. Also there is a difference between the Nordic and the Mediterranean area of Europe. Northern consumers have less knowledge about how their food is produced compared to those of the Mediterranean environment that remain closer to farms and to the realities of food production. (Gilg and Battershill, 1998)

There is a link between environmental attitudes and buying organic products in the sense that as environmentalist is a person in the greater frequency of buying organic food. (Grunert and Juhl, 1995)

Food is a symbol of cultural and social tradition of many European companies. (Gilg and Battershill, 1998)

Besides the two models outlined before, we can say that there are at least a third one. We are referring to an Eastern European model that combines the concept of healthy eating cooked food, natural and nourishing. Taste comes first and also the meat, if might pork. All these influences exist on the market in organic products and see how these markets have developed in various places in the world.

European organic food market developed primarily because of consumer awareness, food scandals and popular rejection of genetically modified organisms. Europeans consume half the organic products produced anywhere in the world. (Raynolds, 2004)

Organic sales were expanded in the United States in recent years due to so called 'true naturals' or' hippie activists' to include a larger group of people well educated and 'health seekers'. (Raynolds, 2004)

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3. DISTRIBUTION ON ORGANIC MARKET

Consumer movement started as a local product by raising demand was needed to balance the market by appearing to take merchandise suppliers getting on (Raynolds, 2004) studying global connections north and south of the import methods. Nordic countries have increased demand for moving local seasonal products include tropical products or products and expanding counter-seasonal frozen, canned, meat, eggs, milk, cheese, and processed foods. European imports are large, including over 70% of sales in the United Kingdom. The United States is both a major importer of tropical and southern hemisphere but also the largest exporter to the EU, Canada and Japan. Due to limited production Canada and Japan are net importers.(Raynolds, 2004)

If only once worked as a local distribution based on cooperative, direct sales or sales boxes now because praetor premium and conventional distribution systems that use a majority of large supermarkets and organic products they offer. In United States 62% of sales are made by natural products stores were concentrated in several large chains such as Whole Foods and Wild Oats.(Raynolds, 2004)

In Europe small alternative shops are very popular in the Netherlands offering up to 96% of sales. Farm sales and sales grouped boxes are flourishing in many parts of Europe, providing nearly 25% of sales. Supermarkets have taken the offensive on the British market, Switzerland, Canada and Japan. (Raynolds, 2004)

On the most important markets organic sales are made on traditional distribution channels because of efficiency, standardization and competitive price. (Raynolds, 2004)

Tesco and Sainsbury control every 30% of organic sales. This means they control the supply chain nationally and even internationally not only dictating product specifications and quality but also by dictating the entire production line after planting, picking, packaging, transport and product delivery.(Raynolds, 2004)

Requires organic chain can control the entire production chain length imposing traceability rules on food market.(Raynolds, 2004) (Anica-Popa, 2011)

U.S. transnational corporations like Heinz, Gerber, and General Mills have recently become major players in the organic products industry. Agro-industrial corporations were noted by buying a brand name which "natural sound".

Using conventional business practices, they jumped over local producers of organic products by establishing strategic alliances and signing contracts with national and international manufacturers and carriers to provide large quantities of organic products continue and inexpensive. (Raynolds, 2004)

Through this practice of taking over the market lost the idea of providing standardized products locally. But this is in contradiction with those looking for such products. Consumers try to continually develop new techniques for supply. This makes two types of markets continued to differentiate.

4. LOCAL PRODUCTS MARKET

Movement to a local food supply has two strong directions support. (Carol Morris, 2003)

The first focuses on providing consumer goods at the site. This policy results in eliminating the need to transport long distances and avoid concentration amounts to increase efficiency. This strategy relies mostly on non-conventional distributed schemes. These goods usually come from an area centred on

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well-established place of consumption. Due to small distances transport these products should not be treated chemically or additional prepared to withstand conditions of transport and includes not as big a footprint.

The second direction that has grown is supplying food products in a certain region. These goods are often exported and are labelled so that its region they come to become an important message for their purchase. This market although sales uses and ecological arguments are based primarily on the unique feature that differentiates the product easily. Thus our interesting will focus only on the first part.

Movement for a local supply is believed to be more sustainable because it provides a local economic development. Money spent on food remains in that area. This can develop all existing rural areas and customers are informed about the place of origin of goods. (Carol Morris, 2003)

The reasons are not only due to local shopping friendly product quality studies show a more complex motivation. For example a study in Britain showed a rather buy local than organic products that illustrates a policy of defending local economic power rather than a turn to search for organic products. (Winter, 2003)

Local agricultural production is supported in the current literature by two arguments. The first is based on increased food safety population and the second on sustainable development.

The first is based on the idea that regional food production enough to sustain the population of that region increases individual security rather than using a global system. However, it is hard to implement a policy that is also aiming to change the diets, methods of production and population size of the areas studied.

The second is based on three arguments.

A. Reducing the environmental impact of long distance food transport. Studies made in this direction include fuel consumption, and the effect of greenhouse gases due to combustion of transport fuels.

B. The potential for environmental damage is reduced because production takes place under the eyes of consumers. Thus any exceedances of standards are quickly sanctioned locally.

C. Leadership in a sense increased socioeconomic security by building local networks of producers and consumers. (Cowell and Parkinson, 2003)

5. HUMAN ACTIVITY – EFFECTS OVER THE ENVIRONMENT

Most economic activities affect the environment. Even the natural resources as materials entering or using clean techniques. Cost of using the environment in this way is called externality, as are the effects of economic activity but their cost is not included in the price paid by the producer or consumer. When these amounts are not introduced in the market prices are distorted and encouraged activities that are costly to society as a whole even if private benefits are substantial.(Pretty et al., 2000)

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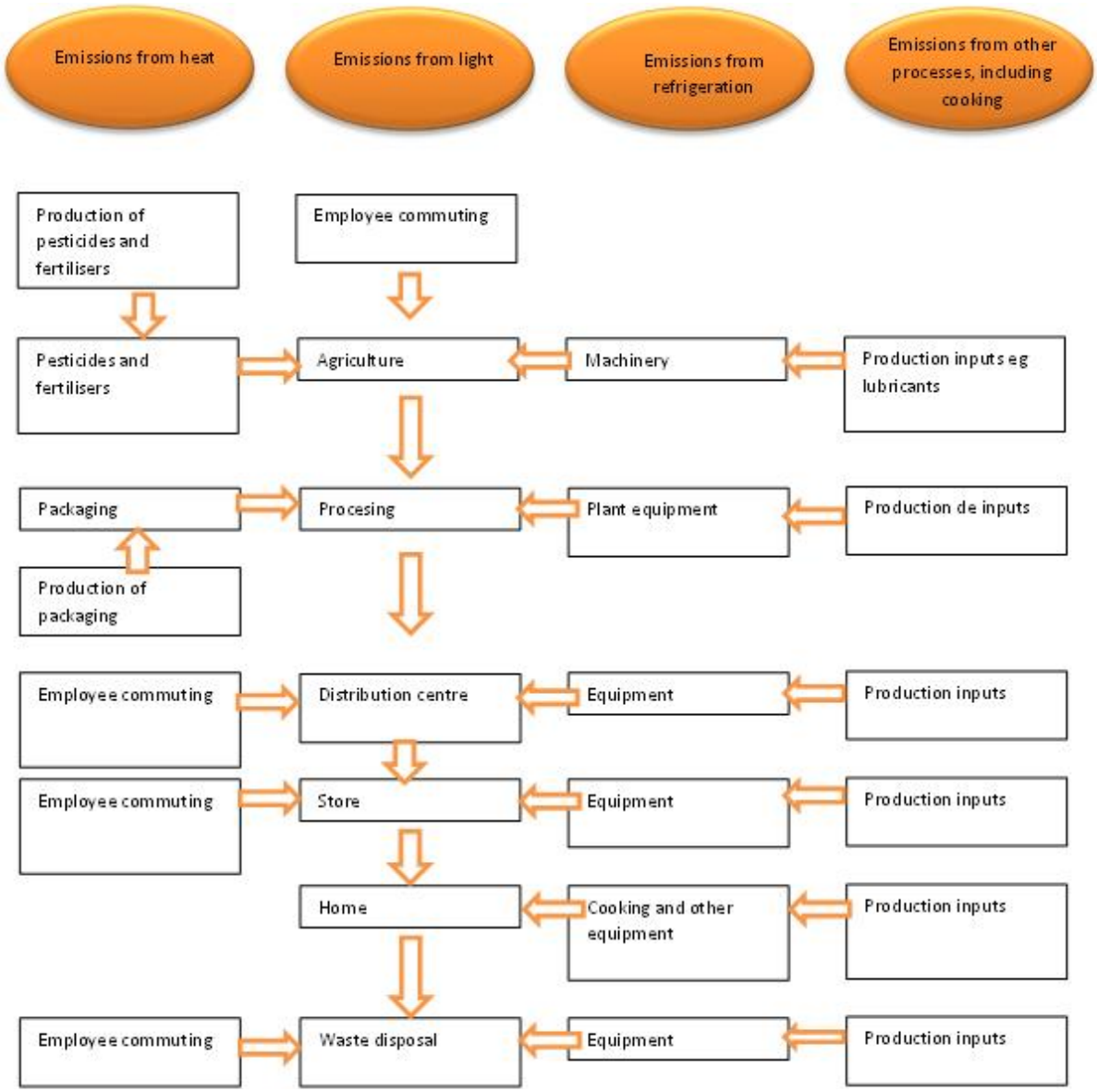

Arrow indicates transport

Figure 1 Principle sources of greenhouse gases in the food supply chain (Garnett, 2003)

However the calculation of costs for a marketable product market is difficult. Many specialists have tried to find solutions to calculate a total cost of environmental impact.(Pretty et al., 2000)

A variety of approaches have been developed including auditing mention energy, calculating materials for self-consumption of products and services, measuring the ecological footprint and carbon footprint calculation of sustainability indicators. Studies in the UK shows that some environmental and health costs of agriculture are 1.5 billion pounds in 2000. (Pretty et al., 2005) Some costs remain impossible to calculate, such as resistance to disease by prophylactic use of products from the country or avoid

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chronic disease due to the impact of pesticides that are not included.(Pretty et al., 2005) Many of these approaches stop at the farm gate and do not consider the environmental impact of the transport by up to place of purchase or from here to the place of consumption.

As was saying earlier this chapter, human activity can be polluting. We can offer us only that the activities we do to be cleaner than we claim that we can be 100% clean for the environment is not realistic, but by what we can to reduce the impact of human activity in the first phase several times.

Pretty proposes a form of comparative form of cost accounting that should be seen in the total cost of products for all forms of pollution from agriculture British agriculture classic thread and for the 100% organic. The results are interesting at least if we look at how all these effects were calculated.

Table 1 Negative externalities of British agriculture (Pretty et al., 2005)

Source of adverse effects	Actual costs from curent agriculture £ M an^{-1}	Scenario: costs as if whole of UK was organic £ M an^{-1}
Pesticides in water	143,2	0
Nitrate, phosphate, soil in water	112,1	53,7
Eutrophication of surface water	79,1	19,8
Monitoring of water systems and advice	13,1	13,1
Methane, nitrous oxide, ammonia emissions to atmosphere	421,1	172,7
Direct and indirect carbon dioxide emissions to atmosphere	102,7	32
Off-site soils erosion and organic matter losses from soils	59	24
Losses of biodiversity and landscape values	150,3	19,3
Adverse effects to human health from pesticides	1,2	
Adverse effects to human health from micro-organisms and BSE	432,6	50,4
TOTAL	1514,4	384,9

Another interesting approach is the energy consumption of the planet to cook our food.

A study in Sweden calculates the amounts of energy level absorbed by food energy inputs show that the life cycle of food can vary from 2 to 220 MJ per kilogram due to many factors such as: (Carlsson-Kanyama et al., 2003)

1. The origin plant or animal of the product - a product of animal origin is deemed to have consumed more energy because they have to feed with plants from a larger area of land.
2. Degree of processing - the more a product goes through stages of preparation include moving more energy consumed to be prepared.

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3. Processing and preparation technology chosen - a product prepared in the oven will include more than one energy consumed fried. This should be considered and the energy required for heating the oven and microwave energy lost issued after completion of cooking. Also be taken into consideration the energy used to heat the oven wood, gas, electricity (directly or microwave), etc.
4. Transport distance: the fuel that is consumed throughout the supply chain.

Key findings of the study are that in terms of absorbed energy animal products can vary from 1.8 MJ to 7.7 MJ per serving so be identified animal products more efficient in terms of energy. Included in the food energy consumed per day by one person can vary from 13 to 51 MJ. Energy consumption by type for proper food sweets, snacks and drinks can exceed one live in energy consumption for all food. (Carlsson-Kanyama et al., 2003)

6. SUPPORT STRATEGIES

Identification of local products as a source of interest in rural development is reflected by increasingly larger government programs, agencies and NGO`s. (Carol Morris, 2003)

Researchers show three strategic responses to changes in standards of food to market players. (Reardon et al., 1999)

Large firms and multinationals have tried to create standards and private labels and product marking systems.

Local media companies have been lobbying to public standards similar to those adopted in developed regions export.

Small businesses and farmers allied with public and non-profit sectors to create standardization and certification systems that allow them access to markets.

This applies to Western markets. Markets in the East things are in their infancy. Organic market is not yet crystallized and still struggling to find an identity and. On one side effect of organic products in Western markets expanded into Eastern markets with exports that are in new retail systems built after the fall of communism by all major European retailers. On the other hand, local produce, which is still in large amounts, 45% of the population lives in rural Romania fails to find a way to impose on the market. Below we have illustrated the model of Marsden agricultural transition in Romania. (Marsden, 1995)

As in the west during the communist years 1945-1990 there constituted large areas farms but after the fall of communism have quickly disbanded. Some of the old state agricultural enterprises IAS were taken by us and a business elsewhere after crumbled properties began to rebuild. They will wrap Marsden at European level. However much of the property, consisting dupe cancellation CAP agricultural production cooperatives are still small areas and perform many of the conditions of transition to organic production. Many of them are bringing income even without the technology help and really do not use any type of chemicals because they are too expensive. They returned to the level of agricultural techniques almost 100 years ago. These are those that have a high potential to enter the market with real organic products.

Some authors distinguish different models of agricultural development in Europe. One crumb based on property, farms small area, unspecialised and having low income. The second, which has appear and developed as large area farms, mechanized, specialized, with fewer employees. And the third a return

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to traditional models of production but with a high efficiency and versatility areas based structure not only agricultural production but income from several sources.(Marsden, 1995)

The positive effects of rural agricultural areas are large. For example, 55 million visits a day are made to the country by people living in urban areas in Britain. These visits provide value and pleasure in the farm turns into money. Unfortunately, as other authors have pointed out, no study has highlighted the positive externalities. (Pretty et al., 2005)

This model began to be built in Romania in recent years. Many agro-tourism were built, many even using European money.

It would be a solution to the social assistance cases. Many of these farmers are economically vulnerable and subsistence to live today. If these producers in Western Europe are supported financially and materially regional measures, in Romania they are on the edge of subsistence.

Market development for the traditional product is in terms of marketing an opportunity for producers in developed countries such as reduced dependence on government support methods especially for farmers in Eastern Europe that have survived until today without real support from anyone.

At this point the European agricultural market is a market quota imposed various protectionist by member countries and by various subsidies offered to every EU country. The organic certification system that gap is great.

As Raynolds says certification is a new and powerful tool for network control and which has its roots in the institutional bureaucratic. They help increase the unfair gap between major manufacturers and small manufacturers. Expensive organic certification creates a significant barrier to entry for poor producers and encourages concentration of agricultural production and price premium in the hands of major producers. Retail benefit officers also powerful because organic certification applications and document chain of custody control enables manufacturers and distributors. (Raynolds, 2004)

Using market forces to regulate the market and lead to sustainable development should be imperative to any government, no permanent solutions to upset over subsidies for some market players.

This was followed by British authorities that examines how demand for food quality replacement products in the country, agricultural funds existences environmental.(Gilg and Battershill, 1998)

He wrote about the scheme for small producers to capitalize on their products. He said that direct marketing is the most effective form of exploitation, because it offers the best farmer's profit margin and offers plenty of useful consumer information.

Followed by direct sales Direct marketing is the best way to reach consumers. Direct sales as a method of distribution put into action the concepts of valorisation in superior conditions and traceable. (Gilg and Battershill, 1998)

Types of food sold through direct sales include food with a regional identity, the natural, hand-made or homemade foods that have a high intrinsic quality based on a specific variety or a breed and quality of ingredients. (Gilg and Battershill, 1998)

This distribution is the direction that should be followed and the small producers in Eastern Europe.

In order to avoid taking over the retail of the organic products by the large retail chains as happened in Britain or Switzerland. It is needed for proper development of organic products, local market and direct distribution systems of small producers.

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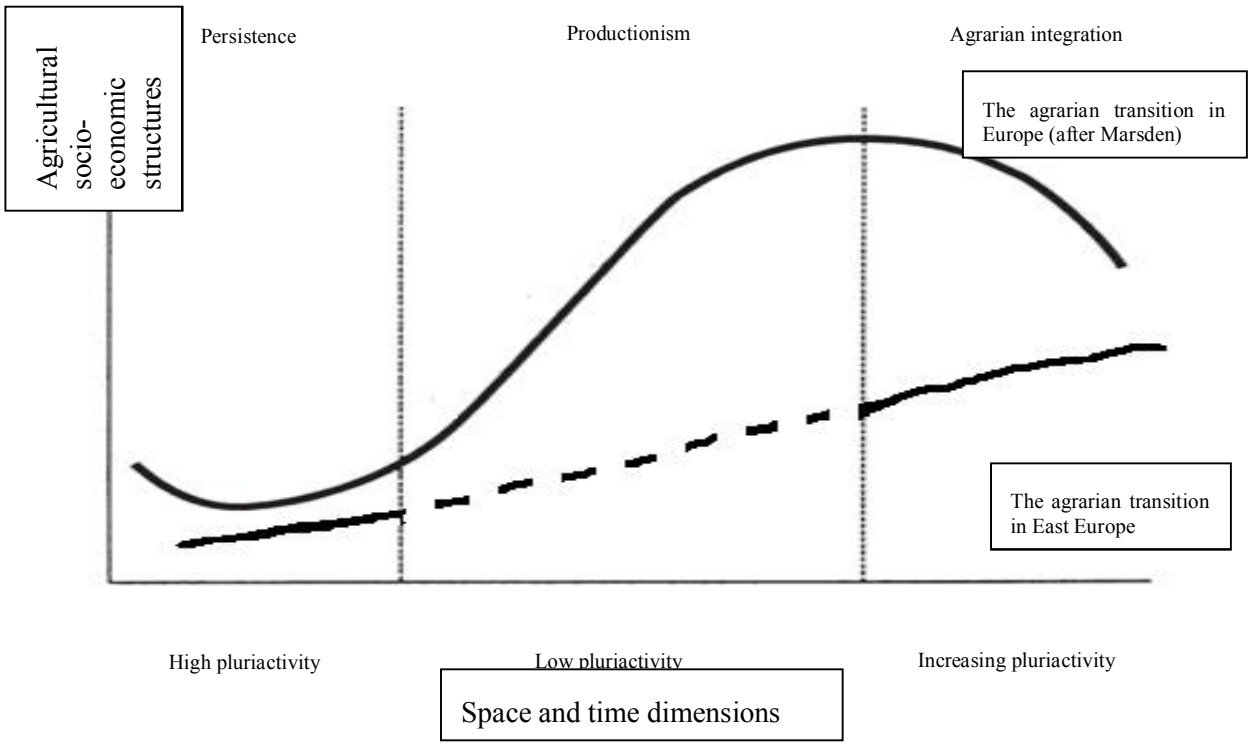

Source: adapt after Marsden (Gilg and Battershill, 1998)

Figure 2 The agrarian transition a comparison between West and East Europe

7. CONCLUSIONS

Economic realities are different from country to country and more so in Eastern Europe and the West. Although in the European Union, many countries in Eastern Europe does not find new economic realities in the European regulations. For example system certification of organic products in Western Europe does not match the reality properties scattered and outdated production techniques found in small farms in Eastern Europe. Lack of capital and traditional methods of earth work are making that sort much lower productivity than in the West. Despite all these results in what is the quality of agricultural products are much higher. The famous Dutch tomatoes are avoided in the East Market because they do not meet a condition as evidence, does not taste like tomatoes. It is therefore necessary to adapt a process of agricultural development based on current reality and building products distribution system following the concept as started in Western Europe 40 years ago and that is based on local products.

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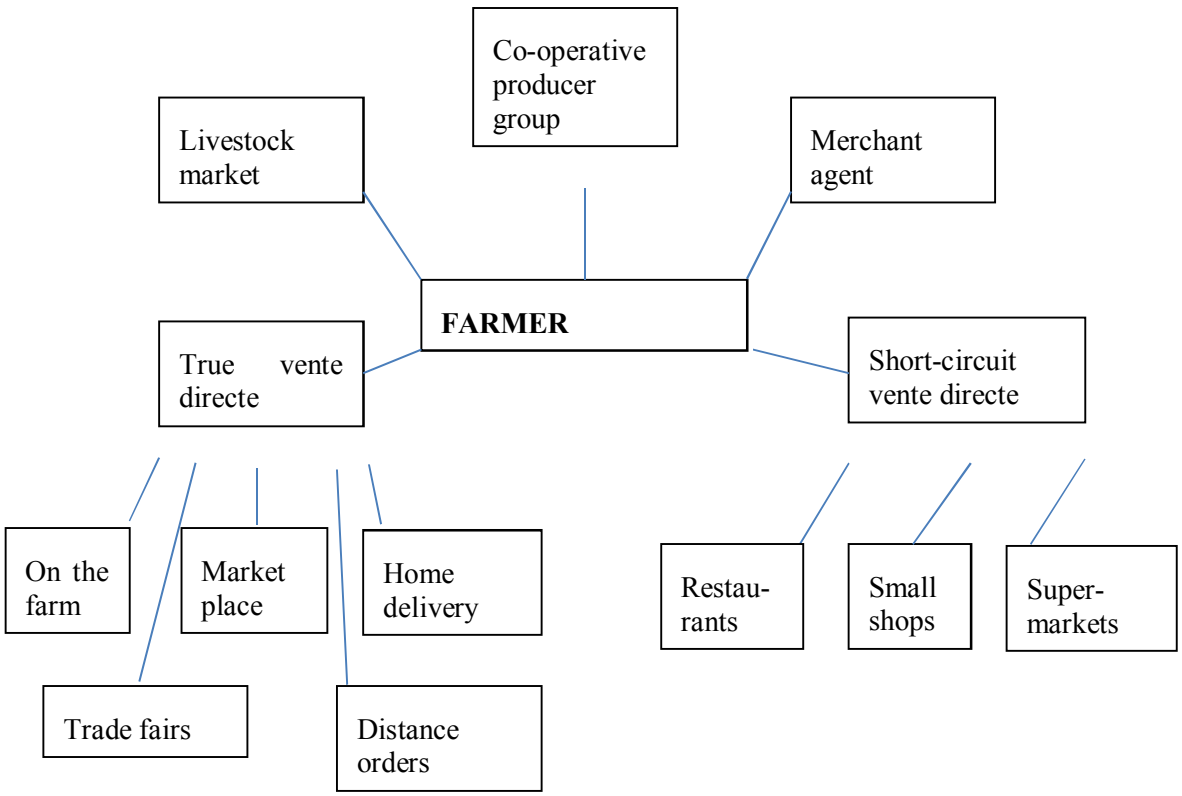

Figure 3 Type of distribution used by small farmers

Source: adapt after Gilg and Battershill (Gilg and Battershill, 1998)

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