CRACOW UNIVERSITY OF ECONOMICS

FOUNDATION OF THE CRACOW UNIVERSITY OF ECONOMICS

# KNOWLEDGE ECONOMY SOCIETY

## CHALLENGES OF CONTEMPORARY ECONOMIES IN THE FACE OF GLOBAL MARKET CONDITIONS

Edited by
Ryszard Borowiecki, Andrzej Jaki, Paweł Lula

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## CHALLENGES OF CONTEMPORARY ECONOMIES IN THE FACE OF GLOBAL MARKET CONDITIONS

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**Reviewer**

*Dariusz Nowak*

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# Introduction

The second half of the 20th century brought fast and radical transformations, both in the social and the economic sphere of individual states and their economies. The scientific – technical revolution accelerated industrialization processes which contributed to fast economic growth creating a permanent foundation for an increase in the wealth of societies and their civilization development. The information revolution, constituting the next stage of the development of economies, drew attention to the growing role of intangible assets as those components of the economic potential of enterprises whose capability of raising or creating became the key determinant of building its competitiveness on the market. Therefore, the transformations in the economic structures referred to implementing, analysing and programming changes both in the macro- and microeconomic perspective. They were a response to newer and newer challenges facing economies of the industrialization era and the information era. The challenges required from them to display not only the abilities to adapt to the changing conditions of management but also to take actions focused on the creation of development. It created a need to use various scopes of restructuring because it constitutes the process of radical changes in the economic structures which are implied both by transformations in the sphere of the mechanisms of the functioning of economies and the strive to shape new paths of enterprise development in order to increase their effectiveness and competitiveness on the market.

The 1960s and 70s were also a period of the development of investor capitalism based on the separation of ownership and management, and domination of enterprise ownership structures by institutional investors. That was a period of the growing role of the financial market and the financial sector related to the development of the activities of banks, insurance companies, investment funds and venture capital funds, as well as their increasing significance for the process of enterprise financing. On the other hand, the end of the 20$^{th}$ century is connected with the processes of progressing globalization and internationalization of enterprises' activities, which on the one hand created new opportunities for their fast development and on the other hand gave rise to new challenges and potential threats for the continuation of their activities. Globalization processes bringing the extension of the access to markets worldwide and creating facilitations with regard to the flow of real, financial and human capital at the same time brought about the growing interdependence of national economies which can result in a stronger im-

pact of crisis situations occurring on local markets on the functioning the regional or world economic system. The experiences of the last economic crisis seem to confirm the fact that globalization can also become a factor fostering the spread and deepening of crisis situations in the international dimension.

Changes in the external and internal conditions of enterprise functioning also brought about the emergence of such new management concepts as, for example the Value Based Management concept, the Corporate Social Responsibility concept or the Sustainability concept, as well as the evolution of those concepts and the instruments and management methods applied in them, as a result of the conclusions arising from their application in the economic practice. The experiences of globalization and the global economic crisis also proved that the survival and development of enterprises often require to take actions focused not only on the need for competition but also coordination and cooperation with other entities in order to create network and cluster structures for the purposeful cooperation of organized economic assets.

In the indicated context it should be stated that this book discusses complex problems of challenges facing societies and economies of the beginning of the 21st century. They have been shown from the point of view of the experiences of various countries, and also arising from the impact of both global and regional processes. The entirety of the deliberations are divided into the following three parts:

I. Determinants of effectiveness and competitiveness of economies under globalization.
II. Developmental challenges of contemporary economies – economic and social aspects.
III. Sectoral perspective of the development of enterprises and economies.

The first part, entitled *Determinants of effectiveness and competitiveness of economies under globalization* presents the mentioned issues from the point of view of the experiences of both the European Union countries and the experiences of the European transition economies of the countries applying for the membership in the European Community. In this context, the role of Foreign Direct Investment and reindustrialization processes is exposed, shown mainly from the perspective of the experience of the Serbian economy.

The second part, *Developmental challenges of contemporary economies – economic and social aspects* exposes the influence of such management concepts as: Value Based Management, Corporate Social Responsibility and Sustainability on the way of perceiving the processes of development of enterprises and economies, as well as the perspective and tools of evaluating the fulfillment of the goals of contemporary enterprises.

The last, third part of the book, entitled *Sectoral perspective of the development of enterprises and economies* stresses the significance of the sectoral conditionings as the factors determining the scope, directions and intensity of developmental processes implemented with regard to the economies of Serbia, Ukraine and Poland.

This publication was created as an effect of scientific cooperation conducted by Department of Economics and Organization of Enterprises of the Cracow University of Economics with Kyiv National University of Trade and Economics, University of Kragujevac and University of Messina. It is also a part of many years' cooperation conducted between the academic environment of the Faculty of Management at the Cracow University of Economics and the employees and doctoral students of other faculties of the University, with

representatives of different Polish academic circles, as well as representatives of foreign academic circles from different countries. This work inscribes into the series of publications under the common tittle *Knowledge – Economy – Society*, which constitutes one of the effects of this many years' cooperation[1].

*Ryszard Borowiecki, Andrzej Jaki, Paweł Lula*

[1] See: *Knowledge – Economy – Society. Challenges of the Contemporary World*, Edited by R. Oczkowska, B. Mikuła, Faculty of Management of the Cracow University of Economics – Foundation of the Cracow University of Economics, Cracow 2011; *Knowledge – Economy – Society. Dilemmas of the Contemporary Management*, Edited by A. Malina, R. Oczkowska, T. Rojek, Faculty of Management of the Cracow University of Economics – Foundation of the Cracow University of Economics, Cracow 2012; *Knowledge – Economy – Society. Transfer of Knowledge in the Contemporary Economy*, Edited by P. Lula, B. Mikuła, A. Jaki, Faculty of Management of the Cracow University of Economics – Foundation of the Cracow University of Economics, Cracow 2012; *Knowledge – Economy – Society. Global and Regional Challenges of the 21st Century Economy*, Edited by P. Lula, B. Mikuła, A. Jaki, Faculty of Management of the Cracow University of Economics – Foundation of the Cracow University of Economics, Cracow 2013; *Knowledge – Economy – Society. Challenges of the Contemporary Management*, Edited by A. Malina, R. Oczkowska, T. Rojek, Faculty of Management of the Cracow University of Economics – Foundation of the Cracow University of Economics, Cracow 2013; *Knowledge – Economy – Society. Dilemmas of the Economic Resources Management*, Edited by R. Oczkowska, G. Śmigielska, Faculty of Management of the Cracow University of Economics – Foundation of the Cracow University of Economics, Cracow 2014; *Knowledge – Economy – Society. Contemporary tools of Organizational Resources Management*, Edited by P. Lula, T. Rojek, Faculty of Management of the Cracow University of Economics – Foundation of the Cracow University of Economics, Cracow 2014; *Knowledge – Economy – Society. Contemporary Organizations in the Process of Institutional Transformations*, Edited by A. Malina, R. Oczkowska, J. Plichta, Faculty of Management of the Cracow University of Economics – Foundation of the Cracow University of Economics, Cracow 2014, *Knowledge – Economy – Society. Managing Organizations: Concepts and Their Applications*, Edited by A. Jaki, B. Mikuła, Faculty of Management of the Cracow University of Economics – Foundation of the Cracow University of Economics, Cracow 2014 and *Knowledge – Economy – Society. Problems of Management and Financing Economic Activity*, Edited by R. Oczkowska, G. Śmigielska, Faculty of Management of the Cracow University of Economics – Foundation of the Cracow University of Economics, Cracow 2014.

# PART I

# DETERMINANTS OF EFFECTIVENESS AND COMPETITIVENESS OF ECONOMIES UNDER GLOBALIZATION

Chapter 1

# Industrial Productivity and International Competitiveness – The Polish Case within EU

*Beata Skowron-Grabowska, Marek Dziura*

## 1. Introduction

This paper focuses on the most recent developments in manufacturing and services among EU countries since 2008, the beginning of the crisis. The impacts of the crisis and the extent of the recovery are compared across both industries and countries. The different impacts across industries are mostly explained in terms of differing demand elasticities with respect to income and prices. This analysis includes recent developments, for which data are available.

## 2. EU economy recovery

Following the financial crisis, EU-27 manufacturing seemed to be recovering from the beginning of 2009. The recovery came to a halt in the third quarter of 2011, since when manufacturing growth rates have once again declined. The downturn which followed is comparable to the millennium recession in terms both of duration and impact.

The data for the first and second quarter of 2013 indicate a slow recovery of industrial production in the EU. However, the most recent data demonstrate the fragility of this recovery, as production declined again slightly in the third quarter of 2013. The strength of the recovery differs substantially across EU countries. Strong recoveries can be seen in Romania, Poland, Slovakia, and the Baltic states, which have all regained and surpassed their pre-recession peaks. Although the recovery process began simultaneously in many other Member States, capital goods and intermediate goods industries are more sensitive to business-cycle fluctuations than those producing non-durable consumer goods, where demand is less sensitive to variations in income. This explains the relatively large production losses for some medium-/high-technology industries. Mining industries and construction were harder hit by the financial crisis than manufacturing as a whole, though there is considerable variation within the mining and quarrying sector. Metal ores and mining support services have developed positively these are still trailing well behind prerecession production levels. Several manufacturing industries in the south of the EU are still

at an early stage of recovery or still waiting for it to begin (Report: Competing in Global Value Chains, 2013).

European industries producing non-durable goods such as food, beverages, other transport equipment and pharmaceuticals have fared relatively better than other industries since the outbreak of the financial crisis. Also, high technology manufacturing industries were in general not affected to the same extent as other sectors. Other mining industries have been on the decline over a longer period of time. This also applies to manufacturing sectors such as furniture, clothing and textiles.

Looking at the most recent data, the strongest growth rates in manufacturing are in industries with the largest production losses from pre-recession peaks: motor vehicles, machinery n.e.c. and basic metals[1]. Consumer goods were not hit as hard by the crisis as capital and intermediate goods. In this category, consumer staples, such as food and pharmaceuticals, have also fared better since the end of 2012. The development for pharmaceuticals also partly explains the still positive growth rates for high-tech manufacturing industries. Besides pharmaceuticals and metal ores, other transport equipment and other manufacturing industries have also displayed positive growth rates since the end of 2012 (Eurostat, 2013).

On the basis of information from EU business surveys, the recent positive developments in manufacturing output are expected to continue. After recovering from very low levels in 2009, EU manufacturing order books and production expectations declined again in 2011 (EU Industrial Structure 2011). Developments as regards inventories mirrored these trends. Production expectations lead the other variables by some months. The latest surveys showing growing, though still fragile, expectations may indicate a future rise in demand. Expectations in manufacturing have become more optimistic since the beginning of 2013 (Report: Competing in Global Value Chains, 2013).

EU manufacturing hit a trough and began a rebound earlier than US manufacturing, but US developments have been stronger over the past two years. US manufacturing already recovered more quickly than EU manufacturing in the two previous recessions since 1990. After the most recent recession, growth in the EU and the USA initially followed a similar course until the third quarter of 2011. However, since then, EU manufacturing growth has declined, while US growth rates remain positive (EU Industrial Structure, 2011).

Average annual EU manufacturing growth rates in the period 2001-12 were less than half those in the USA. Growth rates in South Korean manufacturing were considerably higher, while, on average, Japanese manufacturing did not grow in this period. The significantly greater degree of volatility in the most recent Japanese growth rates is partly attributable to the impact of the earthquake in 2011, after which Japanese production declined sharply before staging an impressive recovery (EU Industrial Structure 2011). In addition, the financial crisis had a greater impact on Japan's manufacturing industries than on other countries' and, until recently, developments have been more negative for Japan (Eurostat, 2013; OECD, 2011; OECD, 2013).

[1] N.e.c. – not elsewhere classified.

## 3. EU's economic structure

The industrial structure of an economy is the result of long-term trends. Each sector's share of employment and value added is determined by factors such as growth in productivity, the structure of demand and international trade. This part attempts to capture the dynamics of the main sectors of the EU economy (European Commission, 2007).

The long-term shift from manufacturing to services is continuing. Market services have grown to a point where they account for nearly half of EU gross value added. The share of non-market services has also increased, to 23% in 2012[2]. Conversely, manufacturing activities declined to around 15% of overall gross value added in 2012. Construction, and mining and quarrying, have remained roughly stable at 6% and 1% respectively. The contribution of agriculture has declined marginally (Eurostat, 2013).

There is the large variations in the percentages of Member States' output accounted for by manufacturing and market services. Luxembourg stands out as having a very large market services sector and a very small manufacturing sector. Greece, Cyprus and the UK also have large shares of market services. Conversely, Romania, the Czech Republic, Hungary and Ireland have small market services sectors but relatively large manufacturing sectors. In general, many central and eastern European economies have kept relatively large manufacturing sectors as compared with the EU average.

Manufacturing industries in some of these countries have received relatively large inflows of foreign direct investment (FDI), which are channelled towards exports. In the short term, this may counteract the long-term trend of growing services and shrinking manufacturing sectors. In the long run, however, the share of services in these economies looks set to increase due to long-term drivers such as a higher income elasticity of demand for services and lower relative productivity growth in service sectors as compared with manufacturing (European Commission, 2009).

### *3.1. The distribution of manufacturing production across the European Union*

Around a quarter is located in Germany, whose share of manufacturing has been much greater than its share of overall economic activity for a long time and has largely been maintained during the crisis period. Although manufacturing shares have been quite stable, enlargement has caused a partial shift away from the EU-15 to the 'new' Member States, which inherited larger manufacturing sectors from the pre-transition period; the proportion of EU-12 in EU manufacturing has increased since 2005. Poland experienced the strongest increase and now accounts for 3.5% of the total. Notably, the share of manufacturing in the UK fell from over 14% in 2005 to just over 11% in 2009 – a sizeable decline from a relatively high base (in 2005, the UK had the second largest share after Germany and now ranks only fourth). On average, market services have grown by 1.7 percentage points in the EU overall between 2000 and 2012 and now make up half of EU GVA. The share of manufacturing has fallen by 3.3 percentage points. The proportion of market services has increased in most Member States, with the exception of Germany, Estonia, Malta, the Netherlands, Poland and Romania. As implied above, the share of manufacturing has declined in most Member States, but it has increased in Germany, Estonia, Lithuania, Poland and Romania. Lithuania stands

[2] Non-market services comprise branches covering general public services, non-market education, research and health services provided by general government and private non-profit institutions, domestic services and other nonmarket services.

out as the only country which has seen a positive shift in both manufacturing and market services, mainly at the expense of non-market services and agriculture. The relative importance of agricultural activities has diminished in all Member States except Latvia. The share of non-market services has increased by 1.8 percentage points on average and there has been an increase in most Member States, with the exception of Bulgaria, Hungary, Lithuania, Latvia, Poland and Romania. The construction sector's share of output has marginally declined since 2000. A few countries stand out as having particularly large construction sectors; in Spain, Romania and Slovakia, for example, construction has a share markedly higher than the EU average of 5.9% (Eurostat, 2008; Eurostat, 2013).

Wholesale and retail trade is the largest EU market service sector, followed by real estate activities. Within EU manufacturing, 'basic metals and metal products' is the largest sector. Healthcare activities increased more than any other sector between 2000 and 2011 (due to the effect of demographic changes on demand), followed by financial and insurance activities, and real estate.

Pharmaceuticals is the only manufacturing sector which has increased its share of output since 2000. This can be attributed to increased demand from population ageing and to subsidised prices. In addition to demographic changes, many healthcare services and products are subject to low income elasticities, so demand is likely to have been sustained more than in some other sectors during the recent crisis period. By contrast, agriculture, forestry and fishing have declined more than any other sector, followed by several low and low-to-medium technology sectors. In terms of employment, the wholesale and retail trade sector, by far the largest, has continued to grow strongly over the past decade. Employment in the construction sector has also continued to increase from a high base. Despite the small proportion of GVA devoted to agriculture, forestry and fishing, the sector still provides a large amount of employment.

Higher income elasticities of demand for services tend to shift final demand towards services, as incomes grow over time, at the expense of manufactured goods. Falling relative prices of manufacturing as compared with services also tend to reduce the relative share of manufacturing in terms of nominal values. With respect to employment, the sectoral shift is even more pronounced because services are more labour-intensive and typically have lower productivity growth. In this respect, it is interesting that, although the pharmaceuticals sector increased its share in value-added terms, its share of employment remained the same (Leontief, 1986).

Developments over time for individual Member States reflect the trend of increasing employment in service industries and fewer jobs in manufacturing. Employment in administration, legal and accounting services and computer programming and consultancy services grew in all countries between 2000 and 2011/12 (Eurostat, 2008; Eurostat, 2013). Manufacturing employment in Germany shrank in all but two sectors. In view of the increasing share of manufacturing in Germany's output, it can be reasonably assumed that improved productivity growth has made its manufacturing more competitive on world markets. Austerity measures in some Member States have led to lower employment in public administration. Data from the World Input-Output Database (WIOD) allow us to compare EU economic activity at sector level with that of other countries and regions.

Some reports show the distribution of economic activity at sector level globally, indicates that Asian economies are more specialised in manufacturing than the EU and the USA. Conversely, they have less developed service sectors. Nevertheless, the shift away from agriculture and manufacturing towards services is a worldwide trend, which has accelerated in the last decade in emerging markets as well (Leontief, 1986; World Input-Output Data, 2012).

Although there was a significant drop in the share of agriculture in China, this was part of a shift towards market and non-market services sectors rather than towards manufacturing.

The largest decline of manufacturing shares occurred in the EU. As well as non-market services, market services and construction also became more important in the EU (World Input-Output Data, 2012).

## 3.2. Sector specialisation in the EU

This part describes the degree of specialisation in EU economies. Specialisation is expressed as the proportion of a particular economy represented by a given sector as compared with the proportion represented by that sector in the EU economy as a whole. In overall terms, the four Member States with the most specialised industrial structures are Ireland, Sweden, Romania and Malta, in that order (Eurostat, 2013). In general (although the index is based on relative sector distributions), the larger the economy, the greater the potential for diversification – large countries can harbor more activities than small countries. Hence larger economies (France, Spain, Italy and Germany) make up the majority of the most diversified economies in the EU.

It should also be noted that specialization indices tend to be higher for tradable (generally goods rather than service) sectors, because there is more potential to specialize via external demand. As explained below, a high degree of 'specialisation' in a sector does not necessarily denote that the sector represents a large proportion of the economy; rather, it means that it is relatively more important to the national economy than to the reference economy, here the EU (Hummels, Ishii, Yi, 2001, pp. 75-96). In some countries, the specialisation indices are very high[3]. The highest (14.03) is to be found in Ireland, for the pharmaceuticals sector, followed by Sweden (9.74), for refined petroleum (Eurostat, 2008; Eurostat, 2013).

Some shifts in the degree of specialisation, e.g. the decline in the importance of the construction sector in Ireland and Greece, clearly reflect the impact of the crisis. Other shifts, e.g. the strong increase in specialisation in computer, electronic and optical equipment in Estonia, indicate rapid economic development. Economies with a lower *per capita* income, such as Romania, Poland, Latvia and Lithuania, tend to be more specialised in agriculture, whereas higher income economies tend to specialise in medium-to-high technology industries and knowledge-intensive services[4]. This is in line with the long-term structural shift from agriculture to industry and subsequently services, as income levels rise. Nevertheless, higher income economies sometimes show specialisation in low-to-medium technology manufacturing industries, often reflecting the availability of natural resources. For example, the paper and printing industry in the Nordic countries is supported by the domestic forestry sector.

## 3.3. Indicator of sector specialisation

The indicator of a country's sector specialisation compares the proportion of its economy represented by a given sector with the proportion the same sector represents in the EU economy as a whole. Values above or below 1 indicate a greater or lesser degree of specialisation in a sector; the higher the value of the indicator, the higher the degree of specialisation. The index is calculated for country '*i*' and industry '*j*', as:

---

[3] The indices should be interpreted with caution, as data availability varies substantially between countries.

[4] France is an exception in that it specialises almost entirely in agriculture and services.

$$S_{i,j} = \frac{\frac{VA_{i,j}}{\sum_i VA_{i,j}}}{\frac{VA_{EU,j}}{\sum_i VA_{EU,j}}} \quad (1)$$

where *VA* is value added and *EU* refers to the EU-27 (European Commission, 2005).

When interpreting the specialisation coefficient, three caveats should be taken into account:

1. Large countries carry more weight in the denominator, i.e. the sector profile of the EU. Hence large countries' sector profiles are less likely to differ significantly from that of the EU as a whole and, conversely, small countries' are more likely to do so. Also, small countries are more likely to show greater specialisation as they have less capacity to develop a wide range of sectors. This encourages them to focus more on sectors in which they have a comparative advantage, due *inter alia* to the availability of specific natural resources, to historical factors and advantageous location, and leads to greater specialisation.
2. The level of sector aggregation in the NACE classification may mask the degree of specialisation in component sectors.
3. The degree of specialisation in a sector and its size are not necessarily related. The fact that a country is specialised in a sector does not necessarily imply that the sector represents a large proportion of the country's economy.

## 3.4. Degree of country specialisation

The specialisation coefficient provides a value for particular sectors in a given country. The degree of specialisation of a country overall is expressed as the Euclidean distance between the country's vector of specialisation and the vector corresponding to the non-specialisation hypothetical case, i.e. if the coefficient of specialisation were equal to 1 for all sectors. For country 'i' with 'n' sectors, the coefficient of country specialisation is as follows (European Commission, 2005):

$$S_j = \sqrt{(1-S_{i1})^2 - (1-S_{i2})^2 + \ldots + (1-S_{in})^2} \quad (2)$$

## 3.5. Size distribution of enterprises

The distribution of economic activity according to the size of enterprises provides a measure of the degree of concentration, and of the proportion of an economy represented by large or small firms. This information is useful as part of an overall appreciation of sectoral performance and competitiveness (European Commission, 2005; European Commission, 2011).

The proportion of small and medium-sized enterprises (SMEs) varies significantly between sectors[5]. Data presents, that the sectors dominated by large enterprises (i.e. with 250 or more

[5] Enterprises qualify as SMEs if they meet thresholds as regards: i) number of employees (10, 50 and 250); and ii) turnover or balance sheet. Eurostat currently collects data as regards the three employee thresholds but not the financial thresholds.

employees). SMEs are socially and economically important as they represent 99% of all firms in the EU and provide around 65 million jobs. They are also a major source of new jobs and have strong growth potential. Nearly two million new SMEs are created annually in the EU. SMEs tend to predominate in sectors which are less capital-intensive, and where economies of scale are not crucial. They are also strongly represented in service industries, e.g. retail trades, hotels and restaurants, and business services (EU Industrial Structure, 2011).

Large enterprises represent more than 80% of value added in the industries producing tobacco, oil refining, logistics, and motor vehicle, air transport and other transport equipment. In general, SMEs are under-represented in manufacturing, whereas they represent just below 90% of value added in local services such as real estate.

Manufacturing firms are increasingly using services as part of their business processes – in the development and sale of products, and for horizontal business activities such as accounting and logistics.

On the production side, services are often used to increase productivity and reduce costs. Manufacturing firms also use services to upgrade the quality of their products, for which they charge a premium to customers (Nordås, Kim, 2013). They can use complementary or embedded services to differentiate their products from those of their competitors and to reduce the price elasticity of demand. Producing better quality products can also help firms build up long-term relationships with customers. The increased use and offering of services by manufacturing firms is analysed via a range of indicators which show how and where services are being used in manufacturing and how their use is changing over time (EU Industrial Structure, 2011).

## 4. EU economic productivity

This part analyses the patterns of industrial productivity across EU Member States using a series of indicators of output, labour productivity and innovation. While the first part covered the short term and recent past, here we analyse developments over a longer period and gauge trends in economic activity across sectors. The analysis naturally reflects the negative effects of the financial crisis, from which EU industries are still recovering (O'Mahony, van Ark, 2003; Greiner, Semmler, Gong, 2005).

To properly analyse production and productivity trends, we focus on the use and availability of inputs such as labour, human capital and energy which, together with technological progress, are among the strongest determinants of long-term growth. When relevant, we compare the EU performance with other countries, in particular the USA (Johnson, Noguera, 2012, pp. 224-236).

First part focuses on output and employment growth, analysing the performance of different sectors. Industrial performance is examined with a long-term perspective in order to capture the main trends. Second part analyses labour productivity and costs. We compare indicators like the unit labour costs (ULCs) across different sectors in the EU. Access to, and use of, energy and raw materials factors are analysed in section 3. section 4. studies the skill and technology content of industrial output and section 5 examines investment from both the supply and demand sides.

### 4.1. Output and employment growth in the EU

The data show that the high-tech and service industries are those helping the European economy most to recover from the economic and financial crisis (Barlevy, 2007, pp. 1131-1164; Varangis et al., 2004).

We analyse the growth of output using data on value added and production (the main difference being that the latter includes intermediate consumption). The sources used for this report provide data on production in real terms only for the *Manufacturing* and *Mining* sectors. The advantage of using 'value added' data is that they are available for all activities, from agriculture to non-business services (Leontief, 1986). Also, Eurostat's definition of 'production' excludes the service sectors.

Production, as proxied by value added in constant prices, grew steadily in most sectors up to 2008, when the financial crisis broke out. *Industry* is defined here as an aggregate composed of *Mining & quarrying*, *Manufacturing* and *Water supply & waste management*. The only sector which appears not to have been affected is *Non-market services*, although many governments have cut their spending in order to consolidate public finances. The *Information & communication* sector has continued to grow but the growth rate has slowed down since 2008. The largest impacts were felt on *Industry* and especially *Construction*, where the crisis pushed value added down to 2000 levels.

The sectors experiencing faster demand growth and higher productivity (typically high-tech manufacturing and knowledge-intensive services) also display the highest growth in production and value added in the EU. Conversely, low-tech manufacturing industries (e.g. those producing textiles, clothing and footwear) and *Mining* display slow or negative growth and have been in decline for a long time.

The recent financial crisis and the subsequent recession hit low-tech industries harder. These are more sensitive to fluctuations in demand and to competition from low-cost countries.

Financial crises have a relatively more severe impact on capital-intensive industries, since the need to rectify balance sheets in the financial sectors tends to create liquidity constraints that are stricter than in 'normal' recessions. High-tech manufacturing and knowledge-intensive service sectors experienced sustained growth despite the financial crisis. Fast-growing sectors include *Housing activities,* together with non-market services[6].

Using production values, we can break down the analysis of the manufacturing and mining sectors to distinguish between *textiles*, *clothing* and *leather*, for example (Eurostat, 2008; Eurostat, 2013). While manufacturing industries, as an aggregate, grew by 1.2% a year between 2001 and 2012, total *mining & quarrying* declined by 2.6%. Some low-tech manufacturing and mining industries declined considerably, however: *clothing*, *leather*, *coal & lignite* and *metal ores* declined by between 4% and 6% per year in 2001-12. High- and medium-/high-tech industries (depicted in green), which include *pharmaceuticals*, *motor vehicles* and *computers*, grew by 2-4% a year, while low-tech industries declined by roughly 0.5%. The analysis of the sectors can be refined using a lower level of aggregation. Studying production growth rates at three-digit

[6] This might seem surprising, but the sector should not be confused with the construction sector, which did not grow at all between 2001 and 2011. There is a high degree of heterogeneity in the mining & quarrying sector which is masked by the Figure because of the level of aggregation.

NACE level offers a more detailed view of EU manufacturing and mining sectors in 2001-12 (Eurostat, 2008; Eurostat, 2013).

In a breakdown according to the two-digit NACE classification, industries such as *Fabricated metals* and *Repair and installation* grew less than total manufacturing. At three-digit NACE level, however, some of their sub-industries (e.g. *Forging of metal*) grew more. Most of the clothing industries experienced a decline. The industries producing optical instruments grew the fastest. Industries producing motor vehicles and electrical equipment were also among the fastest growing sectors at three-digit level. Textile industries, which have been in long-term decline, are among the sectors with the poorest developments.

Many Member States are still making great efforts to ensure a full recovery from the negative effects of the financial crisis. This is borne out by employment developments over time. Total employment grew between 2000 and 2008, but then fell by 2.3% so that overall growth in 2001-10 was only 0.6%, showing how strongly the financial crisis affected our economies. Most of the growth was in the service industries. This is not surprising since those industries are more labour intensive, have lower labour productivity growth rates and are less sensitive to business fluctuations.

The employment trends are influenced by increasing labour productivity growth and a shift away from labour-intensive industries in the EU. The labour-input developments (over time and across industries) reflect the output developments in mining and manufacturing observed in the previous subsection. Low-tech industries such as *tobacco, textiles* and *clothing,* and the capital-intensive mining industries experienced the biggest declines.

Employment decreased more in mining than in manufacturing between 2001 and 2012. While in the mining sector, fewer employees worked more hours, for manufacturing as a whole the opposite applied, with hours worked falling by more than employment (Eurostat, 2008; Eurostat, 2013).

Labour costs and labour productivity are two fundamental determinants of firm competitiveness. In this section, we analyse indicators which reflect different industries' performance in terms of labour productivity, unit labour costs (ULCs) and relative prices. These indicators are closely related to each other: by increasing productivity, firms can lower their prices. For firms producing homogenous goods and facing strong price competition from low-cost countries, reducing ULCs is the key to remain competitive.

The negative cyclical developments in *Industry* can be analysed from the point of view of the strong decline of labour productivity following the outbreak of the financial crisis).

Labour productivity is a measure of the amount of final goods and services produced by a unit of labour input in the course of a given period of time. Excluding intermediates, labour productivity also measures the ability of workers to generate income given the state of technology and other inputs (Duran, 2011).

While technology is the key determinant, changes in labour productivity are not necessarily a result of technical change. It also depends on other inputs, such as capital or intermediates. For example, all else (including technology) being equal, increasing capital per worker (capital deepening) can increase labour productivity. In the longer term, however, technical change in a broad sense is the main source of labour productivity growth, which in turn is the main source of economic growth. This is the dynamic underlying the sustained growth of *per capita* income that has transformed our societies since the inception of the Industrial Revolution, which is why aggregate labour productivity attracts so much attention. On closer inspection, changes in sectoral labour

productivity also reveal important trends in our economies. For instance, the faster productivity growth of manufacturing as compared with services explains why workers are increasingly employed in the service sector. Productivity differentials with other countries also explain comparative advantages and, ultimately, the observed specialisation patterns.

Labour productivity is measured by the ratio of value added to hours worked. The use of value added (production minus intermediates) ensures that intermediates are not imputed more than once. When 'hours worked' data are not available, it is common to use value added per person in employment (employees plus the self-employed). Estimating value added at the sectoral level is more difficult and the available data are less recent than data on production. In practice, therefore, production is often used instead of value added to estimate productivity, particularly to assess latest developments in the very short term (i.e. before data on value added are available). But data on production also include intermediates and this induces measurement errors that have to be borne in mind when interpreting production per unit of labour input (productivity based on gross output Duran, 2011).

Over the whole 2001-12 period, annual labour productivity growth rates were highest in high-tech industries such as *Pharmaceuticals* and *Computers, electronic & optical*. Some low-tech industries such as *Beverages* also performed well. The lowest growth rates were in low-tech industries such as *Leather & footwear*, where labour productivity growth was negative (Eurostat, 2008; Eurostat, 2013).

Comparing EU and US manufacturing industries reveals that labour productivity growth in the USA was higher between 2001 and 2012: on average 3.7% as compared with 2.6% in the EU[7].

Most of this gap appeared at the beginning of the millennium, but the EU also experienced a much larger decline in 2008-10 (Eurostat, 2008; Eurostat, 2013). This can be explained by the fact that, during recessions, employment and the number of hours worked tend to adjust much faster in US manufacturing than in the EU. Therefore, the different dynamics of the Latour market make productivity more pro-cyclical in the EU.

Long-term growth can be achieved by improving the quality and the mix of different input factors. The combination of input factors and available technologies determines what and how much economies are able to produce and, ultimately, the growth rate over time. This section examines the role of human capital and technology as fundamental inputs in the production process.

The adoption of a particular technology determines how efficiently input factors are combined. The long-term growth of a sector depends significantly on the availability of the best technologies. This section presents indicators describing the technologies of EU industries from different angles. The indicators measure the different stages of the R&D&I process: R&D expenditures can be regarded as input indicators, while patents and the introduction of new and/or improved products measure output (Barlevy, 2007, pp. 1131-1164; European Commission, 2008).

However, these indicators are not perfect. Patent statistics can underestimate or overestimate the importance of innovation. Being granted a patent does not necessarily mean that a firm will be able to market a new product. In practice, more than one patent is often granted for the same product, as firms try to protect their innovations by strategically applying for a series of 'surrounding' patents (OECD, 2007).

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[7] Labour productivity growth is measured as changes from a quarter in year n relative to the same quarter in year *n-1*.

In 2012, R&D expenditures represented 2.06% of GDP in the EU-28, which marked a minor improvement from 2011 (2.04%). In the USA, R&D expenditures amounted to 2.67% of GDP in 2011[8].

Due to the insufficient coverage of R&D statistics across sectors and countries, we are unable to analyse developments after 2007. In that year, R&D expenditures represented 1.85% of GDP in the EU and 2.62% in the USA (most of the difference is accounted for by private R&D in the business enterprise sector).

We formed an EU aggregate to analyse R&D expenditures relative to value added) in each manufacturing sector. Manufacturing represents more than 80% of total R&D expenditures in the EU. The analysis focuses on business enterprise R&D expenditures (BERD) by economic activity. Government expenditures in sectoral R&D are not reflected in the data.

At this level of aggregation (ISIC Rev. 3.1), the EU rarely shows a higher intensity, the most notable exception being the chemical industry. This conclusion is confirmed by analysing the relatively similar distributions of Total expenditures across manufacturing industries). Thus, it seems that the aggregate differences observed are due not to the sectoral structure, but rather to overall lower R&D investment across all sectors (OECD, 2007).

Patent statistics are often used to compare the output of the innovation process across countries and industries. Although subject to uncertainty and biases, indicators of patenting and the underlying statistics provide valuable information about technological progress (Griliches 1984; Griliches, 1990, pp. 1661-1707; Silverman, 2002).

Patent statistics are a measure of the output of firms' research. They provide information on a wide range of manufacturing sectors. Given the coverage over several years, the dataset can be used to analyse trends and correlations with other economic variables. For example, as data are available for many countries, it is possible to calculate the performance of an EU sector relative to that of the rest of the world.

To analyse EU patenting performance relative to that of other countries, we use a patent indicator (PAT) which measures manufacturing industries' knowledge specialisation by the number of patent applications (Griliches, 1990, pp. 1661-1707). We relate the number of patent applications of a given EU manufacturing sector to total EU manufacturing patent applications. This is then related to the number of patent applications from the same sector at world level relative to the number of total patent applications in manufacturing in the world:

$$PAT = \frac{\frac{PAT_i^{EU}}{\sum_i PAT_i^{EU}}}{\frac{PAT_i^{World}}{\sum_i PAT_i^{World}}} \tag{3}$$

where:
$PAT_i$
*EU*: number of patents filed by EU industry '*i*' $\Sigma i\ PAT_i$
*EU*: number of patents filed by all EU manufacturing industries $PAT_i$
*World*: number of patents filed by world industry '*i*' $\Sigma i\ PAT_i$
*World*: number of patents filed by all manufacturing industries in the world.

[8] More recent USA data unavailable.

Different types of indicator can be used to measure innovation. Some quantify inputs, while others measure results. The approach of this publication is specifically sectoral and therefore we use only indicators, linked to EU policies, which provide a cross-sectoral view of innovation inputs and outputs.

Different indicators are better suited to measuring different types of innovation (product innovation, process innovation, market innovation and organisational innovation). The indicators we selected are R&D expenditures and the number of patents. These are the most commonly used indicators, but they have some limitations, generally providing a better estimate of research activities in manufacturing than in services[9].

Research and development (R&D) is one of the many activities carried out in an innovation process. R&D comprises basic research, applied research and experimental development. The indicators used to measure it are usually either R&D expenditures or R&D personnel.

In a knowledge-driven economy, R&D expenditure is not the only sign of innovation. Other indicators can be used to measure inputs that are intrinsically conducive to progress. Expenditures on software, training, organisation, for instance, also quantify the innovation effort.

Innovations in service activities are not well captured by the R&D indicator. They often involve software applications and research in social sciences that are not properly accounted for in R&D expenditure surveys, which focus more on technological R&D than on social science (Miles, 2007, pp. 249-268; European Commission, 2008). This publications focuses on R&D expenditure and the analysis of innovation is therefore more accurate as regards manufacturing than services. In their national surveys, different countries allocate large, multi-sector enterprises' R&D expenditures to different economic sectors. Similar R&D expenditure can be categorised in different industries across countries.

Firms engage in R&D&I activities in order to develop new products or improve the existing ones. They can do this by engaging in:

- product innovation, thus differentiating their products and making demand less sensitive to price changes;
- process innovation, thus increasing productivity or lowering production costs;
- marketing innovation, thus implementation of a new marketing concept or strategy;
- organizational innovation, thus improving the enterprise's business practices, workplace organisation or external relations.

It is possible to use three indicators from the 2010 Community Innovation Survey (CIS):

- the proportion of innovative firms per sector (any type of innovation);
- the percentage of enterprises which introduced products that were new to the market and;
- the share of firms that introduced process innovation.

Data shows the proportion of innovative enterprises by sector. Manufacturing industries tend more than service industries to engage in innovation activities. The sectors producing pharma-

[9] A different set of output indicators is used for the Innovation Union Scoreboard:
– Proportion of SMEs introducing product or process innovations, or marketing or organisational innovations;
– Proportion of high-growth firms;
– Proportion of employment in knowledge-intensive activities (manufacturing and services);
– Contribution of medium and high-tech product exports to the trade balance;
– Proportion of knowledge-intensive services exports;
– Sales of new-to-market and new-to-firm innovations as a proportion of turnover;
– Licence and patent revenues from abroad as a proportion of GDP.

ceuticals, tobacco, computers, chemicals and beverages have a relatively higher proportion of innovative enterprises. Few firms in low-tech manufacturing industries (such as clothing, wood and leather), or in industries like construction and services (administrative support, hotels and restaurants) engage in innovative activities (OECD 2012; Barlevy, 2007, pp. 1131-1164).

## 5. International competitiveness of the EU economy

This part analyses the external competitiveness of the EU industries using trade and FDI data. It covers trade in both goods and services and also contains a section on foreign direct investment (FDI), which is important for understanding the effect of internationalisation on European industries.

EU is the world's largest trade bloc. Extra-EU (EU exports to countries outside the European Union) trade accounted for 16% of world trade in 2010 (Eurostat, 2010). Exports of manufactured goods account for more than 80% of EU exports of goods. Machinery and vehicles make up for some 42%, while other manufactured goods and chemical products accounted for 23% and 16% respectively. The share of services in extra-EU trade of goods and services increased over time until 2009 to 30% from which it declined to some 27% in 2011 (Eurostat, 2010; Eurostat, 2013).

The importance of trade varies substantially between different Member States. Exports and imports are very large relative to GDP in Ireland and Luxembourg while the external sector is much smaller in countries such as Greece and Spain. On average, exports and imports amounted to 45% and 43% respectively of GDP in the EU in 2012.

The EU-27 has a large share of world trade in manufactured goods: exports originating in EU-27 countries (including intra-EU trade) accounted for 37% of total world exports in 2011. *The importance of the single market is illustrated by the fact that a quarter of total world exports took place within the EU-27*. Asia, North America and the EU accounted for about 80% of total world export flows (OECD, 2011)[10].

In 2011, the main destinations for extra-EU-27 exports to non-EU countries were Asia, North America and Central and Eastern Europe which together amounted to more than 60% of total

[10] The regions are as follows. **Other Western Europe**: Iceland, Norway, Switzerland. **Central and Eastern Europe**: Albania, Armenia, Azerbaijan, Belarus, Bosnia Herzegovina, Croatia, Georgia, Kazakhstan, Montenegro, Rep. of Moldova, Russian Federation, Serbia, TFYR of Macedonia, Turkey, Ukraine. **North America**: Canada, US. **Latin America**: Argentina, Bahamas, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Rep., Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Dutch Antilles, Nicaragua, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay, Venezuela. **Middle East**: Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Occ. Palestinian Terr., Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen. **Asia**: Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, China, Hong Kong SAR, China, Macao SAR, Dem. People's Rep. of Korea, India, Indonesia, Japan, Kyrgyzstan, Lao People's Dem. Rep., Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Rep. of Korea, Singapore, Sri Lanka, Tajikistan, Thailand, Timor-Leste, Uzbekistan, Viet Nam. **Oceania**: Australia, New Zealand. **Africa**: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Rep., Chad, Comoros, Congo, Côte d'Ivoire, Dem. Rep. of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Togo, Tunisia, Uganda, United Rep. of Tanzania, Zambia, Zimbabwe.

EU-27 exports. While China was a large destination for Asian, exports, the Chinese market only accounted for 9.4% of the EU's exports (OECD, 2011).

When intra-regional trade is not taken into account, EU-27 imports came mainly from Asia (28.6%) and North America (22%). Asia, including India, and the EU receive more than a half of North American exports (OECD, 2011).

The EU trades mainly with partners at a similar level of development, but there are noticeable variations across sectors. The analyses below refer only to manufactured goods, so agriculture and mining (including energy) products are not included. This has a significant impact on the shares of some trading partners, e.g. Russia and the oilproducing countries.

In 2011, Russia was responsible for over a third of EU refined petroleum imports. The EU trades in manufacturing goods mainly with high- and upper-medium-income partners[11].

In all manufacturing sectors except textiles, paper, electrical equipment, machinery and motor vehicles, about half or more of the EU's exports in 2011 were to high-income countries. More than half of the EU's imports of textiles, clothing, footwear, non-metallic mineral products, computers, electrical equipment and furniture originate in low-/medium-income countries (OECD, 2011). It is interesting to compare the EU's imports of computers, electronic and optical instruments with its exports of similar goods. Over half of these EU exports are destined for high income countries. While this is a broad category, this indicates that the goods that EU industries export are of a higher quality than those it imports.

The share of EU imports from low income countries is relatively high only in clothing (18.3% of all EU imports), leather and footwear (13.9%) and textiles (12.5%). The EU imports from the US are significant in other transport equipment (54% of all EU imports in this category), pharmaceuticals (43%), beverages (28%), chemicals (23%) and machinery (23%). Japan is a large source of EU imports for motor vehicles (27%) and machinery (20%) (OECD, 2011).

China accounts for large portion of EU imports in furniture (58%), leather and footwear (52%), computer, electronic and optical equipment (47%) electrical equipment (45%), clothing (44%), non-metallic mineral products (43%), metal products (42%), Rother manufacturing (37%), and textiles (36%). Brazil captures 16% and 12% of EU imports of paper and food (OECD, 2011).

The first competitiveness indicator used here is the share of EU industry in world markets. Export market shares provide insight of the position relative to international competitors. In 2011,

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[11] We used the World Bank's classification by income level; the country groups are as follows: **High non-EU**: Australia, Bahamas, Bahrain, Brunei Darussalam, Canada, Croatia, Hong Kong SAR, Iceland, Israel, Japan, Rep. of Korea, Kuwait, China, Macao SAR, Oman, Dutch Antilles, New Zealand, Norway, Qatar, Saudi Arabia, Singapore, Switzerland, United Arab Emirates, USA; **Upper-medium**: Algeria, Argentina, Bosnia Herzegovina, Botswana, Brazil, Belarus, Chile, Colombia, Costa Rica, Cuba, Dominican Rep., Equatorial Guinea, Gabon, Jamaica, Kazakhstan, Lebanon, Libya, Malaysia, Mauritius, Mexico, Montenegro, Namibia, Panama, Russian Federation, Serbia, South Africa, Suriname, Trinidad and Tobago, Turkey, TFYR of Macedonia, Uruguay, Venezuela; **Low-medium**: Albania, Angola, Azerbaijan, Armenia, Bolivia, Belize, Cameroon, Cape Verde, Sri Lanka, China, Ecuador, El Salvador, Djibouti, Georgia, Guatemala, Honduras, Indonesia, Iran, Iraq, Côte d'Ivoire, Jordan, Lesotho, Maldives, Mongolia, Rep. of Moldova, Morocco, Nicaragua, Nigeria, Paraguay, Peru, Philippines, Timor-Leste, India, Swaziland, Syria, Thailand, Tunisia, Ukraine, Egypt; **Low**: Afghanistan, Bangladesh, Bhutan, Myanmar, Burundi, Cambodia, Central African Rep., Chad, Comoros, Congo, Dem. Rep. of the Congo, Benin, Ethiopia, Eritrea, Gambia, Ghana, Guinea, Haiti, Kenya, Dem. People's Rep. of Korea, Kyrgyzstan, Lao People's Dem. Rep., Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Nepal, Niger, Pakistan, Guinea-Bissau, Rwanda, Senegal, Sierra Leone, Viet Nam, Somalia, Zimbabwe, Sudan, Tajikistan, Togo, Uganda, United Rep. of Tanzania, Burkina Faso, Uzbekistan, Yemen, Zambia.

the EU manufacturing industries with the highest market shares were printing and reproduction of recorded media, tobacco, beverages, pharmaceuticals, paper and paper products and motor vehicles. These sectors had over 50% of the respective world markets if the EU is included[12]. Japanese industries held large shares of world exports of machinery and equipment, and motor vehicles. Relatively large market shares for US industries are found for chemicals, machinery, and refined petroleum. Chinese industries, besides having the largest shares of textiles, clothing and leather and footwear, hold relatively large market shares for furniture, computer, electronic and optical products, and electrical equipment industries[13]. The market shares are calculated on the basis of the share of exports in a particular sector divided by total exports in the sector. The EU's shares are calculated with and without intra-EU trade.

The second indicator of competitiveness is revealed comparative advantage (RCA), which compares the exports of a given sector in the EU, expressed as a proportion of the EU's total manufacturing exports, with the exports of the same sector in a group of reference countries, expressed as a proportion of their total manufacturing exports. Values over 1 mean that the EU sector performs better than the same sector in the group of reference countries, which is interpreted as a sign of comparative advantage. The RCA indicator is used to rank EU products by degree of export specialization (Balassa, 1965, pp. 99-123).

The RCA indicator for product 'i' is defined as follows:

$$RCA_i = \frac{\frac{X_{EU,i}}{\sum_i X_{EU,i}}}{\frac{X_{W,j}}{\sum_i X_{W,j}}} \tag{4}$$

where:
$X$ = value of exports; the reference group ('W') is the EU-27 plus 142 other countries (as listed in section 4.1.1 Manufactured goods).
*XEU* stands for the rest of the world (excluding intra-EU trade) and *XW* measures exports to the rest of the world from the countries in the reference group[14].

The EU has a comparative advantage in two thirds of the industrial sectors. From 2009 to 2011, the EU gained further ground in those sectors for which it has a comparative advantage and, conversely, lost some ground in those sectors where EU industry has an RCA less than 1. In 2011, the EU-27 recorded relatively high RCA's for industries producing: printing, beverages, tobacco

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[12] For the sake of comparison with its major partners, it is more meaningful to include intra-EU trade here, as the EU is major arena of international competition and is not excluded from other competitors' market shares.

[13] The market share approach favours large countries therefore it is more relevant to compare the EU as a whole with the US, Japan, China, India, Brazil and Russia. The initial size of an economy may matter in its ability to seek foreign markets. Larger countries may benefit from more resources as far a capital, labour or other factors of production are concerned. Large countries may also benefit from economies of scale as they have larger domestic markets. The emergence of China as an export nation means that market shares for other countries decrease.

[14] A disadvantage with the measure is that it can assume values between zero and infinity. See European Commission (2010a) for an alternative specification that constraints the index to range from -1 to +1 with positive values indicating revealed comparative advantages.

products and pharmaceuticals. At the bottom of the graph, computer, electronic and optical products, textiles, other manufacturing, clothing and refined petroleum have an index lower than 0.8. A number of factors should be taken into account when interpreting the results:

- the level of sectoral aggregation may mask differing performance in various categories of goods within the same group of products; this is particularly relevant for industries which have a large variety of brands and quality levels for the same type of goods;
- varying performances among Member States;
- the performance of the EU as a whole is explained in some cases by the performance of a few Member States;
- the weight of each sector and Member State in the export structure of the EU should be borne in mind to arrive at a balanced assessment of the EU's sectoral performance in external trade.

As many as 16 Member States have comparative advantages for beverages, pharmaceuticals, rubber & plastics, non-metallic mineral products and metal products. Many EU countries' manufacturing industries also have comparative advantages in the production of food, tobacco, wood, electrical equipment, motor vehicles and furniture. Cyprus, Greece, Luxembourg, Lithuania, the Netherlands, Poland and Romania all appeared to be highly specialised in tobacco products in 2011. Wood and wood products is another category of goods where many EU countries recurrently exhibit high RCAs. Comparative advantages should, at least in the long run, reflect countries' specialisation patterns. Ireland and Belgium are specialised in the production of pharmaceuticals and also have high RCAs for this industry[15]. Portugal, Italy and Romania have revealed comparative advantages in leather and footwear (Kommerskollegium, National Board of Trade, 2010)[16].

Smaller countries tend to have stronger specialisation patterns. This also applies to sectoral trade characteristics. A weakness of the RCA measure is that countries with a relatively small manufacturing industry can turn out to have high RCAs even though the industry with the high RCA consists of only a few firms but accounts for a large proportion of the country's total manufacturing exports. As regards the EU's competitors (Eurostat, 2013; OECD, 2013; WTO, 2013):

- US manufacturing industries had high RCAs in paper products, chemicals, refined petroleum products, machinery and equipment n.e.c. and other manufacturing;
- Japan has high RCAs in capital equipment, particularly motor vehicles and machinery;
- China's trade specialisation profile is strongly oriented towards textiles, clothing, leather and furniture, but it also has high RCAs in sectors such as office machinery and computers;
- Brazilian manufacturers have comparative advantages particularly in food and paper but also in basic metals, leather & footwear and wood products;
- apart from their RCAs in the production of food and textiles, Indian manufacturers are specialised in exports of refined petroleum products and other manufacturing;
- Russia has abundant natural resources, which explains the RCAs in wood products, refined petroleum products, chemicals and basic metals.

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[15] It should be noted that the statistics cannot separate between the cases of an assembling industry one country from an industry where both production and assembling takes place before the products are exported.

[16] For many industries, there exist significant differences between countries depending on where in the value chains these countries' industries are located. The case of Italy and the industry producing leather and footwear is an illuminative example. Kommerskollegium (2012) show that although the most part of production takes place in low-cost countries, 80% of the value of the shoe is "captured" by the parts of the value chain that are located in Italy.

Manufacturing industries are often classified according to technological intensities. The classifications are based on the OECD (1997) classification. According to this, R&D intensity is the main criterion for evaluating the technological content of an industry. Analyses of trade performance in the four technology categories for individual MS show that Cyprus, Hungary, Ireland and Malta have the highest revealed comparative advantages in high technology products. Conversely, Latvia and Portugal exhibit high RCA's in low technology products. As mentioned above, caution is needed when studying RCA's for individual countries. Small countries with small manufacturing industries can have high RCA's due to a few relatively large firms which export large shares of their production.

The EU-27 which has a comparative advantage of 1.14 in medium-high technology products, but it is lagging behind the US (1.22) and Japan (1.59) in this category. China has a dual structure, with a high RCA in both high-tech (1.56) and low-technology products (1.2.9) while Russia has a RCA of 2.74 in trade with medium-low technology products which includes refined petroleum products and basic metals (Eurostat, 2013; OECD, 2013; WTO, 2013).

## 6. Conclusion

It is not yet possible to assess the full impact of the latest crisis on EU industries – they are still recovering and have, with a few exceptions, still not regained their pre-crisis production levels.

The fragile recovery hinted at by positive growth in 2010-2011 was interrupted by a downturn in the business cycle and EU industries experienced a double dip. The aggregate of EU manufacturing masks significant differences between Member States. Strong recoveries can be seen in the Baltic States, Poland, Romania and Slovakia, for example, which all have regained and exceeded their pre-recession peaks. There are also significant differences between sectors. Industries producing consumer staples such as food and beverages, and pharmaceuticals, have fared relatively better than others since the outbreak of the crisis. High-technology manufacturing industries have in general not been impacted to the same extent as other industries. Overall, services have been hit less badly than the construction, manufacturing and mining industries. There are also differences across service industries, however: EU-27 market service industries, information & communication, and real estate activities have not suffered from the financial crisis to the same extent as other service sectors.

The growing share of services in GDP is explained by higher income elasticities of demand for services, which tend to shift final demand towards services, as incomes grow over time. Falling relative prices of manufacturing compared to services due to higher productivity growth in manufacturing also tend to reduce the relative share of manufacturing in nominal terms. With respect to employment, the sectoral shift is even more pronounced due to the fact that services are more labour intensive and typically have lower productivity growth. The shift away from agriculture and manufacturing towards services is a worldwide trend, which has accelerated in the last decade in emerging markets as well.

Services was the largest growing sector in the world, between 2000 and 2009, whilst manufacturing declined globally, on average, by around 2.5% over the same period of time. The largest decline occurred in the EU.

Enterprise size and the share of SME's, they are socially and economically important as they represent 99% of all enterprises in the EU, have strong growth potential, and are also a major

source of new jobs. Nearly two million new SMEs are created annually in the EU. SME's tend to predominate in sectors which are less capital-intensive, and where economies of scale are not crucial. They are also strongly represented in service industries, for example retail trades, hotels and restaurants as well as business services. In general, SME's are under-represented in manufacturing, whereas they represent just below 90% of value added in local services such as real estate and environmental remediation. Large enterprises represent more than 80% of value added in industries producing tobacco, oil refining, logistics, motor vehicle, air transport and other transport equipment.

The inter-linkages between manufacturing and services are growing. Manufacturing firms are increasingly using services as part of their business processes. Firms use services in the development of products, in the sale of products, and for horizontal business activities such as accounting and logistics. On the production side, the motivation for using services is often to increase productivity and reduce costs. Manufacturing firms also use services to upgrade the quality of their products for which they charge a premium to customers.

Manufacturing is changing from being dominated by machine operators and assembly line workers to a sector which relies more and more on service occupations and service inputs. This shows up in the increased share of employees with services related occupations, including activities such as R&D, engineering design, software design, market research, marketing, organizational design and after-sales training, maintenance and support services. As manufacturing firms are using more services, they are also increasingly trying to innovate in the use of services to improve their business.

Firms try to increase their competitiveness by lowering costs, increasing productivity and innovating products and processes. These efforts spur growth and create employment. However, an analysis of EU economic sectors, over the period 2001-2010. In the aftermath of the latest crisis, EU manufacturing has managed to reduce labour costs and increase productivity. In particular, high-tech industries have been the main engine of growth. They have been more resilient to the negative effect of the financial crisis thanks to higher productivity and limited dependence on energy. Due to the high cost of energy within the EU, the specialization into high-tech and low energy intensive industries is crucial for the strategic positioning of the industries in the global value chain.

World trade flows mostly involve developed countries. Most high-income countries' trade takes place with other high-income countries. In all manufacturing sectors except textiles, paper, machinery, electrical equipment and basic metals, half or more of EU-27 exports are to high-income countries. The highest market shares for EU manufacturing industries are in printing and reproduction of recorded media, tobacco, beverages, pharmaceuticals, paper and paper products and motor vehicles. These are the sectors where the EU has highest revealed comparative advantage and export specialization. China accounts for large portion of EU imports in furniture (58%), leather and footwear (52%), computer, electronic and optical equipment (47%) electrical equipment (45%), clothing (44%), non-metallic mineral products (43%), metal products (42%), other manufacturing (37%), and textiles (36%). China has comparative advantages in both high-tech and low-tech manufactures.

Increasing global trade flows have been accompanied by even stronger growth in global capital flows, including foreign direct investment (FDI). EU Member States together account for a significant proportion of global FDI flows (around 22% of inflows and 30% of outflows), but both inflows and outflows have been badly hit by the crisis. In 2010, EU FDI inflows were ap-

proximately a third of their 2007 level and outflows had fallen even further. Stocks of inward and outward EU FDI are concentrated in the financial and real estate sectors. Financial intermediation, real estate and business activities represent about three-quarters of overall outward stock and about two thirds of inward stock.

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Chapter 2

# The Conditionings of Building and Measuring the Enterprise Competitiveness Level[1]

*Katarzyna Kotulska*

## 1. Introduction

Competition is one of the most important mechanisms of the free market and a permanent element of the market economy, and competition among enterprises is its most significant aspect. At present, the concepts of enterprise competitiveness are determined by new conditions of the competitive environment, and the globalization process taking place gives a new dimension to competitiveness. What is indicated is the international character of conducted activities and possessed competitive advantages. Until recently, the differences between the conditions of intra-country and international competition were indicated clearly; now, the differences are beginning to blur. Enterprise competitiveness is taking on a universal character, applying to both local and international competitiveness (Pierścionek, 2000, pp. 1-2). Moreover, broadly understood competitiveness depends on internal factors, on the enterprise itself, it arises from the firm's potential or policy. Thus, it is a multi-faceted phenomenon, which leads to differences in defining it, the effectiveness of applied competitive strategies and quantification problems.

## 2. The notion of competitiveness

The contemporary understanding of competitiveness shaped over the years of the history of economic thought and is a result of numerous research into that problem, and it is primarily characterized by variety. The research into this field of economic knowledge uses a number of economic concepts which create certain general framework of reference for the development of the theory of competitiveness.

An interesting notion is defined by T. Sztucki, according to whom it is a set of actions by means of which market participants, in their strive for the fulfillment of their interests and making profit, present to buyers offers which are more beneficial than other firms' offers, for the purchase

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of more attractive goods and services, sold at better prices and with strongly influencing promotion (Sztucki, 1996, p. 30). The competitiveness of enterprises is usually defined as a capability of competing, and the obtained result (the result of competing) or a capability of achieving a beneficial result in the future is a determinant of competing. Such understanding of competition creates a lot of research problems.

What can prove the complexity of the problem are difficulties with working out a univocal and commonly accepted definition of competitiveness, but also the ways of its measurement and assessment, as well as its research methodology. A variety of the ways of perceiving and defining enterprise competitiveness inclines to create and adopt a very general concept of the issue, which will include both the problems of acceptability of products and services, as well as winning and using resources or the profitability of a firm in the long run. Therefore, we can claim that enterprise competitiveness is an ability to compete effectively on the market (Jaworek, Szałucka, 2007, pp. 195-197).

Traditional concepts of enterprise competitiveness focus on the basic market factors of competitiveness and their direct sources, among which the most important ones include (Pierścionek, 2003, p. 200):

- the concept of cost competitiveness, based on the effects of large scale production, specialization, standardization and the effects of experience,
- quality leadership and quality management systems,
- competing based on the enterprise market power,
- marketing concept of competitiveness,
- cost leadership and differentiation.

In the conditions of the globalization of economy and an increasing level of the integration of individual countries, competitiveness understood in the microeconomic sense, thus, enterprise competitiveness, is more and more conditioned by the level of development and the effectiveness of the functioning of the economy of the whole country. It means that the competitiveness level of a specific enterprise and its ability to achieve an advantage over other firms to a great extent depends on the economic situation of the native country from which a given country comes, or the territory in which it conducts its business activities, that is, on the competitiveness level of the national economy. That, in turn, is also a vague notion, having an internal, external, static and dynamic dimension. On the other hand, the basic aspect of the competitiveness of economy is thought to be the ability of domestic enterprises to cope in the face of international competition, both operating on a foreign market and competing on the domestic market with foreign firms. However, the competitiveness of economy is not a simple sum of the competitiveness of enterprises, but both processes are interdependent and closely related to each other.

Due to the conditions in which businesses are forced to compete, it seems justified to take into consideration the issue of the internationalization of the operations of enterprises.

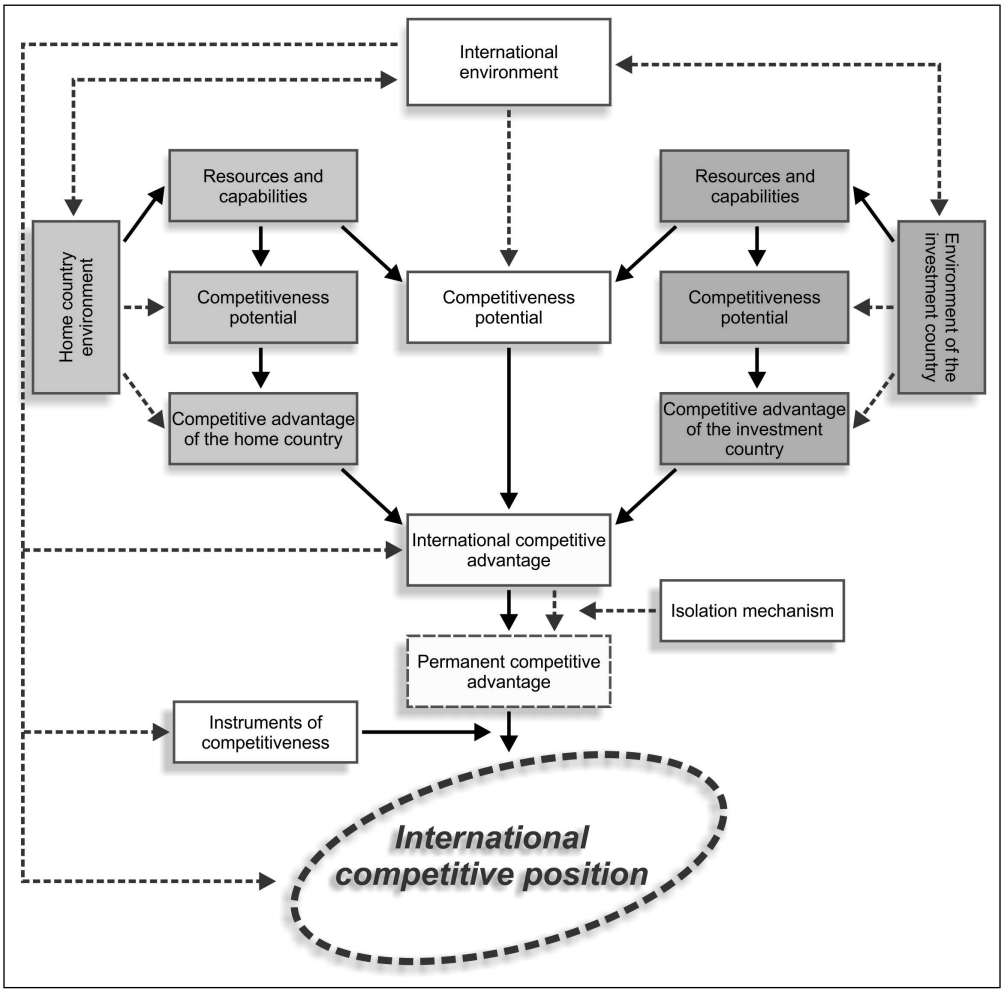
In order to illustrate and sum up the analyzed problem in full, Figure 1 presents enterprise competitiveness in the international scale as a system shaped greatly by its macro and micro-environment. The external environment of a firm is beyond the competitiveness system, not constituting its integral element. However, it performs a significant role in co-creating enterprise competitiveness, exerting an indirect impact on individual elements of the competitiveness system and strengthening or weakening an enterprise's ability to compete effectively (Jaworek, Szałucka, 2007, pp. 495-497). The external environment creates the conditions for the functioning of a firm and influences the creation of its opportunities and threats, initiating the reactions of entities to its changes, and the manner of the co-creation of competitiveness.

Thus, special attention should be paid to the fact that enterprise competitiveness depends on the competitiveness of the national economy to which a given business belongs. The national economy is responsible for external factors within which the entity operates and which it can use. They include various factors (Konkurencyjność polskich…, 2004, pp. 9-11):

- material (telecommunication, IT, transport, scientific infrastructure),
- access to raw materials and capital,
- law system,
- tax system,
- labour market,

other immeasurable factors (e.g. image of the country, safety).

Figure 1. The competitiveness model of an enterprise conducting its business activities outside the home country




Source: Brdulak, Gołębiowski (ed.), 2005, p. 497.

Structural elements, being the sub-systems of the enterprise competitiveness system are subject to particular influences of the environment among which interactions occur.

They include (Kotulska, Kulisa, 2007, pp. 42-43):

1. C*ompetitiveness potential* – constitutes the entirety of tangible, intangible, human and capital resources of an enterprise.
2. *Competitive advantage* – an effect of the use of the enterprise competitiveness potential in such a way which would enable to create an attractive market offer and effective instruments of competing.
3. *Instruments of competing* – measures used by an enterprise in order to win buyers of the goods offered now and in the future.
4. *Competitive position* – the result of competing obtained by an enterprise, the place of the enterprise on the market, determined on the basis of the competitive strategy implemented by the enterprise.

The competitiveness measure of an enterprise is its position on the market and the assessment in the eyes of a customer, therefore, we can assume that a firm is competitive if the actions it undertakes in the strategic perspective lead to the growth of its market value. The opponents of such an interpretation will claim that competitiveness should be assessed from the point of view of an increase in the number of customers and profits generated in a short-term. The claim that competitiveness is the result of an effective struggle for customers, primarily loyal customers, is becoming commonly accepted. Contemporary businesses primarily try to distinguish their offer against other rivals and show a measurable set of benefits which their services or products provide to customers, which is also related to competition in prices and quality.

Competitiveness can be also perceived as a goal of enterprise activities, boiling down to meeting customer needs more effectively and efficiently than other businesses (Świtalski, 2005, pp. 165-166). Enterprises which wish to maintain their competitive position on the market permanently, have to constantly invest in innovations and the development of their products and services or offer clear price benefits. The best enterprises successfully combine knowledge about the future of the market with established competence-based management, never becoming complacent because they care about uniqueness more than about market share. They put pressure on the development of the organization's culture, and top executives are the major initiators of innovations in them (Bailom, Matzer, 2009, pp. 59-80). Knowledge becomes the main, unique, strategic resource on the basis of which an advantage should be built on contemporary markets. However, it is also a very specific resource, coming into the context of other "soft" resources, particularly resources like organizational culture, intra-organizational relations, the systems of motivation, communication, as well as interactions and relations with the environment. A lot of those resources form as a result of long-term accumulation of experiences collected in specific technical and technological, economic, legal, political, cultural conditions in which a given enterprise functioned or functions (Stankiewicz, 2006, p. 14).

Thus, enterprise competitiveness on the market is an effect of the synergic influence of numerous internal factors, inherent to an enterprise, and external mechanisms and conditionings existing in the environment. They can be understood as an ability to develop, achieve benefits and profits, as well as to build a competitive advantage (Dobiegała-Korona, Kasiewicz, 2000, p. 89). It can be strictly linked to a well-thought over, effective and realistic developmental strategy which has been implemented effectively. However, it is worth mentioning that choosing and designing a proper strategy is only the first step on the long way to success. A real determinant of enterprise competitiveness is a capability of fulfilling the adopted strategy in practice.

The opinion is very true because enterprise competitiveness is undoubtedly conditioned by the external environment, however, it is also influenced by distinctive resources, key competences, skills and capabilities the firm possesses (Pierścionek, 2006, p. 26). In the management practice, an integrated approach should be applied, namely competitive advantages should be built based on the use of the resources of knowledge, the development of unique and difficult to imitate key competences to adapt to the changing requirements of customers, considering transformations in the market environment – arising opportunities and chances for development.

Competitiveness can be analyzed and assessed on a various level of economic processes. Competitiveness on the micro level is interpreted as an ability to achieve and maintain a competitive advantage or position by an enterprise. An analysis on the mezo-economic level concerns studying the competitiveness of an industry or a branch, and mega/meta-level is the examination of joined group of countries.

As in the examination of national competitiveness, in the case of enterprise competitiveness it is possible to study factor-based competitiveness and result-based competitiveness (Stankiewicz, 2002, pp. 87-88). Factor-based competitiveness (qualitative factors) defines a long-term ability of a firm to react fast to changes in the conditions of the environment, an ability to use its favourable configurations, competent use of its own resources and available external resources, as well as the rationality of decision-making processes. It considers the assessment of such soft factors as customer satisfaction, loyalty, familiarity with the firm and its products on the market, frequency of the purchase of a specific product, the evaluation of qualitative features of the product against competitors, etc.

Result-based competitiveness (quantitative factors) defines the results achieved by an enterprise in the competition process, primarily considering financial results (e.g. profitability level and other results against the results of firms of a given market segment), as well as marketing results (e.g. market share, an increase in the share market). In the literature, result-based competitiveness is often identified with the competitive position achieved by an enterprise (Bieńkowski, 1995, p. 32), and factor-based competitiveness – with enterprise competitive advantage (Gorynia, 2000, p. 114).

For full and correct analysis, enterprise competitiveness should be discussed in the static approach and the dynamic approach. The notion of competitiveness in the static approach expresses an ability of an entity to specific competitive behaviours in a given moment. According to the other approach, it is about an analysis of factors determining a long-term ability to compete, thus, changes occurring in time (Bieńkowski, 1995, p. 21). The approach has great practical qualities, although it is much more difficult to identify and assess dynamic and developmental factors which define an ability to achieve, maintain, and even improve the achieved competitive position in the future. The value of such knowledge from the point of view of the rationality of decisions taken in the enterprise and the choice and shaping of competitive strategies is very big.

## 3. The methods of measuring competitiveness

The measurement of competitiveness refers to defining the competitive position of an enterprise. A competitive position is both an effect of competitive actions taken so far but it is also the base for subsequent ones, and its assessment becomes a key issue (Niezgoda, 2005, pp. 15-23).

The methods of measuring enterprise competitiveness by the scope of analysis can be divided into:

**Methods basing on the assessment of the effects of the enterprise activities** – consists in the application of two basic, synthetic indicators: a firm's market share and the profitability level. The market share of a firm presents the level of the firm's adaptation to the preferences of the consumers, also including price. The bigger share of a firm in a specific market segment, the better adaptation of the firm to the value system characteristic for a given market segment. Another indicator of the assessment is profitability, however, it is not possible to assess the enterprise competitive position in the case of a high market share (even the position of a leader) and simultaneous negative profitability in the long run. A high market share is maintained artificially (e.g. via dumping), and negative or low profitability proves the lack of the adaptation of a firm's resources to competition in a given sector. However, significantly higher profitability of a given firm in the long run in spite of much lower market share can mean a stronger and more stable competitive position of a firm – in this situation a firm has a possibility to lower the prices and increase its market share. Thus, the indicators should be analyzed jointly. An advantage of the aforementioned indicators is the simplicity of their structure and a relatively easy access to data necessary to establish them. However, their usefulness to determine the enterprise competitive position is denied by numerous authors. They think that the market share of an enterprise and its financial standing are not sufficient to assess the competitive position and should be completed by so-called soft factors (Pierścionek, 2003, p. 184).

**Methods basing on comparative assessments of the most important qualities from the point of view of consumers** – created on the basis of factors determining the choice of the offer of enterprises by customers and their weight (significance) in taking decisions. If we assume that in a specific market segment, in a specific period of time, e.g. quality, price and service were the most important for choosing the offers, the assessment of competitiveness of a specific strategic entity (SSE) will consist in the comparison of the quality, prices and service of a given firm in the comparison of the same factors of competitive enterprises. The method mainly assesses not the competitiveness of the same product/service but rather the reasons for the competitiveness. Competitiveness is a result of adequate shaping of factors determining the choice of a specific offer by the recipients (segment), and market share is the result of competitiveness.

**Methods basing on the assessments of the factors of production of an enterprise (the assessment of resources, competitive potential)** – consist in assessing the factors of production existing in a specific enterprise. Comparative analyses concern the skills of the workforce of a given firm, its costs, technological, marketing, skills, management, financial resources, location, contacts, etc. It is particularly appropriate for the assessment of the competitiveness of specific enterprises. It defines a firm's capability of monitoring changes in market preferences, and an ability to adapt to those changes, namely: to launch new products, promotions, changes in management, also for diversified firms – a business which represents an adequate, more sustainable portfolio of products and markets (based on the BCG product portfolio analysis), represents higher competitiveness.

**Mixed methods** – the methods are based on the assessment of the effects of competitive activities of an enterprise and on comparative assessments of qualities significant for consumers, and on the assessments of the factors of production. Portfolio methods and the method of key success factors are examples of mixed methods. In the BCG model, competitive force is evaluated in comparison with the leader's position. It is a relatively strict criterion – in a stable oligopoly,

the second or third position on the list assures a high profit rate and a stable, high competitive position. The method of key success factors enables to synthesize numerous parameters and determine their weight (Gorynia (ed.), 2002, pp. 73-74).

The assessment of enterprise competitiveness to a great extent concentrates on the analysis and assessment not only of the result of competing itself but also of sources of competitive advantage, and a necessity to establish the hierarchy of the importance of their proposed measures and their hard to measure character cause that the assessment is characterized by a high level of subjectivity.

## 4. The problems choosing methods and measures of the assessment of enterprise competitive position

Enterprise competitive position can be defined by means of various measures and methods, and their proper choice is a key issue. Moreover, performing correct and reliable assessment and measurement of enterprise competitiveness will be hindered by the following problems (Olczyk, 2008, pp. 47-48):

1. The lack of a univocal definition and various interpretations of the notion of competitiveness.
2. The lack of univocal guidelines according to which measures are adequate to assess the enterprise competitive position and which will allow to show its real situation in this area objectively.
3. The lack of adequate statistical data and obstructed access to information on competitors (the problem is visible with regard to small enterprises in particular).
4. A big share of hard-to measure factors, so-called soft factors, in the competitiveness level assessment.
5. Tthe results obtained by means of one method must be confronted with results obtained by means of other methods, tools, due to possible errors in the interpretation and a subjective assessment of soft factors.
6. A dynamic character of competitive position – the assessment of enterprise competitive position refers to the result of competing ex post and is only the basis for undrtaking actions to improve or maintain it.

The above obstacles are the reason for which it is difficult to indicate commonly accepted measures of the enterprise competitive position. In the process of applying strategic analysis methods and formulating a methodological approach with the use of those methods, the following issues are very important: research goals, research problems, hypotheses put forward, adopted time perspective of the assessment and an adequate choice of measures and methods of measuring competitiveness. An additional problem consists in an international character of enterprises whose competitiveness is measured in the aspect of various markets on which the competitive position can vary, but also an enterprise as a whole, regardless of the area of operations. Depending on the approach, methods are differentiated and the choice of the criteria of assessing a competitive potential or advantage are individualized.

In order to meet the requirements of growing competition, enterprises have to learn to function in the conditions of constant changes, accurately predicting the future and choosing an appropriate operating strategy, which will significantly influence the effects of their operations, thus, also the level of the implementation of the adopted goals. It should be emphasized that the achieved

position, as well as specific competitive advantages of an enterprise are not permanent, but they are characterized by a specific durability with regard to constant endeavours and actions of competitors. Therefore, the shaping of enterprise competitiveness should take a form of a permanent, cyclic process. Maintaining the value of a broadly understood offer of an enterprise on the market is possible only when a competitive advantage will be based on the factors which will enable the appreciation of the satisfaction achieved by buyers in the long run.

Regardless of the fact whether an enterprise operates on the domestic or the international market and what its size is, the examination and assessment of the conditionings of enterprise competitiveness enables to isolate factors which shape their competitiveness, and owing to it, the choice of an appropriate competitive strategy.

## 5. Conclusion

The measurement of competitiveness consists in the determination of enterprise competitive position which is an effect of strategic competitive operations but it is also a basis of future decisions.

Competitive position can be defined by means of different measures and methods but proper selection is the key issue. Therefore, the correct assessment and measurement of enterprise competitiveness is very difficult and numerous barriers make it impossible to indicate one generally accepted proper measure of the competitive position of enterprises.

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Chapter 3

# The Position of European Transition Economies in Contemporary Foreign Direct Investments Flows

*Nenad Stanišić, Gordana Marjanović, Nenad Janković*

## 1. Introduction

Inclusion of the country into the global economy flows on the principles of comparative and competitive advantage leads to an increase in economic prosperity of the country, as evidenced by numerous empirical studies at the end of the last and the beginning of this century, which proved a positive relationship between the degree of openness of the economy and its long-term economic growth and which is particularly clearly shown in the group of small economies. Therefore it is no surprise that one of the main pillars of the model of transition imposed on former socialist European economies (most of which are small economies) was the liberalization of trade and capital flows. Quick opening to the world, especially to the developed West, in terms of significant differences in development and technological equipment, implied the necessity of rapid structural reforms, a significant increase in the rate of investment, technological leap, as well as the inclusion of transition economies in global distribution flows and production chains. Given the low level of domestic savings, insufficient for dynamic economic growth, the inflow of foreign capital was a necessary condition for a successful transition, and if one bears in mind all the other, listed above, transition "necessities", it is clear that among all types of the inflow of foreign capital, foreign direct investment can be singled out as the most preferred.

When it comes to the method of FDI entry in this group of countries, privatization is central (brownfield investment), with an emphasized dominance of this type of investment in the early stages of transition. The utilization of a monopoly position in the domestic market and conquering the market was often a motive for this type of investment. In economies which have completed the process of privatization, there is a need to create investment environments that will be attractive for Greenfield as well, i.e. non-privatized foreign investment. Such investments are economically desirable and export-oriented, and their main motivation is to use the benefits of cheap and skilled labor force, on the one hand, and trade privileges in the EU market which these countries achieve on their road to full membership in the EU, on the other hand (Bevan, Estrin, 2004; Christie, 2003).

Not all European transition countries were equally successful in attracting FDI. There are some arguments that today's European transitional economies (and we are especially interested in Western Balkan countries) are not equally successful in FDI attracting as are the former transitional economies, now members of EU. The institutional framework and legal security in the EU and more developed economies are observed as two main arguments for that claim. In order to explore that claim, the objectives of this paper are:

- to analyze the tendencies in world FDI flows from 2000 to 2013,
- to compare the scope and volatility of FDI inflows in selected groups of countries (Western Balkan – WB and EU members from "Eastern enlargement of EU").

Based on that aim of the paper, the following hypothesis will be tested statistically:

1. The net FDI inflow as a percentage of GDP is statistically different between EU transitional economies and WB transitional economies.
2. The volatility of net FDI inflow is statistically different between selected EU economies and WB transitional economies.

The rest of the paper consists of three sections and a conclusion. In the next section the data and methodology will be explained. Basic characteristics of FDI inflows in selected countries will be discussed in the Section 3. Results of the comparison of characteristics of FDI inflows in selected countries groups as well as the results of statistical tests of the hypothesis will be presented in this section, too. Final section concludes.

## 2. Data and methodology

This paper will analyze the scope and volatility of FDI inflows in the following two groups of countries:

- Group 1: EU member states: Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia,
- Group 2: Western Balkan countries: Albania, Bosnia and Herzegovina, Montenegro, Serbia, Macedonia.

The period of observation is from 2000 to 2013, and data are extracted from UNCTAD database. Even at the first look on the data the big differences between these two groups can be noticed. The GDP of selected EU states are 13 times bigger than GDP of WB, while the net FDI inflows in EU states are 7 times bigger than in WB. However, the measure of the FDI inflow that we are going to use in this analysis is the ratio of FDI inflow and GDP. This measure is more suitable then absolute FDI inflows due to different economic sizes of selected countries.

The other point of interest – the FDI inflow volatility, will be measured by the coefficient of variation, which is a standardized measure of dispersion of a frequency distribution. It is defined as the ratio of the standard deviation to the mean.

In order to test the hypothesis we will utilize the Welch's t-test (or unequal variances t-test). This statistical method is used to test the hypothesis that two populations have equal means. Welch's t-test is an adaptation of Student's t-test, and is more reliable when the two samples have unequal variances and unequal sample sizes. These tests are often referred to as "unpaired" or "independent samples" t-tests.

## 3. The scope and volatility of FDI inflows in selected economies

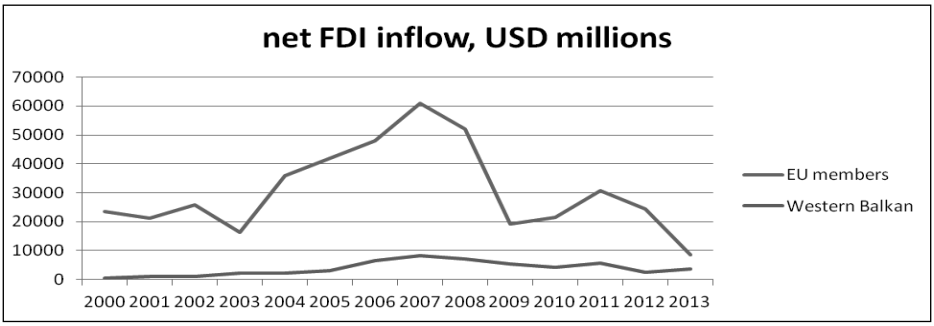
Differences between European countries in transition in terms of the beginning time of the transition process, the rapidity of its implementation, success on the road to EU membership, political stability, and the existence of conflicts caused the different patterns of FDI inflow (Brada, Kutan, Yigit, 2006; Kalotay, 2010). Region of Central Europe, which was first launched in transition in conditions of relative political stability, was the first to attract foreign investors since the beginning of the last decade of the twentieth century. A group of Baltic countries (Lithuania, Latvia, and Estonia) soon joined the Central European countries, as an attractive destination for FDI, and in the second half of the 1990s FDI arrives in Romania and Bulgaria in significant extent. The Western Balkan countries, burdened by war conflicts and the creation of nation-states, are late with the beginning of transition, thus an increased FDI inflow into the country practically began at the end of the twentieth century. At the beginning of the XXI century there was a significant increase in FDI in all transition countries, and a kind of investment boom lasted until the outbreak of the global economic crisis in 2008. The maximum FDI inflow, as observed for all countries together, and by region (Central Europe, Baltic region, Eastern Balkans – Romania and Bulgaria, and Western Balkans), was recorded in 2007 and 2008 before the outbreak of the crisis. FDI inflow in five countries of Central Europe (Poland, Czech Republic, Slovakia, Hungary, and Slovenia) reached a maximum in 2007, and amounted to about 33 billion dollars. In the same year the maximum FDI inflow was recorded in the Baltic countries (about 7 billion dollars). While in these countries in 2008 was already happening substantial decline in investments under the influence of the outbreak of the global crisis, the Balkan countries just then recorded the maximum FDI inflow (about 24 billion dollars in Romania and Bulgaria, and about 13 billion dollars in the Western Balkans). Therefore, the Balkans felt the crisis with a one-year delay in terms of FDI inflows, in relation to Central Europe.

In the entire observed period, foreign investors were the most interested in the region of Central Europe, and this region recorded the highest FDI in each year respectively, which has not changed even with the global economic crisis. The highest percentage drop in FDI was recorded in Romania and Bulgaria, so the inflow of FDI in these countries in 2012 was at the level of the Western Balkans inflow (about 4 billion), despite nearly twice as higher FDI inflow in 2007. In the same year, the countries of Central Europe have attracted about $20 billion of FDI, and Baltic countries slightly over 3 billion dollars. In all the groups of transition countries, the initial shock of the crisis was followed by a brief recovery inflow of foreign investment (the exception of recovery are Romania and Bulgaria), but then came a new drop (the exception of the second drop in FDI inflow are the Baltic countries).

The global economic crisis has dramatically decreased the inflow of foreign capital in transition countries. The total FDI inflow in all observed transition countries along with about $75 billion in 2007 declined to about $34 billion 2009, which represents more than halved FDI inflow. The extent of the decline in FDI inflow during the economic crisis is evidenced by the fact that FDI globally decreased in the same period by 39% and in the group of developing countries by only 10%. In its scope, the decline in FDI inflow in transition countries observed during the crisis is equal in its size to the decline in investment in developed countries (about 55%). Thus, the pattern of FDI inflow in transition countries follows the pattern of FDI inflows in developed countries rather than in developing countries!

The net FDI inflows in selected groups of countries (11EU members previously transition economies and 5WB countries in transition) are displayed on Figure 1. During the whole observed period, selected EU countries were more successful in attracting FDI. Maximum FDI inflows were reached in 2007, before the world economic crisis, as it was the case on the global level, too. Since 2009, the FDI inflows have the "W" pattern, which is also case with developed economies, but not with the developing economies in the world. Comparing our selected groups of countries, the FDI inflows decline was much more prominent in 11EU countries than in 5WB countries. In 2013, the net FDI inflow in 11EU countries was bellow 10 US dollars billions, compared with more than 60 USD billions in 2007. In WB group, net FDI inflow declined from approximately 9 USD billions to approximately 4 USD billions.

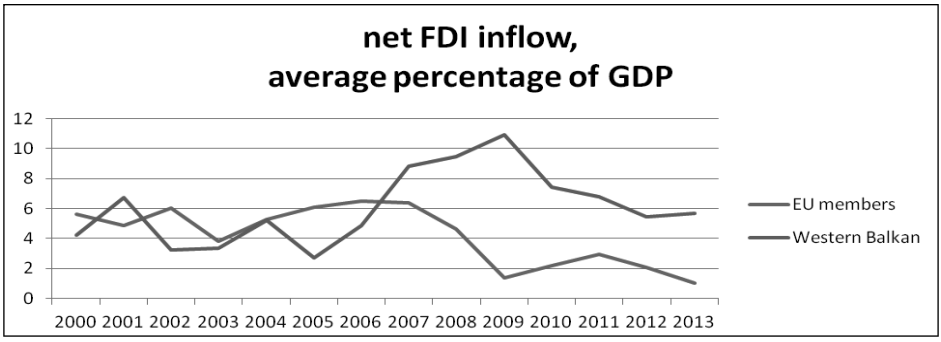
Figure 1. Net FDI inflows in selected groups of countries, 2000-2013




Source: UNCTAD database.

Taking into account the different size of the European transition economies, we get a better picture of the attractiveness of certain groups of countries as an investment destination. Figure 2 displays the net FDI inflows as a percentage of GDP. Measured in this way, FDI inflows look different. Since 2007, the FDI/GDP ratio is higher in WB group. In 2013, the FDI inflows as percentage of GDP were almost 6% in WB and approximately just 1% in selected EU members. The sharper decline of FDI inflows in case of selected EU countries than WB countries after the outbreak of the crisis is now even more obvious.

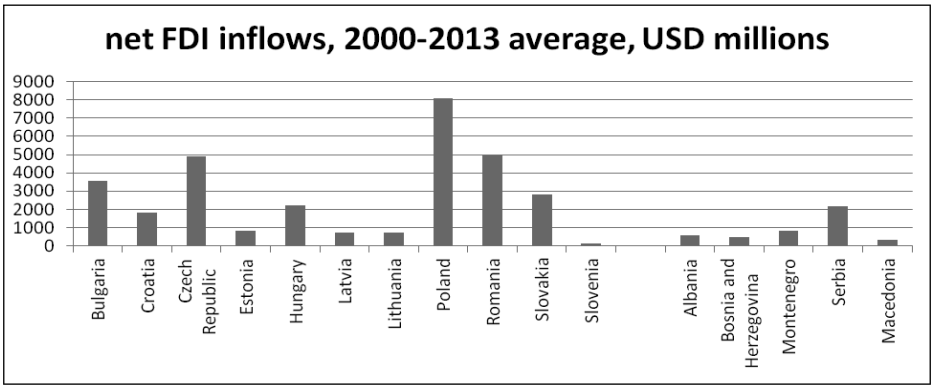
Figure 2. Net FDI/GDP ratio for selected groups of countries, 2000-2013




Source: UNCTAD database.

New insight into the FDI inflows in selected economies is provided on Figure 3, which presents the FDI inflows in millions of US dollars at the individual country level. Now, the heterogeneity of the two groups with respect of FDI inflows can be observed. Partly, this heterogeneity can be explained with different sizes of economies within the groups of countries. Highest FDI inflows in EU group had Poland (approximately 8 billions dollars annually on average. Czech Republic, Romania, Bulgaria and Slovakia follow the Poland in the 11EU group. Within the WB group, the most successful in attracting of FDI was Serbia with 2 billions dollars annually on average. However, it is obvious that 11EU countries attracted more USD billions of FDI than 5WB countries on average.

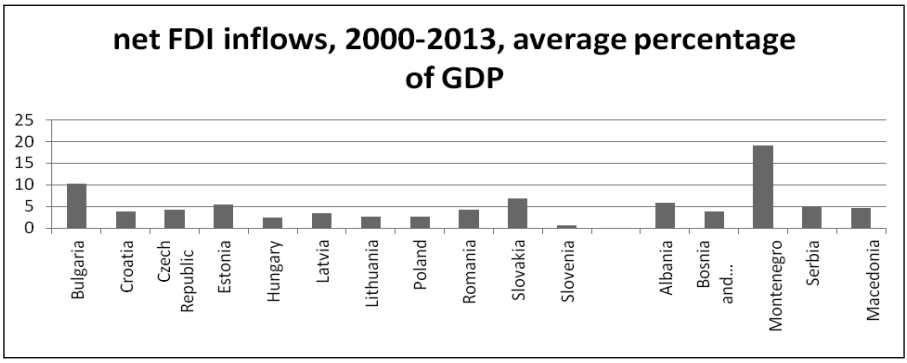
Figure 3. Net FDI inflows in selected countries, 2000-2013




Source: UNCTAD database.

The picture of FDI inflows significantly changes when we look at FDI inflow and GDP ratios (Fig. 4). Now, the 11EU group does not look more attractive for FDI than WB group, on average. Within the EU group, Bulgaria had the highest FDI/GDP ratio (approximately 10%), followed by Slovakia and Estonia. On the other side, Montenegro had more than 18% of FDI/GDP ratio on average during the observed period. However, Montenegro is the exception, giving the small size of its economy. All other countries of WB group are comparable with selected EU economies in respect of FDI/GDP ratios. Thus, we need to employ some statistical method to draw the conclusion how different are these two groups in attracting FDI as a percentage of national GDPs. The first hypothesis that we have tested statistically is that net FDI inflow as a percentage of GDP is statistically different between these two groups of countries. The results of the Welch's t-test suggest that two populations (11EU and 5WB countries) do not have statistically different means. This means that we can confirm our first hypothesis and conclude that countries of two observed groups do not differ in FDI inflows, measured by FDI/GDP ratio, within the period from 2000 to 2013.

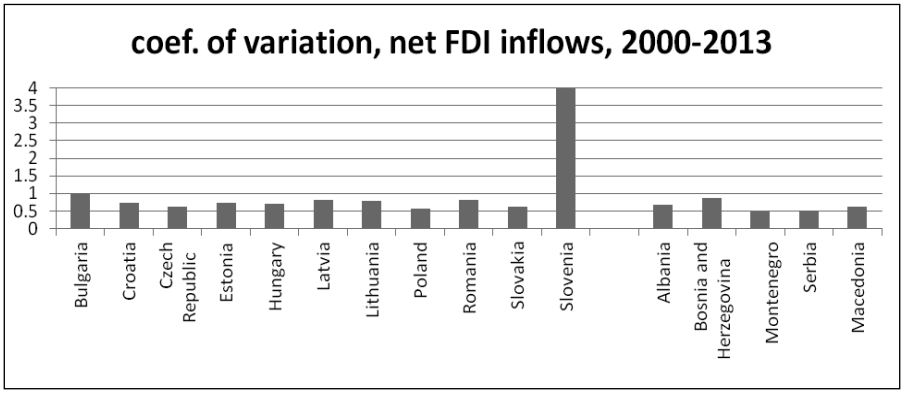
Figure 4. Net FDI/GDP ratio for selected economies, 2000-2013




Source: UNCTAD database.

Another significant characteristic of FDI inflows – their volatility, was the subject of the second statistical hypothesis that the volatility of net FDI inflow was statistically different between selected EU economies and WB transitional economies. Figure 5 gives us a first intuition. Excluding Slovenia, which experienced the significant volatility of FDI inflows during the period from 2000 to 2013, all other countries in both groups look much the same in respect of coefficient of FDI inflows variation. Indeed, Welch's t-test confirms this intuitive conclusion: countries of two observed groups do not differ in volatility of FDI inflows, measured by coefficient of variation, within the period from 2000 to 2013.

Figure 5. Coefficient of variation of FDI inflows in selected economies, 2000-2013




Source: UNCTAD database.

## 4. Conclusion

Foreign direct investment, due to not only the inflow of the missing capital, but also technology transfer and the inclusion of countries in the global production and distribution flows, is considered one of the most popular form of foreign capital inflow. This is particularly true in terms

of a relatively sudden and rapid transition from socialist to capitalist economy, which was implemented or is still being implemented in the countries of Central and South-eastern Europe. Changing the approach to FDI and the desire to attract more foreign investors caused the increase in FDI inflows in transition countries.

The global economic crisis affected the reduction of FDI volume in the world as expected, but it also influenced the structural changes in the patterns of FDI inflows among groups of countries. It can be concluded that after the outbreak of the global economic crisis pattern of FDI inflow in transition countries follows the pattern of FDI inflow in developed countries rather than in developing countries.

Differences between European countries in transition in terms of the beginning time of the transition process, the rapidity of its implementation, success on the road to EU membership, political stability, and the existence of conflicts caused the different patterns of FDI inflows. Having all of that at mind, the argument emerged that nowadays transitional economies of Western Balkan are not equally successful in attracting FDIs as former transitional European economies, now members of EU. This paper has analyzed the differences in scope and volatility of FDI inflows between these two groups of countries. Due to different number of group members and different economic sizes of observed countries, the scopes of FDI inflows were measured as net FDI inflows and GDPs ratios. The volatilities of FDI inflows were measured by coefficient of variation. Statistical tests conducted on UNCTAD data for the period from 2000 to 2013 confirm that countries of two observed groups do not differ both in FDI inflows, measured by FDI/GDP ratios, and in volatility of FDI inflows, measured by coefficients of variation.

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Chapter 4

# The Impact of Foreign Direct Investments on the Economic Growth of Advanced Transition Countries

*Ljiljana Maksimović, Gordana Radosavljević*

## 1. Introduction

At the end of the 90's of the twentieth century, socialist countries experienced economic collapse and were forced to accept the neo-liberal concept of transition, proposed by the Washington Consensus.

Due to the lack of domestic savings, transition countries have sought to attract more foreign direct investments (FDI). The main promoters of FDI are transnational corporations (TNC), which have a wide network of branches located all over the world, over which they control the production, distribution of products and services, as well as research and development.

The privatization of state-owned enterprises was the most important activity of the transition and it included the removal of limitations on foreign investments. This allowed TNC, based in developed countries, to expand business activities to transition economies. TNC bought the state-owned enterprises (mergers and acquisitions) in the process of privatization or invested in new facilities (Greenfield investment). The main motives of TNC to invest abroad are: resource seeking FDI; market seeking; efficiency seeking; and strategic asset seeking (Duning, 1994, pp. 37-61).

All of the above motives of TNC for the investment abroad may be reduced to a common denominator, which is profit. The question is whether the motives of TNC can be complementary with the aspiration of countries, FDI recipients, to stimulate their economic growth with these investments.

## 2. Review of previous studies on the effects of FDI on economic growths

Studies that explore the relationship between FDI and economic growth have been performed since 1995 until today, for different groups of countries and for different time periods.

Results of these studies are opposite, which can be explained by the following reasons: the development levels of countries included in the analysis are different; institutional characteristics of the countries analyzed and their trade policies are different; research methodology is different as well.

Joseph Stiglitz (2004, pp. 57-71) thought that FDI was not likely to spur economic growth in the process of privatization of state-owned enterprises, as revenues from privatization are mainly used for consumption and not for investments. The integration of financial markets in which international banks buy domestic banks is more likely to have negative effects on economic growth. Foreign banks are guided by the profit motive rather than the encouraging of economic growth and financing of small and medium enterprises of the FDI host countries. Mencinger (2004, pp. 121-132) came to the conclusion that the correlation between FDI and economic growth in eight countries in transition – candidates for the EU in the period 1994-2001 was negative, implying that FDI slowed down the convergence of these countries to the EU. Mencinger explained his conclusions by the fact that the dominant form of FDI in the surveyed countries was the acquisition of state-owned enterprises. However, the acquisitions cannot be considered investment in real assets, as revenues from sales are spent on consumption and imports.

Mencinger (2009, pp 3-14) showed on the example of eight advanced countries in transition (the Czech Republic, Estonia, Latvia, Lithuania, Hungary, Poland, Slovenia, Slovakia), that in the period between 1996 and 2008 the outflow of profit on the basis of FDI was higher than the value of the FDI input flows, which led to a negative net financial position of the observed group of countries.

Kovačević (2009, pp. 15-28) has confirmed that FDI are substantial but insufficient source for covering the current account deficit in the transition economies, therefore they increased their indebtedness abroad.

## 3. Hypotheses and research methodology

The paper tested the following hypotheses:

a) there is a statistically significant relationship between FDI inflow and economic growth in the advanced transition economies;
b) greater inflow of FDI is not associated with a higher current account deficit;
c) greater inflow of FDI is related to the rise of foreign debt.

In testing the above hypotheses, simple statistics was used:

a) the correlation coefficient between the average share of FDI and GDP and average GDP (r GDP) growth in the period between 2004 and 2013 is analyzed for the group of advanced transition countries, EU members, and for each country individually;
b) the ratio between the share of the current account in GDP and the share of FDI in GDP for the observed countries is analyzed;
c) the ratio between the share of foreign debt in GDP and the share of FDI in GDP in 2013 is analyzed.

## 4. Research results

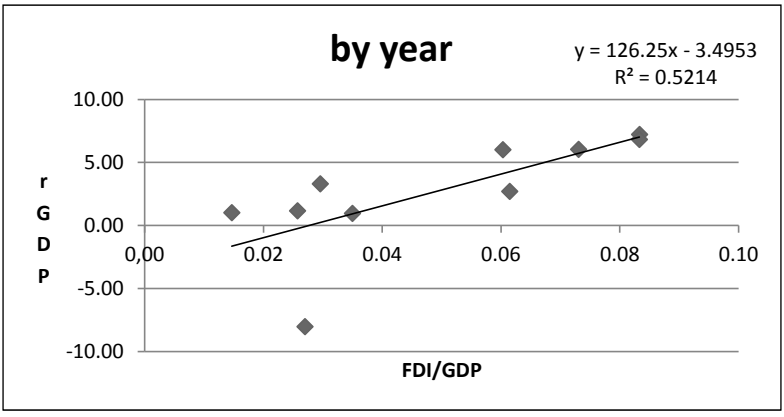
By applying simple statistics, a statistically significant relationship between economic growth and the ratio of FDI and GDP for the group of advanced transition economies in the period between 2004 and 2013 was confirmed. There is a positive correlation between growth and FDI in nine out of ten years, and negative and insignificant in 2012.

Table 1. FDI and GDP growth by year

| Year | Average FDI/GDP | Standard deviation | Average rgdp | Standard deviation | Correlation coefficient |
|---|---|---|---|---|---|
| 2004 | 6.03% | 0.0340 | 6.02% | 1.6481 | 0.3239 |
| 2005 | 7.31% | 0.0542 | 6.04% | 2.2227 | 0.4231 |
| 2006 | 8.33% | 0.0572 | 7.23% | 2.1034 | 0.1820 |
| 2007 | 8.33% | 0.0744 | 6.83% | 2.8730 | 0.0627 |
| 2008 | 6.14% | 0.0462 | 2.71% | 3.6080 | 0.2471 |
| 2009 | 2.70% | 0.0330 | -8.01% | 5.5090 | 0.0194 |
| 2010 | 2.57% | 0.0204 | 1.17% | 2.1383 | 0.3976 |
| 2011 | 2.95% | 0.0137 | 3.31% | 2.8093 | 0.0708 |
| 2012 | 3.50% | 0.0312 | 0.96% | 2.5726 | -0.0152 |
| 2013 | 1.47% | 0.0164 | 1.02% | 1.6662 | 0.2257 |

Source: authors own calculation.

Figure 1. FDI/GDP and GDP growth rate correlation, by year




Source: authors own calculation.

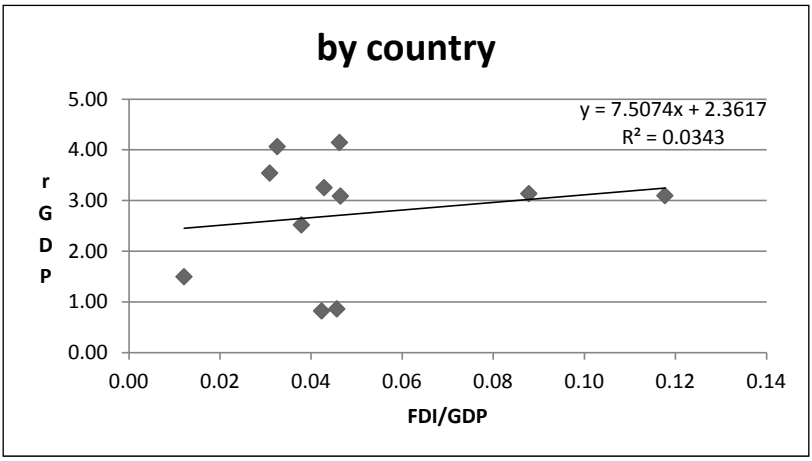
The average FDI in the 2004-2013 period was 4.93 percent ranging between 11.77 percent in Bulgaria and 1.21% percent in Slovenia, while the average growth of GDP by 2.73 percent was ranging between 4.14 percent in Slovakia and 0.82 percent in Croatia. Correlation coefficients between growth and corresponding FDI are positive for each country.

Table 2. FDI and GDP growth by country

| Country | Average FDI/GDP | Standard deviation | Average rGDP | Standard deviation | Correlation coefficient |
|---|---|---|---|---|---|
| Bulgaria | 11.77% | 0.0963 | 3.09% | 4.0537 | 0.7004 |
| Croatia | 4.23% | 0.0282 | 0.82% | 3.9623 | 0.4073 |
| Czech Republic | 3.79% | 0.0228 | 2.52% | 3.7700 | 0.6473 |
| Estonia | 8.78% | 0.0514 | 3.13% | 7.5147 | 0.1647 |
| Hungary | 4.57% | 0.0293 | 0.86% | 3.3331 | 0.1977 |
| Latvia | 4.29% | 0.0254 | 3.25% | 8.7398 | 0.7893 |
| Lithuania | 3.09% | 0.0186 | 3.54% | 6.9831 | 0.7671 |
| Poland | 3.26% | 0.0209 | 4.06% | 1.8808 | 0.8370 |
| Slovakia | 4.62% | 0.0348 | 4.14% | 4.3164 | 0.7235 |
| Slovenia | 1.21% | 0.0171 | 1.49% | 4.4703 | 0.8213 |
| Romania | 4.65% | 0.0305 | 3.09% | 4.7381 | 0.7732 |

Source: authors own calculation.

Figure 2. FDI/GDP and GDP growth, by country




Source: authors own calculation.

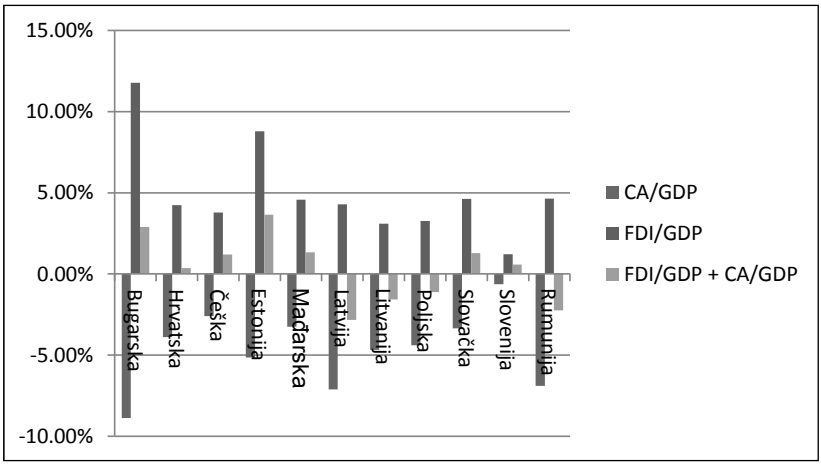
In testing the second hypothesis, the following was confirmed: in the case of six countries (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Slovakia, Slovenia) the current account deficit in GDP (CA/GDP) is less than the FDI/GDP, and in the case of four countries (Latvia, Lithuania, Poland, and Romania) the higher the inflow of FDI into the country is accompanied the higher current account deficit.

Table 3. Current account and FDI

| | CA/GDP | FDI/GDP | FDI/GDP + CA/GDP |
|---|---|---|---|
| Bulgaria | -8.88% | 11.77% | 2.89% |
| Croatia | -3.88% | 4.23% | 0.36% |
| Czech R. | -2.59% | 3.79% | 1.20% |
| Estonia | -5.14% | 8.78% | 3.65% |
| Hungary | -3.24% | 4.57% | 1.33% |
| Latvia | -7.11% | 4.29% | -2.82% |
| Lithuania | -4.67% | 3.09% | -1.58% |
| Poland | -4.38% | 3.26% | -1.12% |
| Slovakia | -3.34% | 4.62% | 1.28% |
| Slovenia | -0.63% | 1.21% | 0.58% |
| Romania | -6.89% | 4.65% | -2.25% |

Source: authors own calculation.

Figure 3. Current account and FDI




Source: authors own calculation.

The question is whether the greater share of FDI stock in GDP is accompanied by greater foreign debt? Results for 2013 are contradictory: for Bulgaria the share of debt/GDP is equivalent to the share of stock of FDI/GDP; for the Czech Republic and Slovenia the share of debt in GDP is less than the share of FDI stock in GDP. For other countries the share of debt in GDP is significantly higher than the share of FDI stock in GDP.

Table 4. Debt/GDP and FDI stock/GDP (2013)

| | Debt mil. US $ 2013 | Debt/GDP 2013 | FDI stock mil. US$ 2013 | FDI/GDP 2013 |
|---|---|---|---|---|
| Bulgaria | 52,553 | 99% | 52,623 | 99% |
| Croatia | 46,710 | 81% | 32,484 | 57% |
| Czech Republic | 125,105 | 63% | 135,976 | 69% |
| Estonia | 25,213 | 101% | 21,451 | 86% |
| Hungary | 157,330 | 119% | 111,015 | 84% |
| Latvia | 44,316 | 143% | 15,654 | 51% |
| Lithuania | 33,710 | 72% | 17,049 | 37% |
| Poland | 352,024 | 68% | 252,037 | 49% |
| Slovakia | 80,400 | 84% | 58,832 | 61% |
| Slovenia | 13,321 | 28% | 15,235 | 32% |
| Romania | 133,996 | 71% | 84,596 | 45% |

Source: authors own calculation.

## 5. Factors that limit the impact of FDI on economic growth

The analysis showed that FDI stimulated economic growth in the advanced transition economies. However, in the case of the four countries, with the growth of FDI the current account deficit was growing as well, and the increase in FDI stock in GDP was accompanied by a growing foreign debt.

The question is what are the factors that diminish the positive impact of FDI on economic growth? Many experts are unanimous on the importance of the following factors: macroeconomic stability; sectorial orientation of investments; the quality of human capital; development and quality of institutions.

Today, many economists emphasize the importance of institutions for economic growth (Estrin, Uvalic, 2013). Many papers on the importance of institutions for economic growth were written, but no research project did interested professional public as the book by Daron Acemoglu and James Robinson, Why Nations Fail (2014). The authors came to the conclusion that the main reason for the fail of nations lies in institutions – political and economic (Acemoglu, Robinson, 2014, pp. 54-55). Primacy is given to good economic institutions as the basis for economic growth and development. However, economic institutions are shaped by political institutions. The main assertion of the authors is that in countries where there is a long tradition of good (inclusive) political institutions, such as the constitution, stable legal system, rule of law, independent judiciary, competent government that is on the one hand accountable to citizens and on the other hand prevents elite's dominance, they have stimulating effect on economic institutions. The authors point out that bad institutions hamper economic development, limit competition, favor elite by preventing entry of other economic entities into the market with various barriers enabling the appropriation of rents by the elite. The authors conclude that the important causes of poverty lie in the domination of the political elite in power, abuse and violation of property rights, and elimination of economic and personal freedom. Authors Meyer and Sinani (2009, pp. 1076-1091)

showed that FDI can produce positive effects on economic growth only if the recipient country with a high level of GDP has an efficient institutional infrastructure and developed human resources.

The World Economic Forum (WEF) shows the condition of institutions in the advanced transition economies as one of the pillars of the competitiveness of nations, within the calculation of the Global Competitiveness Index.

According to the World Economic Forum, Bulgaria, Slovakia, Romania and Croatia have the worst institutions. In general it can be said that the group of advanced transition economies did not eliminate favoritism in decisions of government officials, burden of government regulation, inefficiency of legal framework, wastefulness of government spending, and judicial dependence.

Table 5.

| **Country** | **GDP, US$ bill.** | **GDP/pc US$** | **GDP as share (%) of world total** | **GCI (144) rank** | **Institutions rank** | **The most problematic institutional factors** |
|---|---|---|---|---|---|---|
| Bulgaria | 53.0 | 7,328 | 0.12 | 54 | 112 | Favoritism in decisions of government officials<br>Public trust in politicians<br>Judicial independence |
| Croatia | 58.1 | 13,562 | 0.09 | 77 | 87 | Burden of government regulation<br>Efficiency of legal framework in setting disputes |
| Czech Republic | 198.3 | 18,858 | 0.33 | 37 | 76 | Public trust in politicians<br>Burden of government regulation<br>Efficiency of legal framework |
| Estonia | 24.5 | 19,032 | 0.03 | 29 | 26 | Strength of investor protection<br>Protection of minority shareholders<br>Efficiency of legal framework in setting disputes |
| Hungary | 132.4 | 13,405 | 0.23 | 60 | 83 | Burden of government regulation<br>Favoritism in decisions of government officials<br>Efficiency of legal framework |
| Latvia | 31.0 | 15,205 | 0.05 | 42 | 51 | Efficiency of legal framework in setting disputes<br>Efficiency of legal framework<br>Protection of minority shareholders |
| Lithuania | 47.6 | 16,003 | 0.08 | 41 | 58 | Efficiency of legal framework<br>Burden of government regulation<br>Wastefulness of gov. spending |

| | | | | | | |
|---|---|---|---|---|---|---|
| Poland | 516.1 | 13,394 | 0.94 | 43 | 56 | Efficiency of legal framework in setting disputes<br>Burden of government regulation<br>Efficiency of legal framework |
| Slovak Republic | 95.8 | 17,706 | 0.15 | 70 | 110 | Favoritism in decision of government officials<br>Burden of government regulation<br>Efficiency of legal framework in setting disputes |
| Slovenia | 46.9 | 22,756 | 0.07 | 70 | 75 | Efficiency of corporate boards<br>Burden of government regulation<br>Wastefulness of government spending |
| Romania | 189.7 | 8,910 | 0.33 | 59 | 88 | Wastefulness of government spending<br>Favoritism in decisions of government officials<br>Ethical behavior of firms |

This group of countries has common problems faced by foreign investors. They are faced with inefficient government bureaucracy; corruption; policy instability; poor tax regulations, high tax rates; restrictive labor regulations; and inadequate access to financing. Improvement of the business environment and good economic and political institutions will affect the scope and quality of FDI and economic growth.

Table 6. The most problematic factors for doing business (2013)

| Country | Factors |
|---|---|
| Bulgaria | Corruption; inefficient government bureaucracy; access to financing |
| Croatia | inefficient government bureaucracy; policy instability; corruption |
| Czech Republic | inefficient government bureaucracy; corruption; policy instability; |
| Estonia | inadequately educated workforce; tax rates; inefficient government bureaucracy |
| Hungary | policy instability; access to financing; corruption |
| Latvia | inefficient government bureaucracy; tax regulations; access to financing |
| Lithuania | inefficient government bureaucracy; restrictive labor regulations; tax rates |
| Poland | tax regulations; restrictive labor regulations; inefficient government bureaucracy |
| Slovak Republic | inefficient government bureaucracy; corruption; restrictive labor regulations |
| Slovenia | access to financing; inefficient government bureaucracy; tax rates |
| Romania | access to financing; tax rates; inadequate supply of infrastructure |

Source: http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2013-14.pdf.

## 6. Conclusion

In an era of financial globalization and the abolition of barriers to capital flows, many economists believe that foreign direct investments would accelerate economic growth in the recipient countries. Studies that have been performed for countries at different levels of development in different periods of time have shown that it cannot be argued that FDI always accelerate economic growth. Analysis of the impact of FDI on economic growth in the advanced transition economies showed a statistically significant relationship between FDI flows and economic growth. It has been confirmed that in countries with high level of GDP per capita, with good institutional infrastructure and quality human capital, FDI have a positive impact on economic growth. Institutions were important in the past and are important today. The conclusion is that those countries that are successful in the development of new institutions required by the modern world of intensive knowledge and global competition achieve the highest growth.

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## Appendix:

## GDP per capita, US $

| Country | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|
| Bulgaria | 3,265 | 3,761 | 4,357 | 5,568 | 6,906 | 6,523 | 6,459 | 7,302 | 7,004 | 7,316 |
| Croatia | 9,320 | 10,213 | 11,386 | 13,580 | 15,960 | 14,300 | 13,577 | 14,289 | 13,105 | 13,503 |
| Czech Republic | 11,166 | 12,713 | 14,440 | 17,458 | 21,651 | 18,804 | 18,808 | 20,362 | 18,428 | 18,525 |
| Estonia | 9,003 | 10,492 | 12,744 | 16,746 | 18,162 | 14,902 | 14,666 | 17,414 | 17,335 | 19,009 |
| Hungary | 10,074 | 10,927 | 11,167 | 13,527 | 15,351 | 12,626 | 12,731 | 13,750 | 12,490 | 13,034 |
| Latvia | 6,084 | 7,155 | 9,036 | 13,221 | 15,645 | 12,239 | 11,528 | 13,736 | 13,773 | 15,095 |
| Lithuania | 6,797 | 7,941 | 9,337 | 12,325 | 15,106 | 11,944 | 11,963 | 14,154 | 13,984 | 15,232 |
| Poland | 6,613 | 7,954 | 8,944 | 11,132 | 13,863 | 11,282 | 12,299 | 13,500 | 12,820 | 13,516 |
| Slovakia | 7,828 | 8,884 | 10,338 | 13,868 | 17,407 | 16,080 | 16,063 | 17,625 | 16,774 | 17,566 |
| Slovenia | 16,965 | 17,856 | 19,385 | 23,437 | 26,843 | 24,070 | 22,878 | 24,372 | 21,947 | 22,606 |
| Romania | 3,421 | 4,485 | 5,561 | 7,750 | 9,303 | 7,500 | 7,538 | 8,373 | 7,787 | 8,592 |

http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=88
http://www.worldbank.org/en/country/centraleuropeandthebaltics

## GDP, US $, billions

| Country | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|
| Bulgaria | 25.316 | 28.971 | 33.245 | 42.177 | 52.143 | 48.654 | 47.837 | 53.575 | 51.328 | 53.046 |
| Croatia | 41.047 | 44.851 | 49.915 | 59.427 | 69.679 | 62.293 | 58.954 | 61.550 | 55.983 | 57.371 |
| Czech Republic | 113.977 | 130.066 | 148.374 | 180.479 | 225.427 | 197.187 | 198.494 | 216.061 | 196.446 | 198.450 |
| Estonia | 12.070 | 14.022 | 16.983 | 22.257 | 24.276 | 19.701 | 19.527 | 22.824 | 22.673 | 24.888 |
| Hungary | 101.926 | 110.322 | 112.529 | 136.092 | 154.220 | 126.650 | 127.503 | 137.718 | 124.587 | 132.260 |
| Latvia | 13.738 | 15.963 | 19.872 | 28.691 | 33.612 | 25.919 | 24.144 | 28.509 | 28.394 | 30.962 |
| Lithuania | 22.656 | 26.100 | 30.240 | 39.319 | 47.483 | 37.050 | 36.709 | 43.083 | 42.339 | 46.507 |
| Poland | 252.951 | 303.930 | 341.603 | 425.543 | 529.417 | 431.254 | 469.642 | 515.516 | 490.689 | 517.705 |
| Slovakia | 42.242 | 47.976 | 55.915 | 75.143 | 94.711 | 87.460 | 87.438 | 95.971 | 91.399 | 95.805 |
| Slovenia | 34.504 | 36.401 | 39.624 | 48.181 | 55.853 | 50.372 | 48.060 | 51.299 | 46.288 | 48.005 |
| Romania | 75.795 | 99.794 | 122.696 | 170.755 | 205.790 | 164.948 | 164.781 | 183.561 | 169.177 | 188.893 |

http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=88

## FDI inward – outward flows, US $, billions

| Country | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|
| Croatia | 1,179 | 1,825 | 3,231 | 4,928 | 5,938 | 3,346 | 490 | 1,517 | 1,356 | 580 |
| Czech Republic | 4,974 | 11,653 | 5,463 | 10,444 | 6,451 | 2,927 | 6,141 | 2,318 | 7,984 | 4,990 |
| Estonia | 957 | 2,869 | 1,796 | 2,717 | 1,731 | 1,840 | 1,598 | 340 | 1,517 | 950 |
| Hungary | 4,266 | 7,709 | 6,818 | 3,951 | 6,325 | 1,995 | 2,202 | 6,290 | 13,983 | 3,091 |
| Latvia | 637 | 707 | 1,663 | 2,322 | 1,261 | 94 | 380 | 1,466 | 1,109 | 808 |
| Lithuania | 774 | 1,028 | 1,817 | 2,015 | 1,965 | -14 | 800 | 1,448 | 700 | 531 |
| Poland | 12,874 | 10,293 | 19,603 | 23,561 | 14,839 | 12,932 | 13,876 | 20,616 | 6,059 | -6,038 |
| Slovakia | 4,029 | 3,110 | 5,803 | 4,017 | 4,868 | -6 | 1,770 | 3,491 | 2,826 | 591 |
| Slovenia | 826 | 588 | 644 | 1,514 | 1,947 | -659 | 360 | 998 | -59 | -679 |
| Romania | 6,436 | 6,483 | 11,367 | 9,921 | 13,909 | 4,844 | 2,940 | 2,522 | 2,748 | 3,617 |

http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=88

## Real GDP growth rates

| Country | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|
| Bulgaria | 6.75 | 6.36 | 6.51 | 6.45 | 6.19 | -5.48 | 0.39 | 1.84 | 0.78 | 1.20 |
| Croatia | 4.13 | 4.28 | 4.94 | 5.06 | 2.08 | -6.95 | -2.27 | -0.05 | -1.98 | -1.00 |
| Czech Republic | 4.74 | 6.75 | 7.02 | 5.74 | 3.10 | -4.51 | 2.47 | 1.82 | -1.02 | -0.90 |
| Estonia | 6.34 | 8.85 | 10.10 | 7.49 | -4.15 | -14.10 | 2.56 | 9.56 | 3.94 | 0.80 |
| Hungary | 4.80 | 3.96 | 3.89 | 0.11 | 0.89 | -6.77 | 1.05 | 1.57 | -1.66 | 0.80 |
| Latvia | 8.83 | 10.10 | 10.99 | 9.99 | -2.77 | -17.70 | -1.31 | 5.31 | 5.03 | 4.10 |
| Lithuania | 7.37 | 7.79 | 7.81 | 9.80 | 2.91 | -14.85 | 1.60 | 6.05 | 3.66 | 3.30 |
| Poland | 5.34 | 3.62 | 6.23 | 6.79 | 5.13 | 1.63 | 3.87 | 4.52 | 1.94 | 1.60 |
| Slovakia | 5.06 | 6.66 | 8.35 | 10.49 | 5.75 | -4.94 | 4.43 | 2.98 | 1.80 | 0.90 |
| Slovenia | 4.40 | 4.01 | 5.85 | 6.96 | 3.38 | -7.94 | 1.26 | 0.71 | -2.54 | -1.10 |
| Romania | 8.49 | 4.15 | 7.87 | 6.32 | 7.35 | -6.58 | -1.15 | 2.16 | 0.69 | 1.60 |

http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=88
http://www.worldbank.org/en/country/centraleuropeandthebaltics

## Balance of payments, Current account net, US $, billions

| Country | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|
| Bulgaria | -1,671 | -3,347 | -5,863 | -11,437 | -11,875 | -4,256 | -796 | 56 | -499 | 963 |
| Croatia | -1,779 | -2,460 | -3,211 | -4,328 | -6,078 | -3,057 | -900 | -405 | -251 | 716 |
| Czech Republic | -5,749 | -1,210 | -3,130 | -7,940 | -4,774 | -4,849 | -7,602 | -6,114 | -2,550 | -2,853 |
| Estonia | -1,369 | -1,386 | -2,585 | -3,503 | -2,217 | 559 | 535 | 411 | -405 | -271 |
| Hungary | -8,809 | -8,238 | -8,380 | -9,962 | -11,119 | -193 | 261 | 676 | 909 | 3,904 |
| Latvia | -1,762 | -1,992 | -4,522 | -6,425 | -4,492 | 2,284 | 724 | -628 | -702 | -250 |
| Lithuania | -1,725 | -1,831 | -3,218 | -5,692 | -6,310 | 1,462 | 15 | -619 | -100 | 675 |
| Poland | -13,259 | -7,242 | -13,156 | -26,499 | -34,957 | -17,155 | -24,030 | -25,770 | -18,263 | -7,105 |
| Slovakia | -3,296 | -4,005 | -3,937 | -4,103 | -6,185 | -3,161 | -3,240 | -2,027 | 2,039 | 2,026 |
| Slovenia | -893 | -681 | -696 | -2,015 | -2,961 | -235 | -59 | 206 | 1,486 | 2,974 |
| Romania | -6,382 | -8,504 | -12,785 | -23,080 | -23,719 | -6,955 | -7,258 | -8,324 | -7,487 | -2,059 |

http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=88

## Inward FD stock, US $ at current prices

| Country | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|
| Bulgaria | 10,108 | 13,851 | 23,483 | 37,936 | 44,059 | 49,225 | 47,231 | 47,381 | 49,240 | 52,623 |
| Croatia | 12,414 | 14,548 | 27,370 | 45,056 | 31,142 | 36,898 | 35,062 | 30,874 | 31,755 | 32,484 |
| Czech Republic | 57,259 | 60,662 | 79,841 | 112,408 | 113,174 | 125,827 | 128,504 | 120,569 | 136,442 | 135,976 |
| Estonia | 10,045 | 11,279 | 12,701 | 16,762 | 16,387 | 16,812 | 16,696 | 16,961 | 19,351 | 21,451 |
| Hungary | 61,567 | 61,110 | 80,153 | 95,469 | 88,003 | 98,803 | 90,775 | 85,431 | 103,484 | 111,015 |
| Latvia | 4,529 | 4,929 | 7,476 | 10,842 | 11,537 | 11,602 | 10,751 | 12,092 | 13,577 | 15,654 |
| Lithuania | 6,389 | 8,211 | 10,996 | 15,062 | 12,949 | 13,216 | 13,271 | 14,266 | 16,033 | 17,049 |
| Poland | 86,755 | 90,877 | 125,782 | 178,408 | 164,307 | 185,202 | 215,639 | 203,111 | 235,113 | 252,037 |
| Slovakia | 28,185 | 29,595 | 38,567 | 47,713 | 50,416 | 52,537 | 50,328 | 51,980 | 55,816 | 58,832 |
| Slovenia | 7,600 | 7,236 | 8,985 | 14,375 | 15,762 | 15,307 | 14,598 | 15,158 | 15,469 | 15,235 |

http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=88

Chapter 5

# Consumers' Attitudes Towards m-Commerce: Moderating Effects of Social Influence, Innovativeness and Customization[1]

*Zoran Kalinić, Veljko Marinković*

## 1. Introduction

Mobile technologies are changing the world: due to lower costs of mobile devices and wireless network access, mobile phone has become the most widespread technological device in the world. Today, on average, almost everyone out of 6.9 billion inhabitants of the Earth has a mobile subscription i.e. mobile penetration in 2013 was 96.4% worldwide (International Telecommunication Union, 2014). In European countries, penetration rates are even higher: for example, in the European Union it's 132%, in Poland 135% (Eurostat, 2015), while in Serbia it's 128% (Republic Agency of Electronic Telecommunications of Serbia, 2014).

Contemporary mobile phones are no longer used only for voice communication, but, thanks to fast internet connectivity, for information and entertainment, and also for more sophisticated, commercial activities. Mobile commerce is usually defined as the buying and selling of goods and services through mobile devices via wireless networks (Chong, 2013a), and although it has generally been considered as special form of e-commerce (Chong et al., 2012; Lu, 2014), it offers some unique advantages like location-based services and a real anywhere accessibility. Mobile commerce had a tremendous growth over the last few years. It was estimated that in the first quarter of 2015 mobile commerce transactions, usually made using smartphones, were 34% of all e-commerce transactions (Criteo, 2015), while the world leaders were Japan and South Korea, with over 50%. In the US the mobile share was about 29%, while in the European leader in m-commerce, United Kingdom, it was more that 40%. Also, the commercial role of mobile devices should be analyzed in a broader view, as these devices are often used for price comparison, checking stocks or payments.

Mobile commerce is also attracting significant attention of academia. One of the main questions to be answered is how to attract and retain customers in m-commerce. The objective of this paper

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is to analyze the attitudes of consumers on main characteristics and determinants of m-commerce, by comparing the differences in attitudes of consumers' groups created based on different criteria.

## 2. Mobile commerce acceptance

In the literature, there are several theories and models on technology adoption behavior, including Technology acceptance model – TAM (Davis, 1989), Diffusion of innovation – DOI (Rogers, 1995), Task-technology fit – TTF (Goodhue and Thompson, 1995) and Unified theory of acceptance and use of technology – UTAUT (Venkatesh et al., 2003), and all these models and their adaptations were implemented in m-commerce adoption prediction. The research models often, besides original constructs, include external variables whose influence on m-commerce acceptance is then studied. The most frequently used variables, used also in this research, are shortly presented here.

Perceived usefulness (PU) and ease of use (PEOU) are two original TAM constructs, and they are very often used as m-commerce adoption predictors (Bhatti, 2007; Chan, Chong, 2013; Chong, 2013a; Chong, 2013b; Chong et al., 2012; Dai, Palvia, 2009; Wei at al., 2009; Wu, Wang, 2005; Zhang et al., 2012).

Trust (TR) is also very important predictor of m-commerce acceptance and its influence on consumer intention to adopt m-commerce was confirmed in many studies (Chong, 2013b; Chong et al., 2012; Leong et al., 2013; Wei et al., 2009; Zarmpou et al., 2012; Zhang et al., 2012).

Perceived cost (COST) was considered as one of the reasons that could slow down m-commerce development, especially among young consumers and in the developing countries (Chong et al., 2012; Wei et al., 2009). Cost was found as a significant antecedent of m-commerce acceptance in Chong (2013b), Chong et al. (2012), Dai and Palvia (2009), Kuo and Yen (2009), Wei et al. (2009), Wu and Wang (2005), Zhang et al. (2012), etc.

Mobility (MOB) is one of the most important differences and advantages of m-commerce over e-commerce. It enables consumers to perform true anytime, anywhere shopping. Mobility was analyzed as antecedent of m-commerce and m-services adoption in several studies (Kim et al., 2010; Mallat et al., 2009; Park, Kim, 2013; Schierz et al., 2010).

Perceived enjoyment (PE) or playfulness captures the hedonistic dimension of consumption and it was also considered as significant antecedent of m-commerce acceptance (Chan, Chong, 2013; Chong, 2013a; Chong, 2013b; Dai, Palvia, 2009; Ko et al., 2009; Zhang et al., 2012).

One of important but less often studied characteristics is customer involvement (CI), which implies that higher level of consumer involvement in the process of creating/redesigning mobile services and consumer feedback would enhance customer intention to use m-commerce and recommend it to the others.

Customer satisfaction (SAT) is one of the most significant determinants of repeated purchases, positive word-of-mouth and consumer loyalty i.e. only satisfied customers will come again and will recommend to the others (San Martin, Lopez-Catalan, 2013; Wang, Liao, 2007). Since m-commerce is still in the early stage of implementation, the number of the studies of m-commerce customer satisfaction is limited (Cho, 2008; Park, Kim, 2012; San Martin, Lopez-Catalan, 2013; Yeh, Li, 2009).

Behavioral intention (BI) represents a central concept of both TAM (Davis, 1989) and UTAUT (Venkatesh et al., 2003) models. It is often found as the best predictor of consumers' intention to

adopt of new technology (Zhang et al., 2012). Behavioral intention was researched in a number of studies of m-commerce adoption (Dai, Palvia, 2009; Chong et al., 2012; Wei et al., 2009; Zarmpou et al., 2012; etc.).

Social influence (or subjective norm) is another important and commonly used determinant of mobile commerce acceptance. It represents the extent to which the user perceives that the important others such as relatives and friends believe he should use m-commerce, but it also should include mass media like the Internet, TV, radio, newspapers, magazines, etc. Social influence is particularly important in an early stage of development or diffusion of a new technology. It was confirmed as a strong predictor of m-commerce acceptance in the studies of Chan and Chong (2013), Chong et al. (2012), Wei et al. (2009), Zhang et al. (2012), etc.

Personal innovativeness of the customer is his willingness to try out new products or services. Agarwal and Prasad (1998) found that individuals with higher personal innovativeness are more likely to adopt technological innovations earlier than other individuals. Personal innovativeness is often researched as an antecedent of m-commerce and m-service (Bhatti, 2007; Dai, Palvia, 2009; Kuo, Yen, 2009; Lu, 2014; Morosan, 2014; San-Martin, Lopez-Catalan, 2013).

Customization may be viewed as the degree to which the m-commerce provider's offer is or may be well adapted to meet heterogeneous customers' needs, personal norms and values (Anderson et al., 1997). The influence of customization on m-commerce adoption was analyzed in the studies of Morosan (2014), Wang and Li (2012), Yeh and Li (2009), etc.

## 3. Research methodology

In order to examine the attitudes of consumers on m-commerce we have conducted an empirical research on a sample of 224 respondents. The study included only those consumers who, during last year, used any kind of m-commerce. Due to the fact that mobile commerce is still relatively new activity and that its more frequent use in the Republic of Serbia can be expected in the years to come, the sample was made up of mostly younger respondents.

The questionnaire consisted of 16 statements, related to previously explained determinants of m-commerce, that were assessed on a 7-point Likert scale (1 – absolute disagreement, 7 – absolute agreement). In order to observe the attitudes of different segments of the respondents, the questionnaire also contained three control variables: social influence, personal innovativeness and customization. Also, segmentation was done on two demographic variables: age and gender. The statements were selected and adapted from relevant literature, mostly related to m-commerce adoption models (Chan, Chong, 2013; Choi et al., 2008; Chong et al., 2012; Gaur et al., 2010; Johnson et al., 2001; Kim et al., 2010; San Martin, Lopez-Catalan, 2013; Wu, Wang, 2005; Yeh, Li, 2009; Yi, Gong, 2013; Zarmpou et al., 2012). Data analysis was conducted in the Statistical Package for Social Sciences (SPSS V.20). In order to determine the difference in attitudes of the respondents, we used statistical independent samples t-test, as well as ANOVA test for the comparison of different age groups.

## 4. Data analysis and results

In the first part of the statistical analysis, all participants were divided into two groups, depending on the impact of the social environment (social influence). It should be noted that re-

spondents from both segments showed the most favorable attitudes towards ease of use and mobility aspects. In the case of the statements which reflect the aspects of ease of use, mobility, cost and the willingness of consumers to engage in the process of the improvement of existing services, no statistically significant differences were observed in the perceptions of the two segments (Tab. 1). However, respondents from the second segment have less favorable attitudes when it comes to trust and privacy protection in m-commerce. Statistically significant differences were found in terms of the usefulness and enjoyment during the usage of m-commerce. Also, the level of satisfaction was lower in the second group. However, no significant difference between the segments in the willingness of the users to recommend m-commerce to their friends and relatives was observed. The results also indicate relatively high intentions for future use and willingness to recommend the use of mobile commerce to others.

Table 1. The results of t-test (control variable: social influence)

| Statement | Group 1 | Group 2 | t-value |
|---|---|---|---|
| TR1: Transactions via m-commerce are secured | 4.91 | 4.34 | $2.647^{**}$ |
| TR2: Privacy on m-commerce is well protected | 4.65 | 3.99 | $2.995^{**}$ |
| TR3: Using m-commerce for transactions is trustworthy | 4.96 | 4.24 | $3.409^{**}$ |
| PU: Using m-commerce improves my work performance | 4.83 | 3.91 | $4.042^{**}$ |
| PEOU1: Using m-commerce requires minimum effort | 5.56 | 5.40 | $0.807^{ns}$ |
| PEOU2: Becoming skillful at using m-commerce is easy | 5.50 | 5.42 | $0.419^{ns}$ |
| COST: A level of m-commerce price is appropriate | 4.87 | 4.64 | $1.150^{ns}$ |
| MOB1: M-commerce can be used anytime | 5.72 | 5.67 | $0.303^{ns}$ |
| MOB2: M-commerce can be used anywhere | 5.77 | 5.57 | $1.105^{ns}$ |
| PE: Using m-commerce is exciting | 4.37 | 3.67 | $2.839^{**}$ |
| CI1: If I have a useful idea on how to improve service, I let the employees know | 4.79 | 4.40 | $1.655^{ns}$ |
| CI2: If I experience a problem with the service, I let the employees know about it | 5.55 | 5.37 | $0.797^{ns}$ |
| SAT1: In general, I am satisfied with m-commerce | 5.17 | 4.64 | $2.964^{**}$ |
| SAT2: I have positive experience with m-commerce | 5.30 | 4.77 | $2.748^{**}$ |
| BI1: I intend to use m-commerce in the near future | 5.56 | 5.16 | $2.005^{*}$ |
| BI2: I will recommend to my friends and relatives to use m-commerce | 5.30 | 4.97 | $1.524^{ns}$ |

$^{*}$ Group 1 – respondents under moderate or strong influence of the community; Group 2 – respondents under weak influence of the community; $^{**}$ $p < 0.01$; $^{*}$ $p < 0.05$; $^{ns}$ – non-significant.

In the second step, the segments are created on the basis of the degree of personal innovativeness of the respondents regarding the use of new technologies. In this case, statistically significant differences observed between the two segments were noticed in a considerably larger number of observations (Tab. 2). Unlike the previous segmentation, significant differences were also observed in the attitudes on perceived ease of use of mobile services. Differences in attitudes were not observed only for the statements on the costs of m-commerce, anytime usability, and customer involvement.

Table 2. The results of t-test (control variable: personal innovativeness)

| Statement | Group 1 | Group 2 | t-value |
|---|---|---|---|
| TR1 | 4.81 | 4.23 | 2.652** |
| TR2 | 4.50 | 3.91 | 2.757** |
| TR3 | 4.80 | 4.15 | 2.943** |
| PU | 4.67 | 3.73 | 4.086** |
| PEOU1 | 5.64 | 5.23 | 2.135* |
| PEOU2 | 5.64 | 5.21 | 2.340* |
| COST | 4.85 | 4.58 | 1.299ns |
| MOB1 | 5.84 | 5.48 | 1.864ns |
| MOB2 | 5.83 | 5.41 | 2.268* |
| PE | 4.53 | 3.15 | 5.709** |
| CI1 | 4.80 | 4.23 | 2.405* |
| CI2 | 5.46 | 5.40 | 0.275ns |
| SAT1 | 5.16 | 4.43 | 3.912** |
| SAT2 | 5.27 | 4.60 | 3.349** |
| BI1 | 5.56 | 4.99 | 2.732** |
| BI2 | 5.29 | 4.84 | 1.981* |

* Group 1 – respondents who are very or moderate innovative; Group 2 – respondents who are not innovative; ** $p < 0.01$; * $p < 0.05$; ns – non-significant.

In the next step, participants were divided into two segments, depending on the extent to which m-commerce is compliant with their personal values, norms and needs (customization). In this case, significant differences were observed in case of all 16 statements (Tab. 3). As expected, members of the first group, who consider m-commerce as a very compliant to their lifestyle, gave favorable answers to all statements, as shown in the Table 3. It is interesting to note that respondents from second group also gave a relatively positive assessments to the statements related to the aspect of mobility. On the other hand, the level of their overall satisfaction and confidence in m-commerce can be characterized as low.

Table 3. The results of t-test (control variable: customization)

| Statement | Group 1 | Group 2 | t-value |
|---|---|---|---|
| TR1 | 5.00 | 3.91 | 5.093** |
| TR2 | 4.71 | 3.57 | 5.443** |
| TR3 | 5.04 | 3.76 | 6.143** |
| PU | 4.79 | 3.50 | 5.689** |
| PEOU1 | 5.98 | 4.69 | 6.866** |
| PEOU2 | 5.92 | 4.77 | 6.375** |
| COST | 5.28 | 3.92 | 7.086** |
| MOB1 | 6.09 | 5.09 | 5.360** |
| MOB2 | 5.97 | 5.17 | 4.281** |
| PE | 4.47 | 3.15 | 5.623** |

| | | | |
|---|---|---|---|
| CI1 | 5.12 | 3.72 | 6.165** |
| CI2 | 6.14 | 4.41 | 8.044** |
| SAT1 | 5.48 | 3.91 | 9.690** |
| SAT2 | 5.62 | 4.03 | 8.985** |
| BI1 | 6.06 | 4.22 | 9.934** |
| BI2 | 5.83 | 4.03 | 9.202** |

* Group 1 – respondents whose personal norms and values are compliant with the concept and the services of m-commerce; Group 2 – respondents whose personal norms and values are not compliant or are weakly compliant with the concept and the services of m-commerce; ** $p < 0.01$; * $p < 0.05$; ns – non-significant.

Finally, we have performed demographic segmentation of the respondents and analyzed the attitudes of the created groups. In the first step, we have tested the significance of the differences in attitudes of male and female respondents (Tab. 4). Results indicate that the attitudes of women and men are fairly balanced. In fact, significant differences have emerged only in the case of perceived enjoyment.

Unlike for gender segmentation, the statistically significant differences among different age groups were observed in the case of 13 out of 16 tested statements, as presented in Table 5. All respondents, depending on age, were divided into four segments and ANOVA results clearly indicate a considerably higher differences in attitudes of the different segments, compared to the gender segmentation. The only two categories where no significant difference was observed were perceived enjoyment and customer involvement.

Table 4. The results of t-test (control variable: gender)

| **Statement** | **Group 1** | **Group 2** | **t-value** |
|---|---|---|---|
| TR1 | 4.46 | 4.67 | - 0.955ns |
| TR2 | 4.18 | 4.33 | - 0.717ns |
| TR3 | 4.37 | 4.72 | - 1.567ns |
| PU | 4.15 | 4.41 | - 1.075ns |
| PEOU1 | 5.50 | 5.40 | 0.516ns |
| PEOU2 | 5.44 | 5.46 | - 0.132ns |
| COST | 4.65 | 4.84 | - 0.906ns |
| MOB1 | 5.70 | 5.67 | 0.199ns |
| MOB2 | 5.65 | 5.65 | 0.008ns |
| PE | 4.14 | 3.69 | 1.750* |
| CI1 | 4.66 | 4.41 | 1.034ns |
| CI2 | 5.38 | 5.51 | - 0.613ns |
| SAT1 | 4.77 | 4.94 | - 0.899ns |
| SAT2 | 4.93 | 5.04 | - 0.550ns |
| BI1 | 5.28 | 5.35 | - 0.348ns |
| BI2 | 5.08 | 5.12 | - 0.182ns |

* Group 1 – female respondents; Group 2 – male respondents; ** $p < 0.01$; * $p < 0.05$; ns – non-significant.

Table 5. The results of ANOVA test (control variable: age)

| Statement | F value |
|---|---|
| TR1 | 5.833** |
| TR2 | 5.102** |
| TR3 | 5.080** |
| PU | 3.005* |
| PEOU1 | 5.445** |
| PEOU2 | 3.544* |
| COST | 3.352* |
| MOB1 | 4.718** |
| MOB2 | 3.921** |
| PE | 1.722ns |
| CI1 | 0.950ns |
| CI2 | 2.029ns |
| SAT1 | 3.391* |
| SAT2 | 5.279** |
| BI1 | 3.017* |
| BI2 | 5.731** |

* Group 1 – respondent's age: 18-24; Group 2 – respondent's age: 25-31; Group 3 – respondent's age: 32-45; Group 4 – respondent's age: over 45; ** $p < 0.01$; * $p < 0.05$; ns – non-significant.

## 5. Conclusion

Mobile commerce is still a novelty for the most of the consumers, which is why the frequent use of m-commerce can be expected in the future. At the moment, mobile services are usually used by a smaller number of mainly young people. It is necessary to identify the key drivers of customer satisfaction and loyalty, thus providing the possibility for improvement of current strategies and develop long-term relationships with customers. The main objective of this research was to study consumer attitudes and perceptions on various attributes and characteristics of m-commerce, and the comparison of the attitudes of different segments of the sample.

The results show that the most positive and favorable beliefs were related to mobility, perceived ease of use and the willingness of respondents to inform the company on noticed problems. In addition, a relatively high degree of loyalty of respondents was observed, expressed by two basic components: intent for future use of m-services and the respondents' willingness to recommend m-commerce to friends and family members. On the other hand, the least favorable observed attitudes were related to the trust and protection of user privacy.

The obtained results raise several useful managerial implications. First, they can help m-commerce providers to attract more users in the near future. In this context, new marketing campaigns should emphasize mobility aspects of m-commerce, its usefulness and ease of use, as these elements were best evaluated by the respondents. It is essential that m-commerce providers improve data protection systems, since the respondents expressed the least favorable attitudes on trust, security and reliability of the transactions. Trust is perhaps the key factor that can contribute to the more frequent use of m-services. Therefore, citizens should be, through informative marketing campaigns, educated on all aspects of data and privacy protection, but also on the appropriate usage of mobile services and all the benefits that m-commerce brings.

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Chapter 6

# Quality Inspired Reindustrialization[1]

*Slavko Arsovski, Zora Arsovski*

## 1. Introduction

During last decade a lot of paradigms are reviewed, as quality, industrialization, knowledge economy, digital economy, etc. especially in transition economics based on industry growth now is problem of declining share of industry in GDP (Gross Domestic Product) and related problems in losing of jobs, low level of competitiveness, etc. A new answer for recovery of economy is now reindustrialization.

A problem of reindustrialization is recognized in EU, too. Based on Estate monitoring of EU economy (Heymann et al., 2013) the industrial sector's share of gross value added was decreased in all western EU countries since 2000 in amount in average of 14 percentages in last 12 years.

In this period real gross value added by manufacturing had increasing in average of 10 percent. In this period Czech Republic had industry share of 24.7%, Ireland ca. 23.3%, Hungary ca. 22.7% and Germany ca. 22.3%. All of them have all managed to retain a broad industrial base. Besides macro level, problem of reindustrialization has mezzo and micro aspect. It is emphasized in the article.

In the article is emphasized the problem of reindustrialization trough quality. It is our research problem. A quality problem could be resolved by different approaches, as quality engineering, quality management, total quality (TQ), including risk management, resilience management and other management systems. On this way quality could be tool for new inspiration for reindustrialization, especially in transition countries. A quality methods and tools, establishing the new quality managements system supported by new business models is key part of the article. It is the goal of our research.

The purpose of the paper is to light on the problem of reindustrialization and define elements of the optimal reindustrialization strategy in transition countries.

The analysis of existing state and benchmarking are the first phase of the research, based on one case for region of Central Serbia and EU. Using quality tools and methods (statistical, per-

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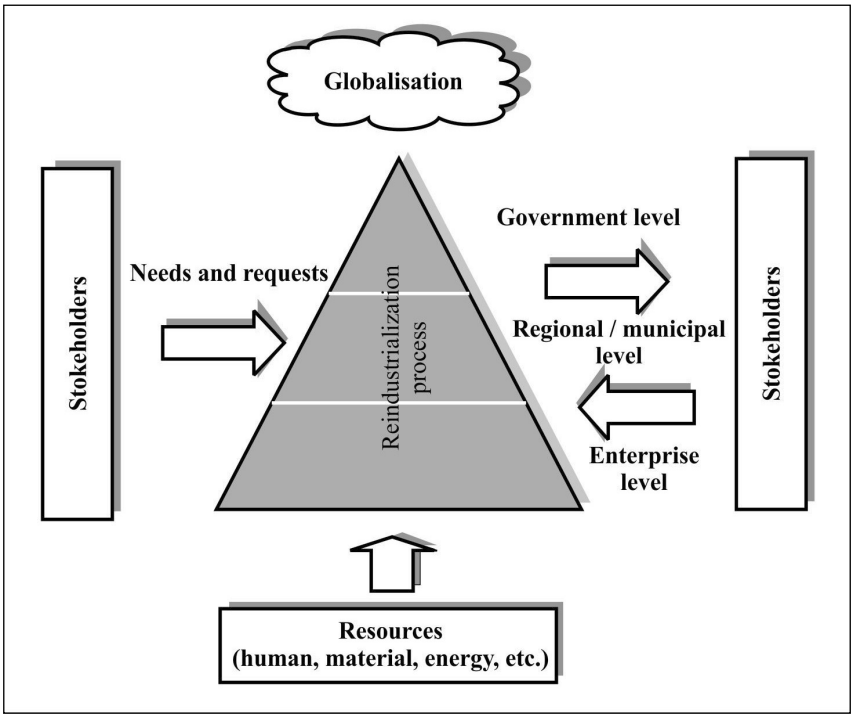
formance management, BSC, strategy alignment, competitiveness) in presented case study are defined elements of the new strategy of reindustrialization.

## 2. A general model of reindustrialization

It is well know that industry has significant impact on competitiveness, creating jobs quality of life, integration of business and public processes, sustainability and other sectors as tourism, transport, sport, etc. What is interest of each country for reindustrialization? Answer on this question is in satisfaction of all stakeholders in each country, a.e. government, business owners, employees, etc. each of them has different and often opposite requests and needs. This situation is recognized by quality. According quality gurus (Deming, Juran, Feigenbaum) quality is defined as level of satisfaction of stakeholder's needs and requests. In the Figure 1 is presented the model of reindustrialization, based on quality approach.

Figure 1. Environment of reindustrialization based on quality approach



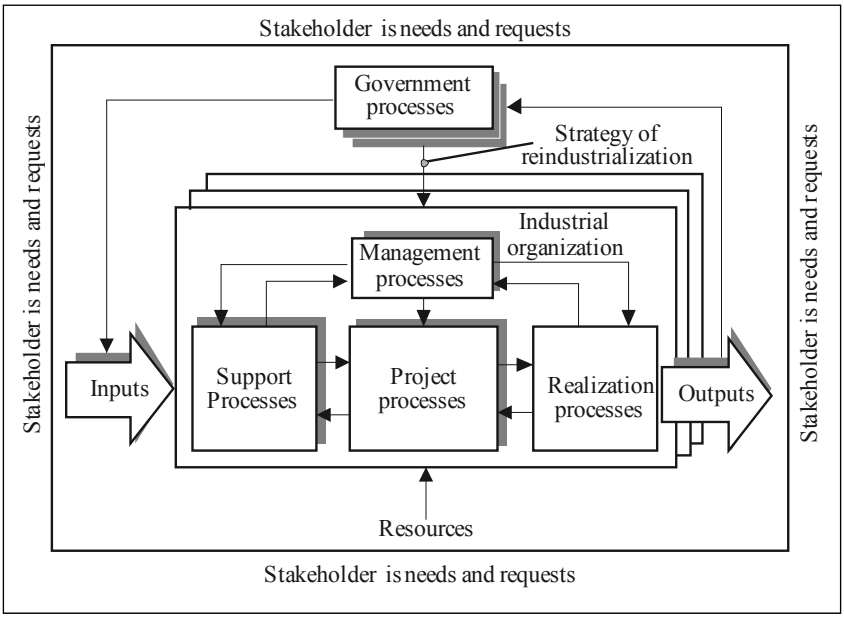

Source: own work.

In this approach on the left side are stakeholders whit needs and request.in middle is natural economy structured on three levels (government, regional/municipality, enterprise) whit resource base. On the night side are stakeholders with satisfaction related to fulfilling the needs and expectation.

A problem is hidden stakeholders needs and requests. Many of them demonstrated interests, often in opposite side. A globalization is one cloud with strong influence on the reindustrialization process through opportunity and threats. An opportunity is related to access to financial resources, new technologies, new knowledge, work force etc. A threats has big negative effect on reindustrialization because the existing state of transition countries is very vulnerable because political, economic, financial and other problems. In this situation it we don't know who is hidden competitor, what is their hidden interest and so on, is very difficult to find the optimal way for effective lead a process of reindustrialization.

This quality approach is used for creating a general model of reindustrialization (Fig. 2). In the model are emphasized government processes on government and regional level and processes in organization (enterprises). An inputs and outputs are further modeling based on theory of complex organizational systems.

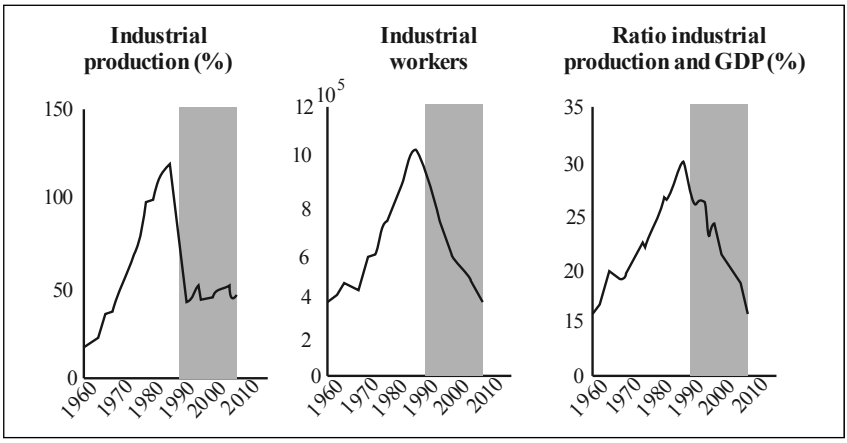
Figure 2. A general model of reindustrialization




Source: own work.

A government process could be input for reindustrialization if government recognize it as potential solution for resolving economic, social and other problems (Foster, 2004). Output of this process is strategy of reindustrialization. Problem is in not enough profoundness of the strategy, it is other very general and very broad. Because that the leaders on regional/municipal and enterprise level have not enough usefully information and real support for process of reindustrialization, which is very vulnerable, spend a lot of time and costs and results depends on many internal and external conditions. In each enterprise are, according to quality principles, defined management, support, realization and project processes. Outputs of its are assessed by stakeholders (government, investitures, managers, workers, local government, etc.).

Figure 3. Indicators of industry share in Serbia




Source: Djuricin, Vuksanovic, 2013, pp. 1-18.

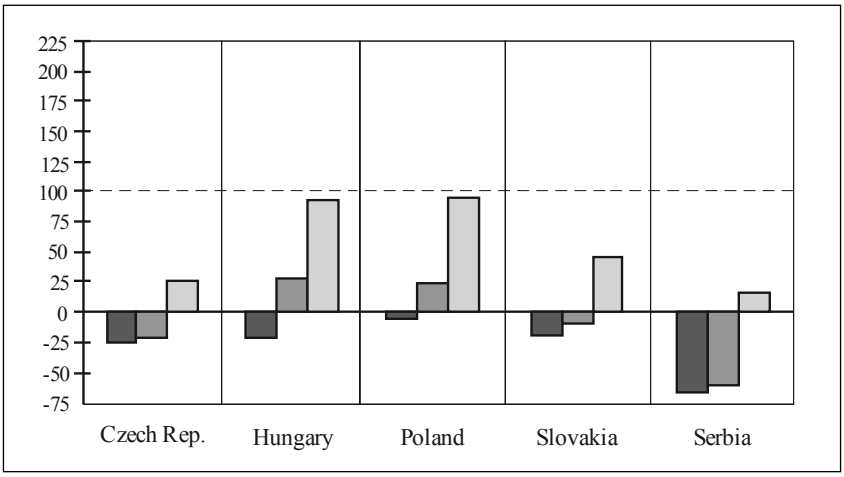
Using theory of modeling (Sterman, 2000) and research of (Ruth, Hannon, 1997) are created the model of reindustrialization. In the model are included:

- level of infrastructure,
- industry share,
- trade balance,
- eco-impact of reindustrialization,
- quality level,
- investments projects,
- competitiveness,
- employment,
- labor cost in industry and
- quality of life.

Input in the macro model of reindustrialization is level of needs and requests, and output is stakeholder's satisfaction and quality of life of citizens.

Elements (variables) of the model are different in each country. For EU and Balkan Countries, in Figure 3, 4, 5, and 6 are presented current level of it in previous period.

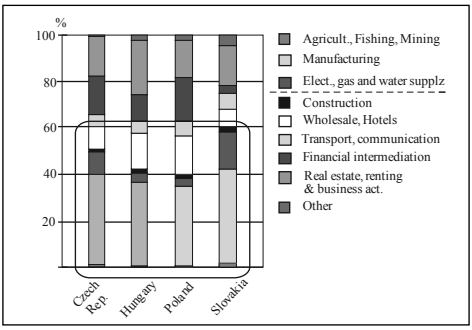
Figure 4. Industrial productions in comparable countries to Serbia




Source: Dimitrijevic et al., 2013.

In Serbia the problem of industry collapse is evident, because war, sanctions and long and inefficient transition period. In Figure 3 is presented indicators of industry share in Serbia (industrial workers, and ratio of industrial production and GDP). All of the indicators had trend of declining so now we are in position to try quickly to find effective solution and realize it in next five years. In comparison with countries of Višegrad groups it is emphasized (Fig. 4), but is evident trend of consolidation in Serbia. In last 7 years during World economic crisis foreign direct investment (FDI) was oriented more in other sectors then in manufacturing, also in countries of Višegrad froup (Fig. 5).

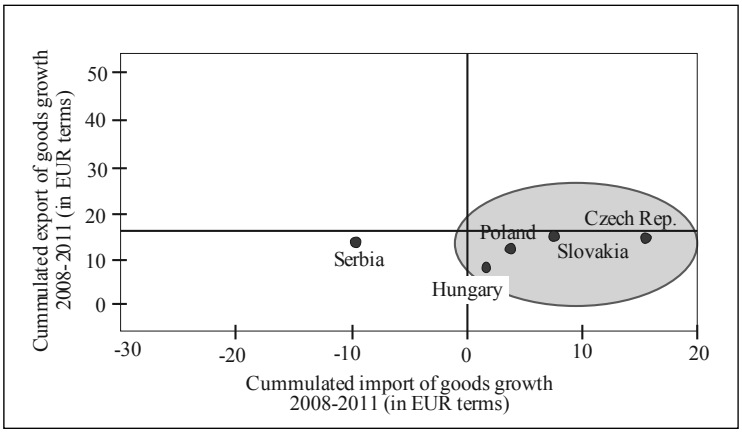
Figure 5. Structure of FDI in the countries of "Visegrad group"




Source: Dimitrijevic et al., 2013.

The same situation was in Serbia trough analysis of cumulative import and export is obviously that Serbia is weaker position in relation to countries of Visegrad groups too (Fig. 6).

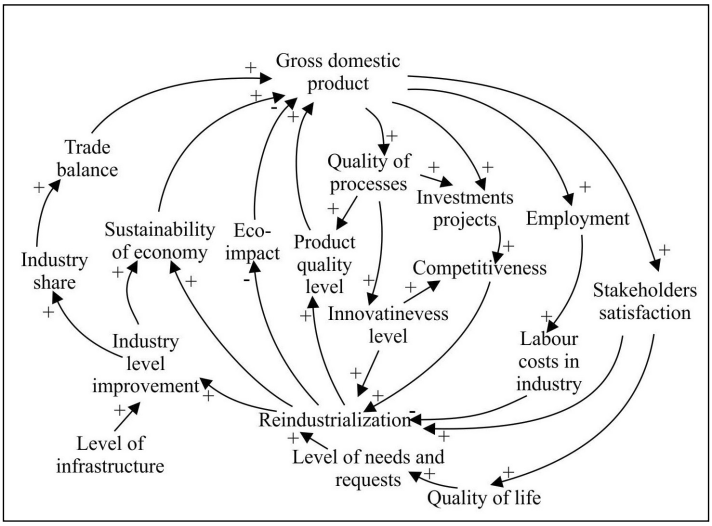
Figure 6. Differentiated trends of export and import in Serbia and other countries in "Visegrad group"




Source: Dimitrijevic et al., 2013.

Based on previous analysis in Figure 7 is presented dynamic macro model of reindustrialization.

Figure 7. Dynamic macro model of reindustrialization




Source: own work.

In this model are included some aspects of quality, as quality of life, stakeholders, satisfaction, quality level of organization and products, eco impact etc.

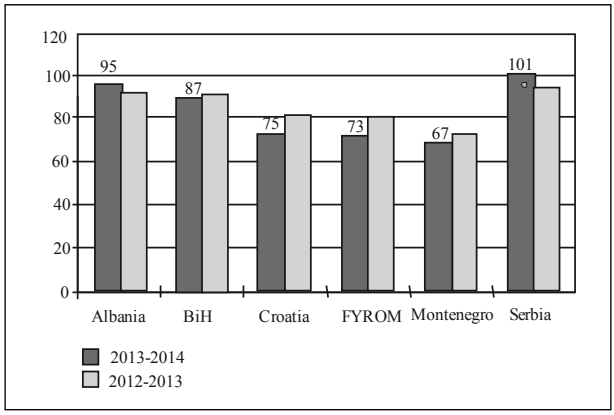
## 3. How quality inspires reindustrialization

A wide quality approach inspires reindustrialization through:

- using quality methods, techniques and tools for:
- analyzing the problem (Arsovski et al., 2013),
- planning the strategy (Dheret, Morosi, 2014),
- development of optimal solutions (Dror, 2008, pp. 583-593),
- monitor a reindustrialization process,
- assessing the requirements and needs of stakeholders (Sommerville, Sawyer, 1997),
- incorporation of wide quality aspect in processes, products and services (Becker, 2003; Becker, Kugeler, Roseman, 2003),
- coupling reindustrialization with human aspect, trough ethical attitudes, quality of life, job satisfaction, higher salaries (Ferris, 2003; Efklides, Moraiton, 2013),
- incorporating competitiveness as goal function on organization and higher levels (region/country) (Guarascio, 2014),
- incorporating eco-aspects and safety aspects of reindustrialization, etc. (Arsovski et al., 2013; European Chemical Regions Network, 2013, pp. 1-10).

The first quality inspiration of reindustrialization is related to using methods, techniques and tools. For it could be used seven basic tools, next seven plus two tools, especially statistically methods for trend analysis, correlations, etc. For assessment the significance of a problem and ways for improvement very appropriate are benchmarking, system analysis, process approach etc. In Figure 8 is shown competitiveness rank in the Western Balkans countries based on 148 researched in period 2012-2014.

Figure 8. Competitiveness rank in West Balkan Countries

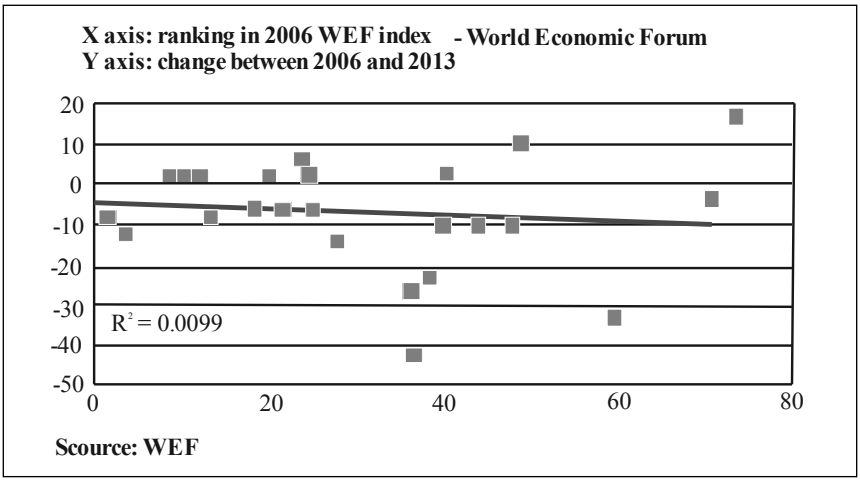



Source: Aspen Institute, 2015.

In analyzed period Serbia had the lowest competiveness in relation to other West Balkan Countries. Now is some better, but still not enough to be satisfactory. It is one more request for effective reindustrialization in Serbia.

A significance of correlation analysis is demonstrated in Figure 9, for analysis of competitiveness changes of EU countries in period 2006 and 2013. Low level of R2 (0.0099) shown that there not exist correlation and that lower-ranked EU countries had become less competitive in this period.

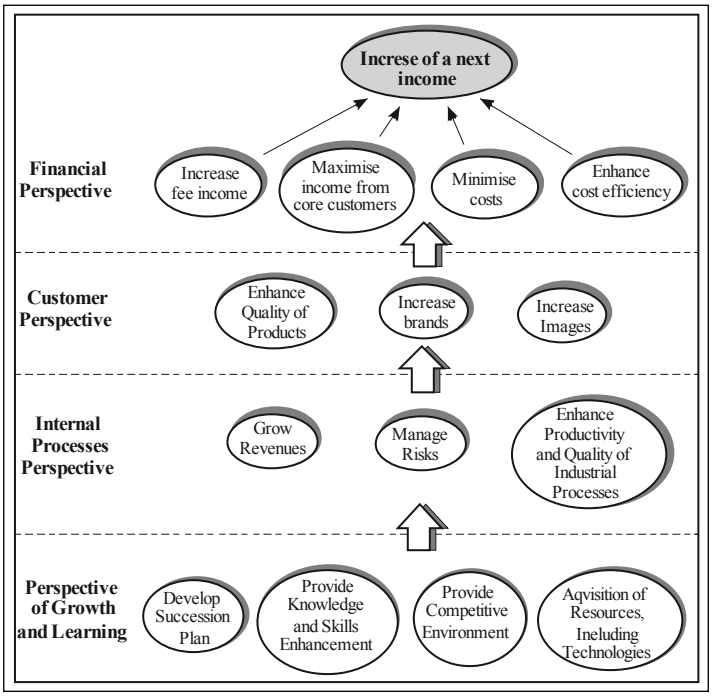
Figure 9. No convergence in competitiveness




Source: Word Economic Forum 2013.

For planning the reindustrialization strategy have been used many different methods, as strategy maps (Hutchins, 2008) etc. In Figure 10 is presented strategy maps for case study in Central Serbia.

Figure 10. Strategy map for reindustrialization through quality




Source: own work.

Each element in strategy map has correspondence with elements in dynamic macro model (Fig. 7) of reindustrialization.

Development of optimal solutions is very well structured in quality area, using different methods for optimization, decision support, etc. For problem of reindustrialization could apply a.e. Fuzzy AHP, FOWA, Business Intelligence methods as Genetic Algorithm, etc. (Stefanovic et al., 2015; Nestić et al., 2015).

For monitoring a reindustrialization process are very useful approach es and methods for Performance Modeling and Performance Monitoring and Analysis (PMMA). For reindustrialization has been select a group of representative performance.

## 4. Analyses of possible strategies of reindustrialization

For improvement of reindustrialization process could use a lot of quality methods, a techniques, and tools, as PDCA cycle of Deming (Oukland, 2004), Juran triology (Juran, 1995), process improvement as lean (Schipper, Swets, 2010), business excellence (Kanji, 2008, pp. 417-427; EFQM, 2013), DMAIC (Siving, Penn, Stodard, 2008), process improvement using BPR (Hammer, Champy, 2003), continually improvement/kaizen (Arsovski, 2006), etc.

The second group of quality approaches for supporting a reindustrialization is related to assessing a requirewents and needs of stakeholders. For it could use theory of stakeholders (Foley, 2005), requirements engineering (Young, 2004), other different requirements analysis approaches, etc. For weighting a needs and requirement is possible to use Fuzzy AHP approach or FOWA approach, or Delphy Approach (Zeydan, Colpan, 2009, pp. 4327-4349).

The third group of quality approaches suitable for reindustrialization is related to wide quality aspect. It covers TQM approach (Evans, Dean, 2003), Business Excellence (BE) based on national or EU models integrated management systems, sustainability of organizations according ISO 9004 (ISO 9004, 2009) and other management systems. On other side are approaches, directives and standards for quality and safety of products, as New Approach with directives and harmonized standards, as well as standards for recycling, energy recovery and other legislatives. This area is more mandatory because EU norms for free movement of goods.

The fourth group of quality approaches appropriate for reindustrialization is related to human aspects, because human being are source and goal of reindustrialization. A lot of aspects have to be included as ethical issues, quality of life, happiness, well-being, job satisfaction, motivation based on work conditions, salaries, personal development, job continuity, etc. On this way human being is treated as resources and their outcomes as achieving of reindustrialization goals (Mahony, Vechi, 2009).

The fifth group of quality approaches appropriate for reindustrialization are from domain of competitivity theory, based on quality (Porter, Ketels, 2003). Using quality theory connected with marketing theory competitiveness is viewed as goal function on micro level (organization), mezo level (region), and macro level (state).

The sixth group of quality approaches for solving a reindustrialization problem is related to eco-aspect (The Europe 2020, 2014) and security and safety aspect (Ulman, 2014). For the first case are used cost/benefit, LCA (Life Cycle Assessment) methods, LCC (Life Cycle Costing) methods (Taguchi et al., 1989), and other approaches covered by EU directives for different aspects of impact of industrial processes on environment. In a second case in reindustrialization

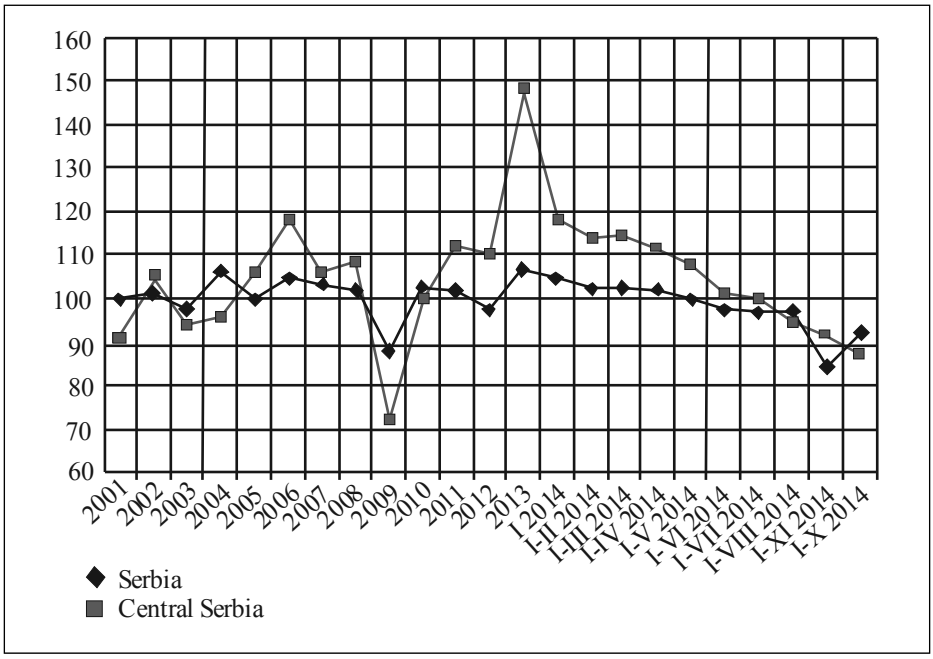
has to be included security (risk, vulnerability and resilience) of new structures and safety based on safety standards.

The previous analysis pointed out that quality has a high impact on reindustrialization, from aspect of methods. Beside them, reindustrialization is a big project and quality of the project is also covered by standards as ISO 10 006 or ISO 21 500. Each phase of the reindustrialization project has been planned, realized, monitored and improved using quality approaches (Jeston, Nelis, 2008; Arsovski, 2006).

The process of de-industrialization is recognized also in highly developed countries, and macro regions such as US, EU etc. Thus for example, the value of output and employment in the EU in period 2010 to 2014, had trend of stagnation of decline, and the share in the value added in the period 2004-2011. The share in added value dropped 36% to 28%. Among EU countries, there are big differences in the level of industrialization and trends, especially in terms of productivity, innovation performance, investment, etc. This caused different levels of competitiveness of the EU countries and associate members. The problem is lagging relating to USA, China and Japan.

In Figure 11 is presented trend of index of production in Serbia and Central Serbia Region.

Figure 11. Trend of industrial production in Serbia




Source: own work.

These reasons are demanding a review of existing and creating a new vision of industrialization based on three composite modules:

- Creating the basis for the creation of a vision:
  - ensuring better "smart" regulation,

  - investment in human capital,
  - optimization of the role of public authorities in order to increase the competitiveness of industry in the EU,
  - ensuring access to finance in the whole EU.
- The application of the two guiding principles of the new strategic vision:
  - strengthening cooperation with EU,
  - optimization of resources and power of the EU.
- Sophisticated factors:
  - creator involvement of innovation, (EU competitiveness Report, 2013),
  - leadership based on new business models (Nielsen & Lund, 2012).

For each group of activities is necessary to develop strategic directions. Thus, for example in strengthening cooperation within and outside the EU proposed "economic diplomatic strategy" with the role of the EU delegation as a catalyst of emerging economies and management of foreign direct investment (Aghion & Boulanger). In the field of innovation as a strategy to strengthen research and development at EU and national levels, and are supported and innovation stimulated demand. The aim is to research, develop and commercialize innovations as soon as possible.

The effect of commercialization of key products and technologies depends on knowledge. Based on the European Competitiveness Report 2013 manufacturing companies have a higher level of innovation then in mining and services in the industry, and less than the pharmaceutical and ICT industries. On the other hand, the value of technical intensity in the high tech industry is growing, and low tech declines. In order to bridging the gap over the competition, the EU has recognized the importance of the role of ICT capital, regulation, time required for contracting, the fragmentation of the industry and so on.

Problems recession, after 2008, was reflected in the EU in terms of return on investment in innovation of products/processes, on average 0.2–0.6%. Therefore, the EU has focused its strategy towards the following key products/technologies:

- industrial bio-technology,
- photonics,
- micro/nano-electronics,
- advanced materials,
- nanotechnology and
- advanced production technology.

From this point of view all the technologies are divided into four groups:

- high technology to increase the technological content,
- high-tech a reduction of technological content,
- low technology to increase the technological content,
- low technology with a reduction in technological content.

Due to the dominant application of low technology in the CEE (Central and Eastern EU) and candidate countries (EUC), the level of competition is very low.

In portfolio matrices of products/technologies (Gallouj, 2002) are obviously that the most products are existed products, produced by existed technologies. Only about 1.5% of products are produced by new technologies. It could be optimal way to recovery industry and achieve the optimal cost/benefit ratio, according all stakeholders needs and requests.

Reindustrialization strategy must respect the innovation framework that includes:

- a strategic vision,
- innovation challenges,
- demand for research,
- creating the necessary knowledge,
- development and transfer of technology and exploitation of results, whit involvement of: (1) industry, (2) research organizations and (3) a public authority.

Between them there must be synergies realized through coordination and integration, including support programs at EU, regional and national levels.

The key question is which vision and strategy could be effective, oriented to optimal portfolio of products and technologies? Answer on this question could be supported by quality approach. Using combination of quality methods and tools, decision theory and simulation technologies is possible to find optimal portfolio of products and technologies, their dynamic introduction and effect on industrial growth and sustainability and competitiveness on regional and country level.

The base for it is analysis of:

- costs of inputs,
- market demands,
- level of knowledge and skills,
- entry of new and emergent technologies,
- needs for collaboration among stakeholders,
- competitivity gap,
- quality gap,
- trade balance,
- quality of life,
- employment, etc.

On this way problem of reindustrialization is transformed in problem of optimal combination of variables presented in Figure 3. For achieving the goal: growth of reindustrialization rate in amount of 0.5% per year for achieves it is necessary to:

- provide financial consolidation until year 2015,
- elimination of output gap in next two years from 32% to 0% and
- fostering industrial development in next years.

On this way we could extract that global competitivity index be bigger (from 95$^{th}$ of 144 to 65 in average), quality of life (from 95 to 80 position), etc.

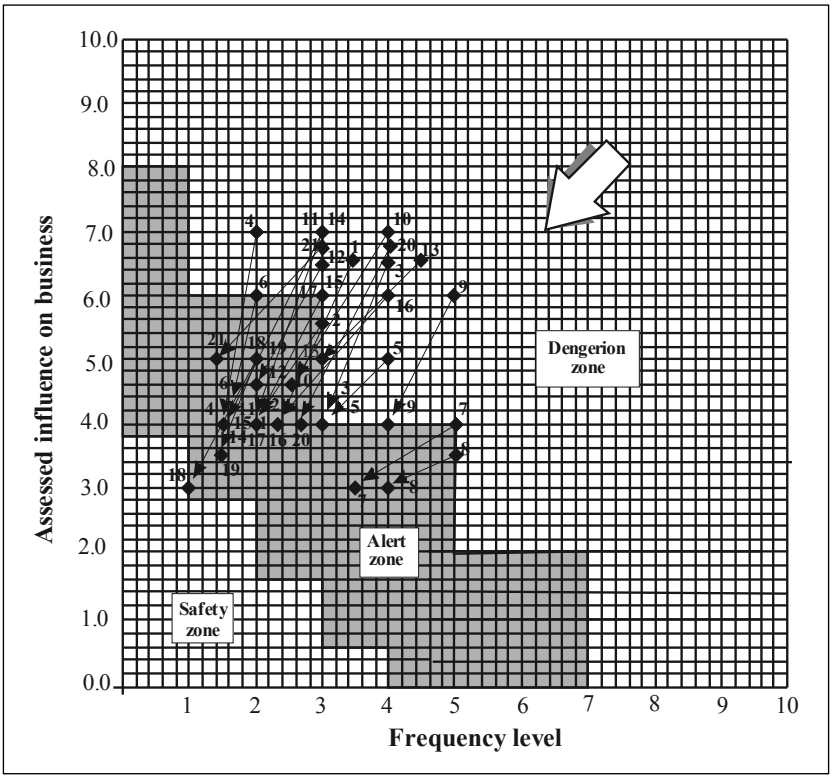
The described reindustrialization process spends a lot of resources (time, money, material, equipment, etc.), (Arsovski, 2013). Because that, is necessary to include risk, vulnerability and resilience aspects, on level of proposed solution (i.e. technological park), on regional or country level (Adzic, 2011, pp. 301-326; Adzic, Birovljev, 2011).

Through the analysis of risk, particularly vulnerability and capacity for recovery (resilience) should be trough the Strategy for the Development of Kragujevac analyze these risk and to find optimal solutions (Arsovski, 2002; Arsovski, 2006). One solution is a technological park in Kragujevac presented in the Figure 12 (Arsovski S., Arsovski Z., Mirovic, 2009, pp. 33-44).

Using quality methods and tools is possible to find optimal component strategic to go from dangerous for to alert and then safety zone for each vulnerable aspect of functioning of Technology Park.

Technology Park is not a "magic" solution, but a good solution, especially for the first phase of re-industrialization, when to encourage entrepreneurship and competitiveness of small and medium-sized enterprises.

Figure 12. Risk assessment of Technological park in Kragujevac




Source: Municipality of Kragujevac, 2009.

Reindustrialization town of Kragujevac to be predominantly directed towards existing products and technologies, and less to the updated and new, as they require a higher level of knowledge and investments, with an increased risk of investing (Arsovski et al., 2012, pp. 47-53; Camarinha, 2013).

## 5. Conclusion

A problem of reindustrialization in EU and other countries is very hot. The solutions for its solving are different. In the paper are presented approach based on quality. The main idea is to use quality tools and techniques, in connection with simulation and decision theory, to find optimal reindustrialization strategy.

A region of Central Serbia started with project of reindustrialization, because industry is divested and lost a more than 30.000 jobs in previous two decades. In this project are included

many alternating strategies, as development of technological park and incubators, ICT development, innovation development, clusters, supply chain, quality, competiveness, sustainability, quality life strategies. On this way, after 5 years we can expect share of industry in GDP on the level of "Višegrad group" countries from EU.

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Chapter 7

# A Reindustrialization Supported by Information and Communication Technologies[1]

*Zora Arsovski, Slavko Arsovski*

## 1. Introduction

Economy in 21st century is changing rapidly. The old markets, producers, technologies, and business model are crushed and very fast are appearing new and emerging technologies and industries. The problem is how to balance productivity, competitiveness and development in this condition in each different country.

A declining the EU competitiveness is connected with leaving and putting out of industrial capacities. In last five years are recognized attempts of EU and EU member countries to define effective strategy of reindustrialization. A reindustrialization is wide recognized need and solution of transition economies, too. In the article is emphasized the problem of reindustrialization in transition economies, based on research in Serbia using development and using appropriate ICT (Information and Communication Technologies) solutions. An ICT support could be establish through a lot of different kinds, as introducing ICT products in industry, developing and establishing ICT firms, enhancing ICT and related knowledge and skills, reframing the old business models in industry by ICT, etc.

In EU expenditures for research and development were 1.85% of GDP in 2007. year against 2.7% in USA, and declined until year 2011 (Dahlman, Routhbi, Anthila, 2006). In this period competiveness had also negative trend.

In past ten years EU manufacturing had negative recovery rates, except Romania, Lithuania, Latvia, Poland, Slovakia, and Estonia (Dahlman et al., 2006). In this period EU manufacturing recovery a couple sectors: pharmaceuticals, mining supported services, and other equipment with high technology. Problem was with declining of ICT as driver for other sectors. The revealed comparative advantage by technology intensities in manufacturing in year 2011 point out that EU had lower indicator than USA for high tech, medium high tech, medium low tech products, and

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higher in low tech products. That high lines an importance for development and introducing more complex products with higher share of new knowledge and ICT.

The purpose of the article is to point on ICT as effective driver for enhancing many faces of reindustrialization, as strategy, competitiveness, innovativeness, knowledge and skills, resources etc. A research problem of reindustrialization in transition economies supported by ICT is analyzed using different methods, including benchmarking EU and transition economies, strategy development and analysis, reframing techniques, ICT requirements engineering innovativeness using ICT, statistical analysis, etc. The main objective of the research is to find optimal solution for transition of Serbian economy, supported by ICT. For purpose of developing the new model of reindustrialization is proposed for regional approach on state and sub-regional level with ICT as driver of reindustrialization.

The research results point out that ICT has low and medium impact on reindustrialization in Serbia as transition state. With including knowledge in the model, its synergic effect becomes higher. It means that in further strategies of reindustrialization is suggested more emphasizing on ICT and knowledge, as *soft factors* with higher benefit/cost ratio then on production technologies.

## 2. A knowledge and ICT driven reindustrialization

A knowledge assets and especially ICT capital were a major reason for the not satisfactory of labor productivity EU (EU Competitiveness Report, 2013). In the report recognized the significantly slower adoption of ICT in the EU compared to the USA, in particular in service sector, including ICT intensive sectors as trade, finance, and business services (Aspen Institut, 2004; Mengoli, Russo, 2014; Arsovski Z., 2013; European Chemical Regions Networks, 2013; Dheret, Morosi, 2014; Prisecaran, 2014). On other side, insufficient investment in the skills, knowledge, and organizational change reduce the benefits of ICT (O' Mahony, Vecchi, 2009).

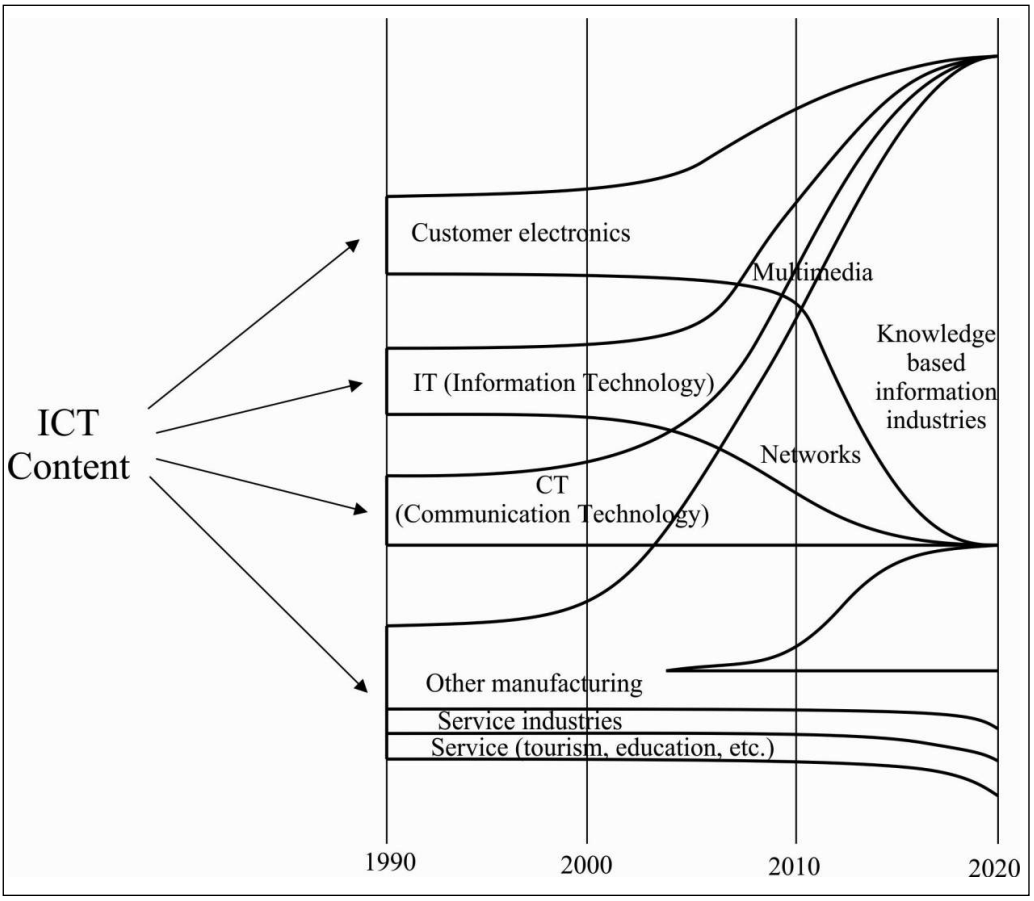
According to a survey of knowledge in Finland (Dahlman, 2006), performance of the national economy largely depended on applied ICT, because it was analyzed the competitiveness of other countries depended on the application and use of ICT. It is the use of ICT – not necessarily production – that is decisional for long-term economic growth. In Finland the growth of economy depends on production of ICT solutions (products), but in USA it depends on ICT usage. In Finland, in last twenty years, labor productivity had extremely high rate of growth related to:

- communication equipment (factor 12),
- medium in electronics and electronic equipment (factor 7), and
- low in total manufacturing (factor 2).

For next period that has implication to keep the creative destruction of existing industry by optimal productivity enhancing and structural changes in order to satisfy older population through standardized and digitalized services using ICT.

In period of globalization ICT production is moving to new locations (China, India, etc.). It is connected to competitive advantage of a nation. For EU countries focus has to be on technological convergences in the ICT sector (Fig. 1).

Figure 1. Technological convergence in the ICT cluster




Source: adapted Laudon, Laudon, 2011.

In Finland and EU production of consumer electronics was smaller than in year 1990, but it is compensated by ICT clusters with import products from Asia. In same period, the share of IT (Information Technology) and CT(Communication Technology) was rapidly higher, so now knowledge based information industries are much more concerned on IT and CT. In countries with lack of knowledge resources related to CT, it is reduces only on IT (Dahlman et al., 2006).

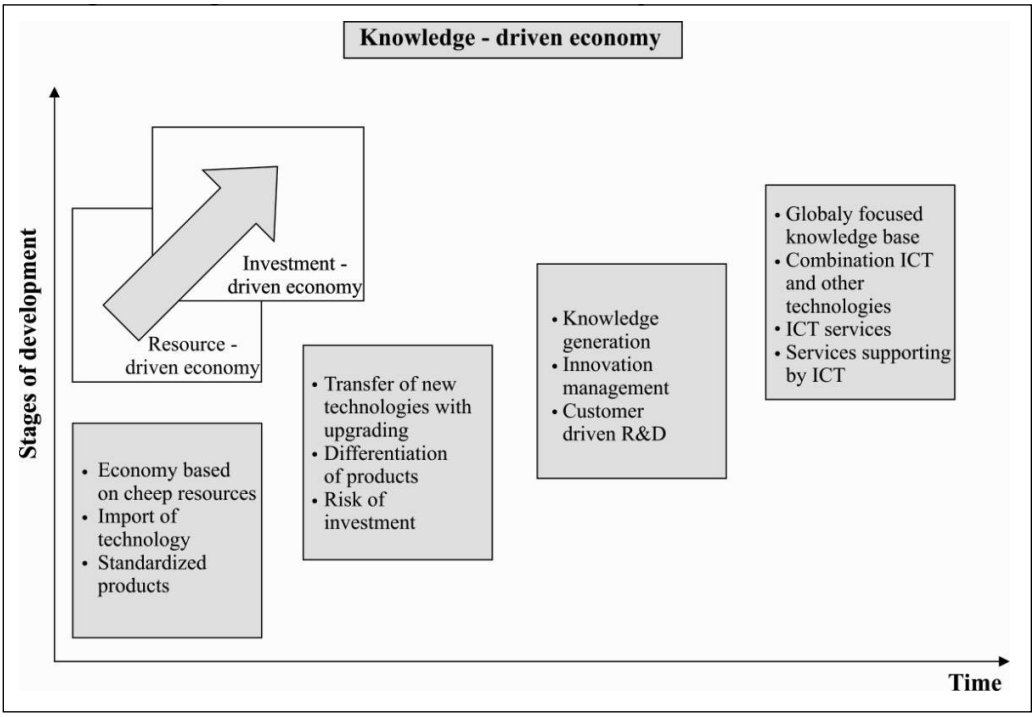
On other side, usage of ICT is in three domains:

1. Other manufacturing.
2. Service industries.
3. "*Pure*" services.

In the first case ICT was more and more implemented in manufacturing processes for control, measurement, monitoring, etc. This approach is dominantly used for reindustrialization. The second case is related to service industries for maintenance, ICT engineering, transport, warehousing, etc. The third case is related to "*pure*" services as tourism, education, banking, assurance,

transport, etc. In this type of services ICT is used as technological platform for designing, realization, and monitoring of service processes. On Finland's case is possible to identify stages of industrial and economic development, with emphasizing the ICT aspect (Fig. 2).

Figure 2. Stages of industrial and economic development




Source: adapted Dahlman, 2006.

For purpose of reindustrialization, using ICT in next chapter is more highlighted the third and fourth stages. Based on European Competitiveness Report 2013 in period 2000-2012 the highest labor productivity growth was in ICT manufacturing (9%), telecommunications (8%), education (2%), and health (1%). Negative growth had arts (-0.5%), public administration (-1%), business services (-2%) as well as research and development (-3%). On other side intensities of skills and knowledge (measured by percent of total employment) was higher for education, professional, scientific, and technical activities. For each country the skills (low, medium, and high), and human capital is different and it is an input factor, which can explain differences in economy growth, especially in 21st century with characteristics of digital economy.

In last five years number of patents related to using high tech in other sectors is very small. The highest rate of patenting was in area of wood and wood products (more than 2%), agricultural and forest machinery (2%), fabricated metal products (1.7%), machine tools (1.6%), rubber and plastics (1.5%), but much less in ICT (less than 1%). On other side, more innovative enterprises in EU were in pharmaceuticals (75%), tobacco (70%), computer, electronic and optical products

(69%), manufacturing (48%), until service (ca 30%). In some sectors rate of product innovation is higher than process innovation (as computers, ICT, other manufacturing), but for services is quite different case. Also, survey of manufacturing firms' service innovation in year 2010 pointed out that services in computer equipment and optical product firms had higher innovation rate (ca 17%) of all surveyed firms in EU. On this way is recognized influence on added value in EU manufacturing export from 40% to 50%. It is way for further reindustrialization (Aspen Institut, 2014; Mengoli, Russo, 2014; European Chemical Regions Networks, 2013; Dheret, Morosi, 2014; Prisecaru, 2014; Euler Hermes Economic Research Department, 2013).

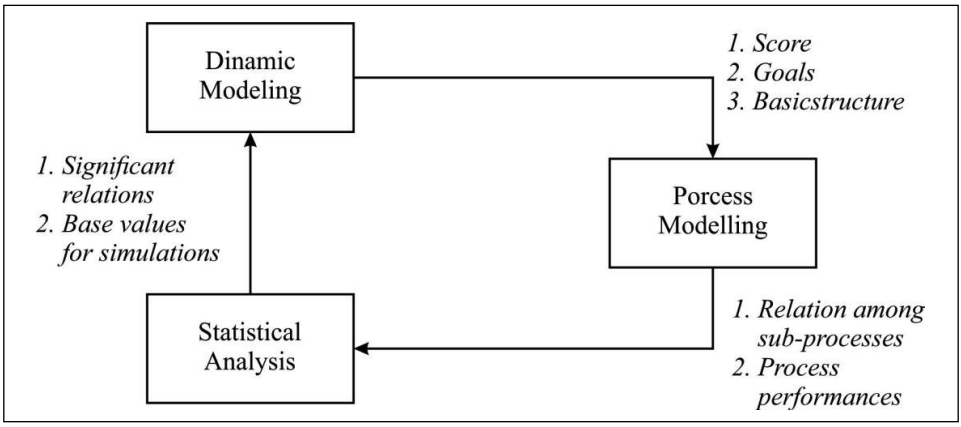
## 3. The model of reindustrialization of transition economies

A model of reindustrialization of transition economics is based on Serbian economy (Adzic, 2011; Republic Office for Development Serbia, 2011; Fren.org.rs, 2011; Djuricin, Vuksanovic, 2013; Municipality of Kragujevac, 2009; Dimitrijevic at al., 2012).

For modeling has been used approaches of modeling of complex dynamic system (Sterman, 2000), and process modeling (Becker et al., 2003; Arsovski, 2006; Arsovski Z., 2013). The first approach is used for defining the scope of systems, structure, goals, and strategic and so on. Process modeling is use for further decomposition and defining the relation of between decomposed sub-processes (Fig. 4).

In the next steps has been used statistical analysis of the correlation and impact of variables in the model. After reducing a lot of relation with small significance, the base model has been corrected for final modeling using appropriate software tools and techniques for further simulation.

Figure 4. Steps in modeling of reindustrialization as a process




Source: own work.

Based on previous analysis in Figure 5 is presented model of reindustrialization.

In the general model in the paper is emphasized role of ICT and expected results of its supporting the reindustrialization strategy. Because a reindustrialization is project on the national/regional level there are a lot of stakeholders. For analyses their requests and needs has been used stakeholder theory (Foley, 2005).

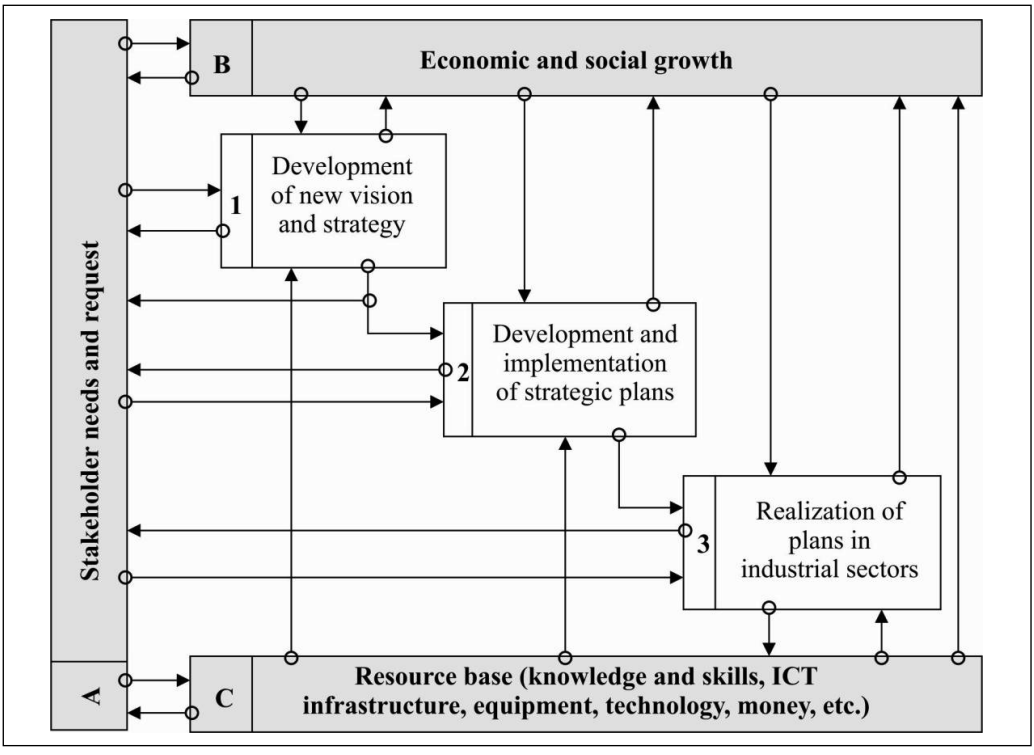
The proposed model of reindustrialization composed from four sub-models, i.e.:

*A* – Sub-model of stakeholders needs and requests,
*B* – Sub-model of economic and social growth,
*C* – Sub-model of resources, and
*D* – Sub-model of reindustrialization defined a process realization and dynamic connecting to *A*, *B*, and *C* sub-model.

*First*, an ICT has impact on stakeholder needs and request in model (A), because most of them now have new and more profound needs and request, related to:

- effectiveness and efficiency of communication (Laudon, Laudon, 2011; Nevo, Wade, 2010),
- availability of needed information (Nevo, Wade, 2010; Peppard, Ward, 2004; Valacich, Schneider, 2012),
- fostering industrial processes by ICT (Schipper, Swets, 2010; Siving, Penn, Stoddord, 2008; Seidler, Hartmann, Gemuenden, 2004),
- based on previous, supporting: (1) a development of new vision and strategy, (2) development and implementation of strategy plans, and (3) realization of plans in industrial sectors,
- communication among associations on ICT platforms (Arsovski Z., 2013),
- receiving the input information about economic and social growth in country and business environment (EU, USA, etc.).

Figure 5. A model of reindustrialization




Source: own work.

*Second*, an ICT has impact on economic and social growth (B), measured by:

- domestic share of ICT in GDP,
- domestic share of ICT in employment,
- domestic share of ICT in creation a new knowledge and skills,
- domestic infrastructure for supporting ICT sector and, vice versa, impact of ICT clusters and other infrastructure on economic and social growth,
- impact of ICT on other sectors as education, e-government, e-banking, etc., which support industry sectors.

*Third*, an ICT has impact on resource base (C in model) through:

- development of new and emergent technologies,
- development and continuous improvement of knowledge and skills using e-learning and other ICT supported approaches,
- development of ICT infrastructure as ICT clusters (Arsovski Z., 2013),
- development of ICT assets through effective transfer of ICT,
- promoting and fostering an ICT supported entrepreneurship,
- using ICT foreign associations for obtaining money for investment for missing knowledge and skills, etc.

In the model, the crucial elements are three processes of reindustrialization in fourth sub-models, i.e.:

*P1* – Development of a new vision and strategy (Evans, Dean, 2011; Juran, 1995; Kanji, 2008),
*P2* – Development and implementation of strategy plans, and
*P3* – Realization of plans in industrial sectors.

For purpose of process P1, the role of ICT is in:

*P1.1* – Ensuring letter and smart information from and to A, B and C,
*P1.2* – Using ICT improved knowledge and skills of leaders by creation a new vision of reindustrialization (Vera, Crossan, 2004),
*P1.3* – Facilitating access (using ICT) to finance across EU and other financial sources,
*P1.4* – Integrate all stakeholders by ICT and building the collaborative industrial eco-system with defining role in planed value chain,
*P1.5* – Optimization of resources according stakeholders needs and requests,
*P1.6* – Defining the new business models of enterprises and industry as whole.

Outputs from the process P1 are inputs to sub-models A, B, C and process P2. Process P2 also is supported by ICT through:

*P21* – Alignment the overall strategy on component strategies, as i.e. technology on component strategies (technology strategy, employment strategy, entrepreneurship strategy, knowledge) and skills strategy (education strategy, financing strategy, government restructuring strategy) etc.,
*P22* – Development component strategic plans with emphasizing role of ICT as enablers,
*P23* – Implementation of strategic plans on state of regional levels in industry and other related sectors,
*P24* – ICT supporting a strategy plans implementation, especially in SME with lack of resources.

In this process input are also from sub-models A, B, and C, and output is vice versa. The crucial output goes to process P3, in industrial sectors. It is supported by ICT. ICT has significant role in this process through:

*P31* – Improving a existing processes,

*P32* – Designing and establishing a new processes,
*P33* – Designing a new products or modification of existing,
*P34* – Creation of new jobs,
*P35* – Fostering entrepreneurship and establishing new firms,
*P36* – Strengthening an internal and external communications,
*P37* – Strengthening an innovative potential in firms and sector as whole, etc.

Outputs from this process P3 go to sub-models A, B, C and through it back to processes P1 and P2. On this way is possible to modeling a reindustrialization as dynamic and very complex systems. For each component of the system is possible to identify key variables, as well as relations among variables in the same component and other components.

## 4. Case study for region of Central Serbian

A Central Serbia, as one of region with high impact on Serbian economy, had been devastated in previous twenty five years, so GDP per capita is now less then in year 1990. In structure of business activities was dominated automotive industry, food industry, construction and textile industry.

Sector of services was covered by education, engineering, ICT (on lower level), consulting and tourism. Agriculture was also on high impact (ca. 25%). For the purpose of the article, is necessary to emphasize that in this period in industrial sector all business activities were directed to automotive assembler (Car factory "Crvena Zastava"). Now, it did not exists because is transformed end take off by "Fiat Serbia". Direct result of transformation is lost about 30,000 jobs in automotive and supporting industry in Central Serbia in previous 15 years. In this period structure of jobs is quit different, because service sector is dominated (more than 60% of jobs), industry (ca. 20%) and agriculture about 10% of jobs. How is possible to start with reindustrialization in this situation, using ICT?

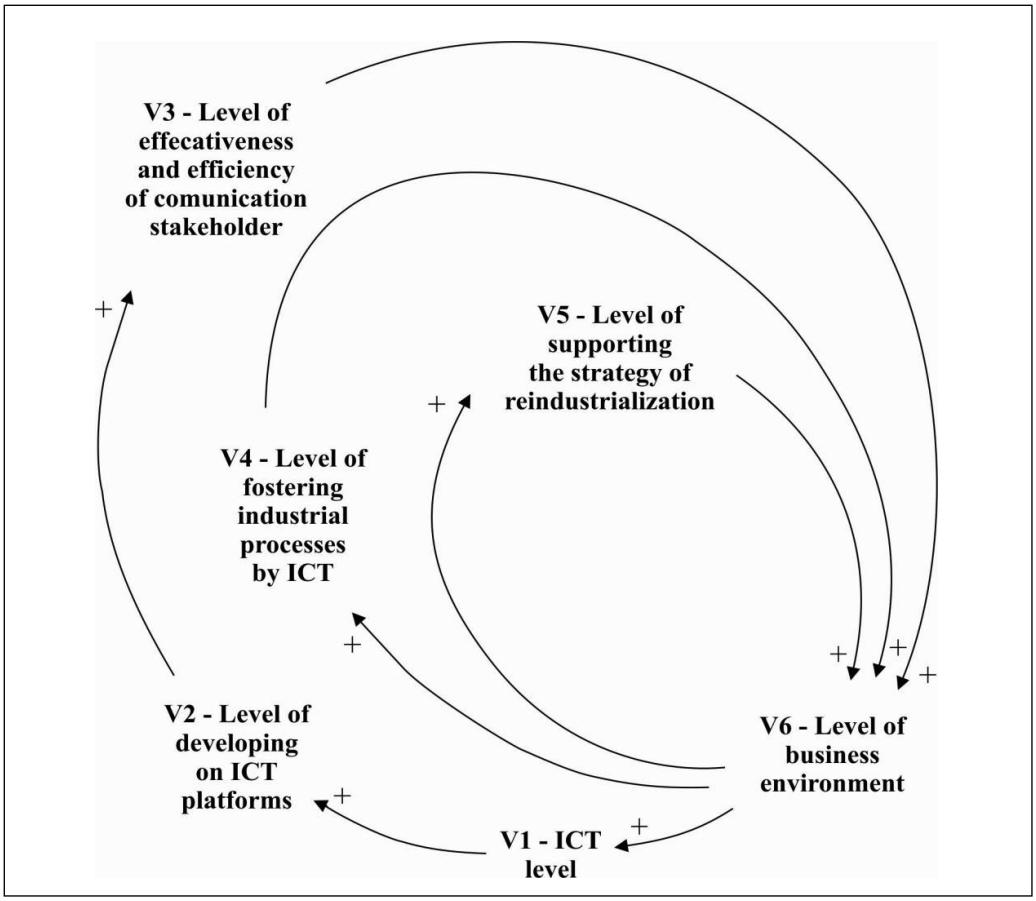
Theoretically, there are two approaches to develop a strategy of reindustrialization, using ICT:

- resource based strategy, or
- market based strategy.

Until now was attempt to attract a foreign investment based on existing resources. It was old industrial capacities and qualified work forces. In this process ICT was dominantly treated as part for automatization of industrial process. Parallel with it, in Central Serbia was created ICT cluster with more then 50 members, which is connected with automotive and tourism clusters. On this way ICT had low impact on reindustrialization.

According the sub-model presented in Figure 6, an impact of ICT on reindustrialization through later understanding a stakeholder needs and request is presented in Figure 6.

Figure 6. Sub-model of ICT impact on a stakeholder needs and requests

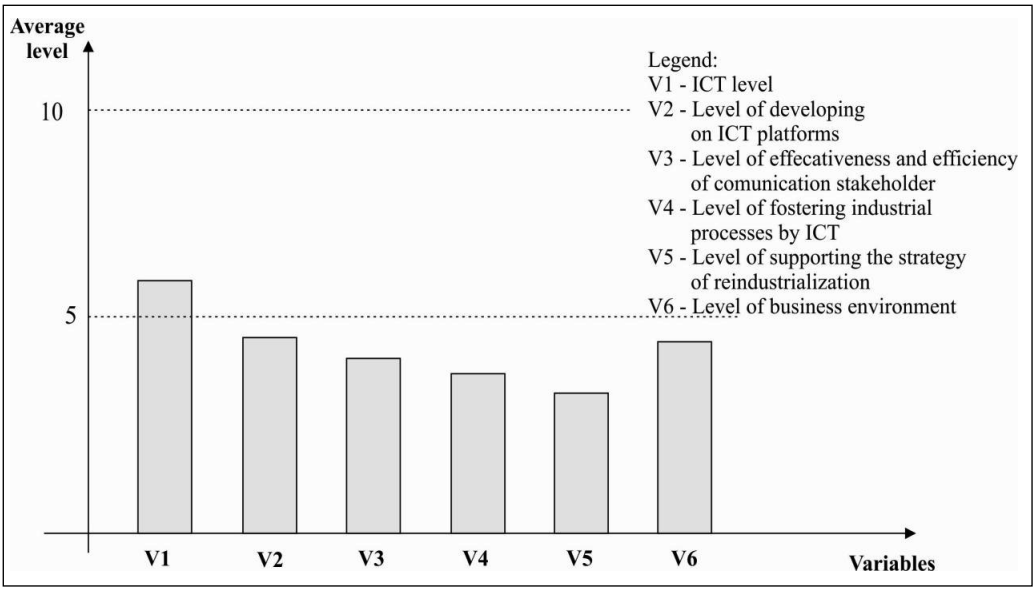



Source: own work.

In proposed sub-model independent variable is variable V1 (ICT level) and other variables are treated as depended variables. The objective of simulation in this sub-model is to find optimal combination of all variables (V1÷V6) in purpose to obtain stakeholders needs and request a satisfactory level.

Using method of expert assessment on scale 1-100, on Figure 7 is presented values of variables in the model based on field research in Serbia. For it is used questionary with appropriate questions in purpose to define value of each variable (Fig. 7).

Figure 7. Assessed values of variables in the sub-model of stakeholders need and requests



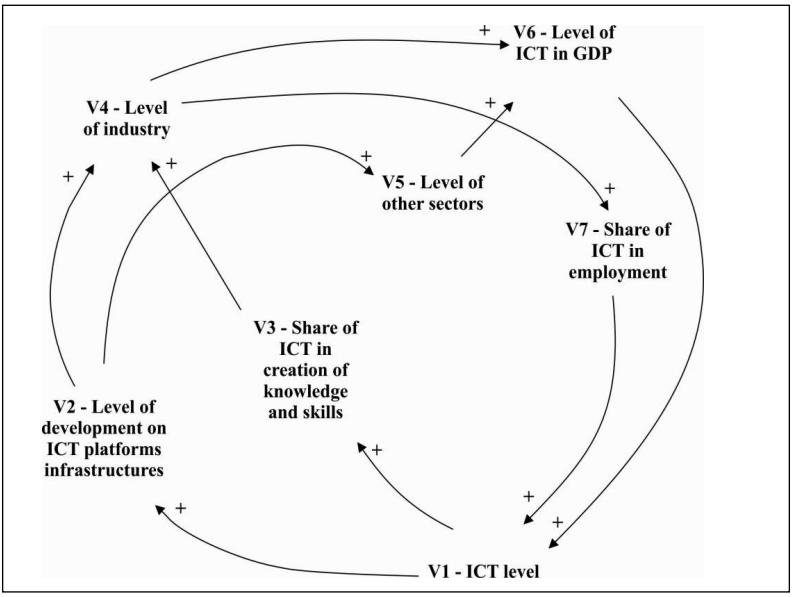

Source: own work.

For now there are not researches in Central Serbia related to impact of variables on level of business environment. Using appropriate questionnaires and statistical software is possible to define the relations among variables. According the first research is obviously that there is synergy effect. With relative small improvement in value of ICT level, the depend variable (V6 – level of business environment) will be significant improved.

The second sub-model of ICT impact on reindustrialization has presented in Figure 8. In the sub-model independent variable is V1 (ICT level) and other variables are dependent. For reindustrialization are more important variables V6 and V7. The same comments are about methodology for founding this sub0model as for previous model.

In this Figure is clear that exist synergic effect of variables in the model on variable V4 and V5 measured by variable V6 and V7. Also, this model is connected with previous because has two same variables, i.e. variable V1 and variable V2.

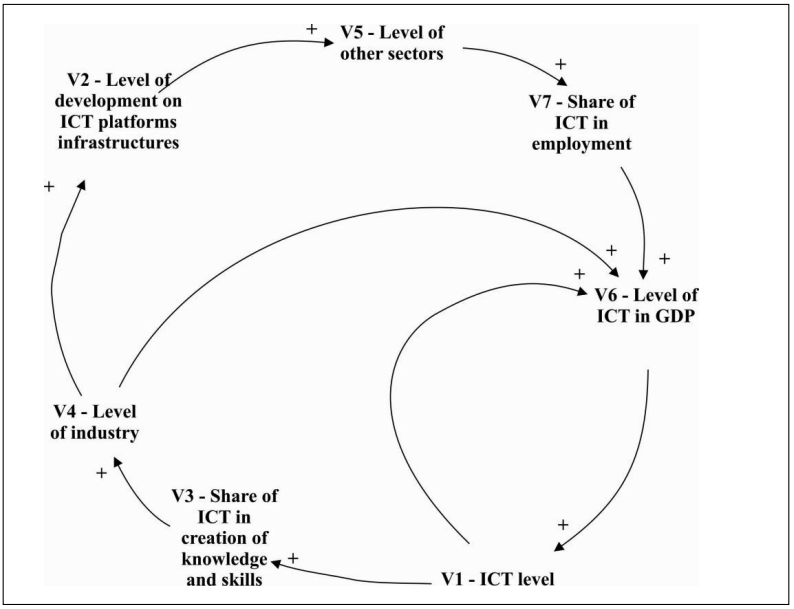
Figure 8. Sub-model of impact of ICT on economic and social growth




Source: own work.

The third sub-model covers resource base for ICT (Fig. 9).

Figure 9. Sub-model of impact of ICT on resource base

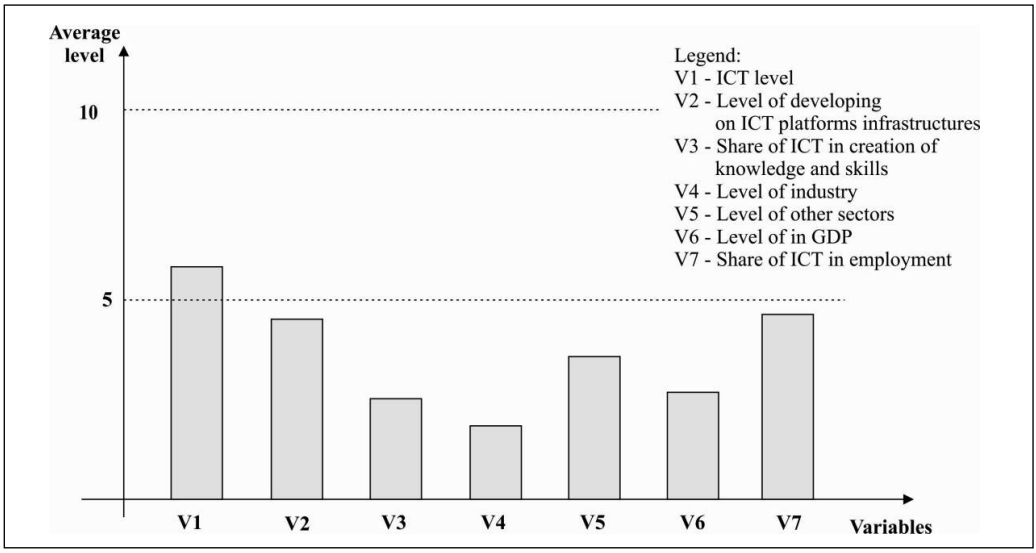



Source: own work.

The some comments about impact of ICT are as in previous models.

In Figure 10 are show basic values of variables in this model for region Central Serbia.

Figure 10. Existing levels of variables in resource model




Source: own work.

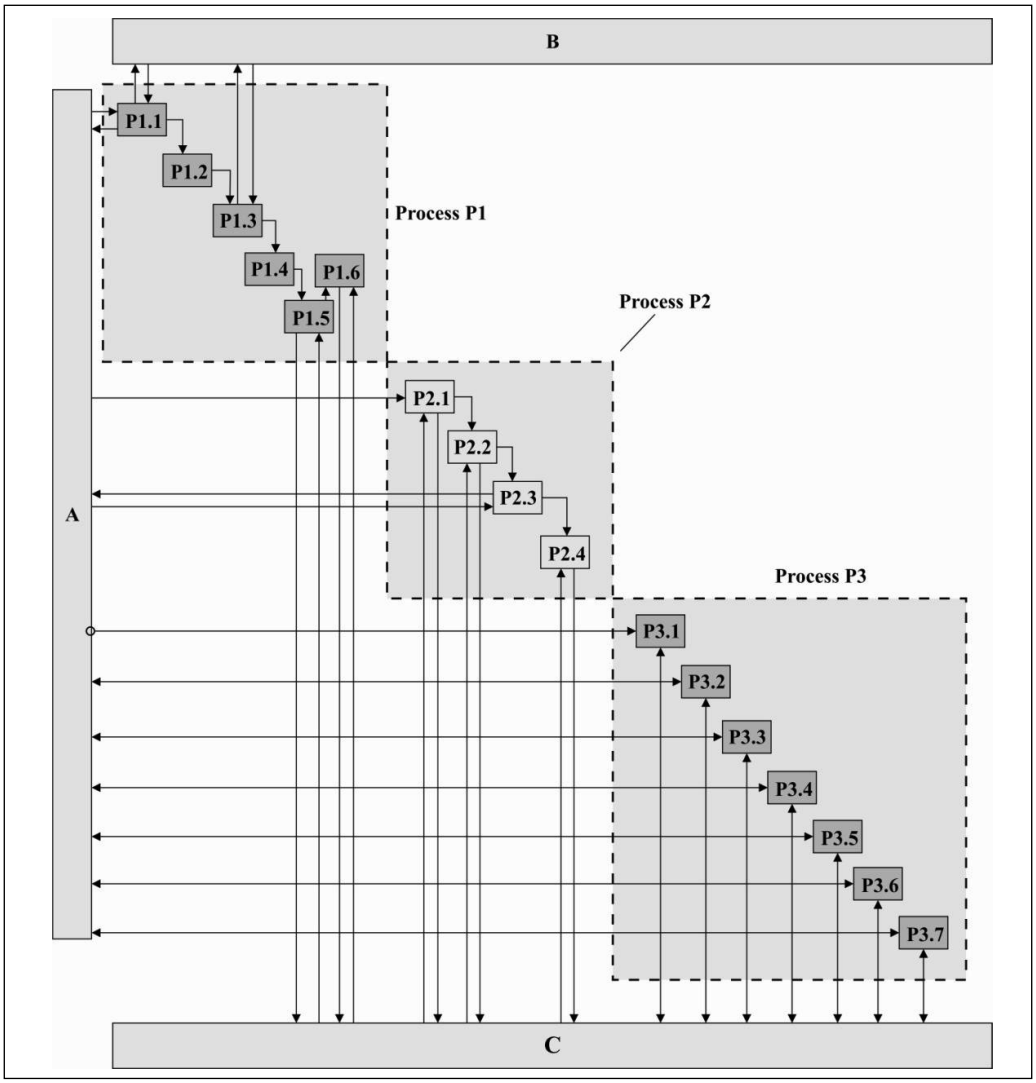
With a relative small enhancement of ICT level is possible to improve significantly, all depended variables. For purpose of the article, we emphasize variable V6 (effectiveness of ICT transfer).

The fourth model of ICT supporting is crucial for reindustrialization. In this model are emphasized three processes, i.e.:

1. Development of a new vision and strategy.
2. Development and implementation of strategy plans.
3. Realization of strategy plans in industrial sector.

According analysis in previous chapter all three processes have own sub-processes interrelated as in Figure 11.

Figure 11. The Process model of reindustrialization




Source: own work.

In the model is possible to analyze impact of ICT using different approaches and methods, as:

- performance management systems (PMS), in interaction with quality management systems (Becker et al., 2003; Crosby, 1979; Foster, 2004; ISO standards, 2011; ISO standards, 2009),
- simulation methods,
- statistical analysis (Soong, 2004),
- balanced score cards (Dror, 2008),
- Fuzzy AHP (Zeydan, Colpan, 2009),
- TOPSIS, etc.

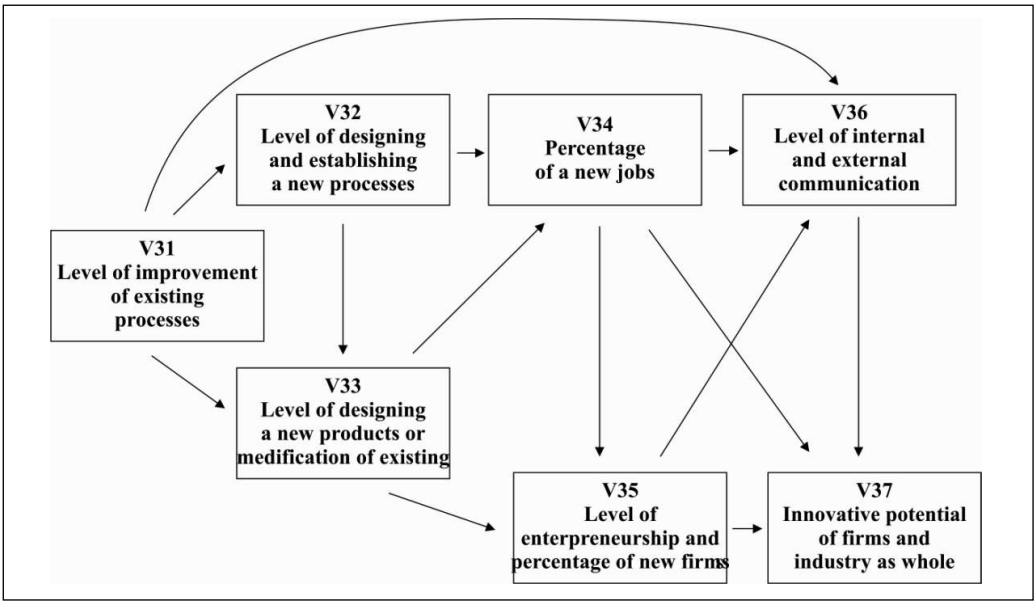
In first case for each sub-process has to define own performance metrics (Arsovski, 2006) according overall goal of reindustrialization as process P (Oukland, 2004). In next step is necessary to define planed values of performances and monitor their values in proposed dates. Using established QMS and appropriated quality tools and methods is possible to find , "weak points", and lead the sub-processes to planed value of each performance (Jeston, Nelis, 2008).

In second case, using simulation methods, as an example extended Petry Nets (EPN). In this case, process map is transformed in event map with triggers and own values (Arsovski et al., 2009).

In third case for each sub-process as well for each process A, B and C, has been conducted appropriate questioner with questions about state of each sub-process.

Each question is oriented to find the value of a variable. So, in a shadow is net of interconnected variables, exogenous and endogens. This case is good for defining relations among them and strategically leads the process of reindustrialization. In Figure 12 is shown statistical base model of process P3.

Figure 12. Statistical base model of process P3

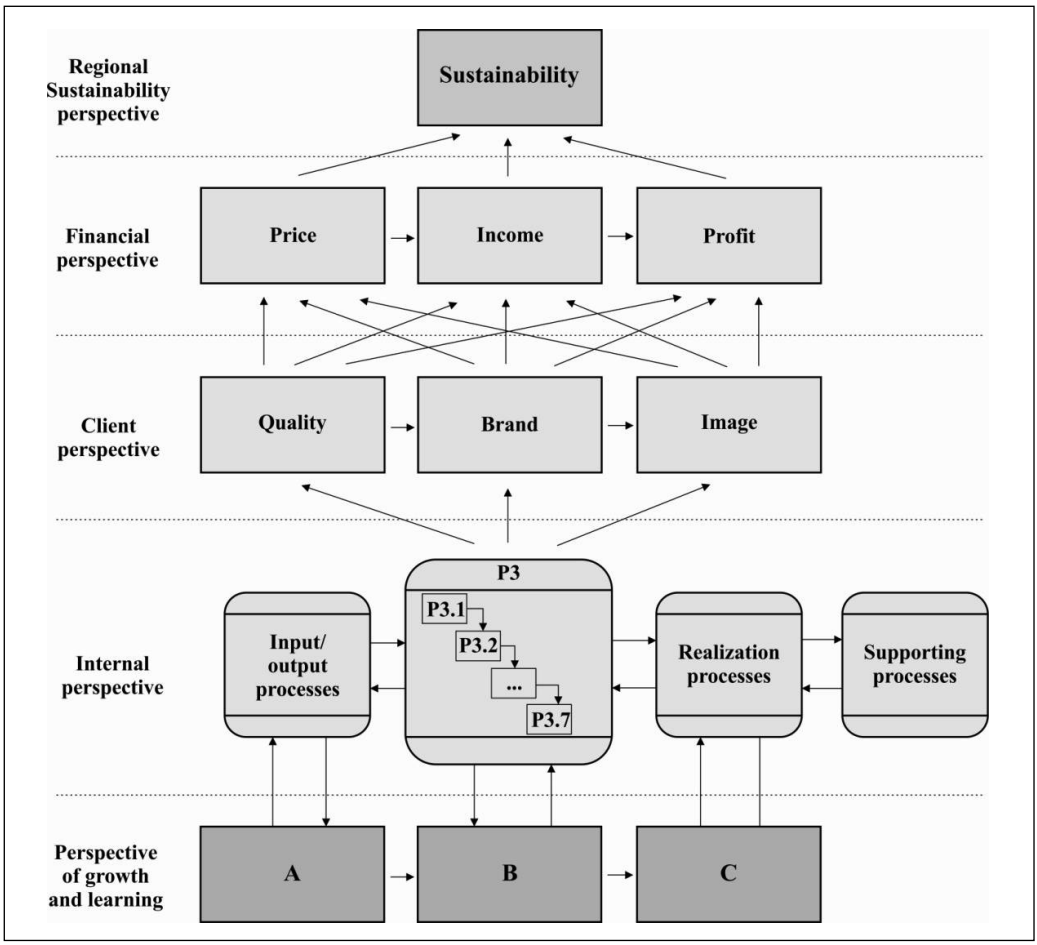



Source: own work.

In the model value V31, V32, V33, V34, V35 and V36 are depended, and V37 is independed. In Figure 12 is presented expected relations among them. Only using representative sample with more than 100 organizations is possible to find impact of each one to others and correlation. The relations with Cronbah regression coefficient greater then 0.5 will be included in the research model.

Previously described statistical approach is very appropriate combine with BSC approach (Dror, 2008). For the problem of reindustrialization on level of process P3, in Figure 13 is show strategic map with added regional sustainability perspective on the top of strategy map.

Figure 13. Strategic map for assessing the impact of process P3 on regional sustainability




Source: own work.

All relation in this model has been defined using previous research or benchmarking with similar cases in literature or in praxis in business environment.

Fuzzy AHP and TOPSIS approaches are very suitable for resolving the reindustrialization problem because there a lot of criteria (beneficial and cost), with preferences of stakeholders, their own weights, etc.

Based on previous theoretically research for region Central Serbia has been defined project of reindustrialization (Municipality of Kragujevac, 2009), based on combination resource-and market based strategy. All resources in first stage will be concentrated in scientific technological park in which will be generated knowledge, skills and competencies needed for effective reindustrialization through ICT (Adzic, 2011; Republic Office for Development, 2011; USAID, 2010; Djuricin, Vuksanovic, 2013; Dimitrijevic et al., 2012; The Reindustrialization of the United State, 2013).

## 5. Conclusion

A globalization has two dominant faces: (1) growing a service sectors and (2) reducing industrial sectors. In transition economies in last three decades in turbulent business and political environment there was an enormous reducing industrial activity with following negative effects: reducing jobs, reducing GDP/capita, lower competitiveness, etc. Now is necessary to work in opposite direction, growing the industrial activities bat on different way. It is main purpose of reindustrialization process.

In the article is analyzed impact of ICT in process of reindustrialization in which ICT has significant impact on:

- a recognizing a stakeholder's needs and requests using of support communication channel,
- economic and social growth through implementing ICT in there processes on upper levels,
- resource base especially through ICT based technologies, skills and knowledge,
- development of new vision and strategy of reindustrialization,
- development and implementation of strategy plans for reindustrialization, and
- realization of reindustrialization strategy plans in industrial sectors according priority and resource availability.

In case study of Central Serbia region is pointed out the technology transfer through technology park "Kragujevac". In this solution, the ICT is viewed as driver for further reindustrialization and achievement of planed competitiveness achievement.

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# PART II

# DEVELOPMENTAL CHALLENGES OF CONTEMPORARY ECONOMIES – ECONOMIC AND SOCIAL ASPECTS

Chapter 8

# The CNR Institute ITAE: A Suitable Example of the Contribution of Research in the Sustainability Pathways

*Giovanna Centorrino, Tindara Abbate, Daniela Rupo*

*And therefore never send to know*
*for whom the bell tolls;*
*It tolls for thee.*
John Donne Meditation , XVII.

## 1. Introduction

The issue of environmental sustainability assumes a great interest for researches and practioners. The need to reconcile economic growth and fair distribution of resources in a new development model began to emerge in the 70s (Kovel, 2007) due to the effects of the oil crisis. The increase in oil prices led to rising energy costs and a consequent inflation that shook the world economy; at the same time, however, it also triggered an awareness connected to the belief that the concept of traditional development, linked as it was only to economic growth, would cause the collapse of natural systems in the future. Rooted beliefs in economic and social progress began to lose strength and a new vision started to spread relying on the use of renewable energies as a solution to the scarcity of fossil fuels and of oil.

In this perspective, a new consciousness was beginning to develop; it drew the attention of citizens to social and ethical issues in relation to environmental degradation, pollution, distribution of wealth, the depletion of energy resources, human rights, justice and social equality. In other words, the concept according to which economic growth itself is not enough was being formed: development is real only if it increases the quality of life in a sustainable way.

Today, we are more aware and are experiencing a new meaning of social living, which previous generations never contemplated: a modern meaning to being a "citizen" which manifests itself not only through political preferences or voluntary actions, but which is inherent in the choices of relevance on what to buy and consume. "We are starting to put our money where our ideals are" (Stengel, 2009, p. 1).

Our social structure with its norms and principles is veering toward guidelines aimed at reconciling economic behaviour with ethical values. Based on the above considerations, the question is not only what is good for man but, rather, what is good for the development of the system. Thus, development, which emphasizes the relationship between the protection and enhancement of natural resources with an economic, social and environmental framework, is aimed at satisfying the needs of the present generation without compromising the future generation, as stated by the so-called Triple Bottom Line[1]. According to this concept, socially responsible organizations, besides assessing their strategy with respect to economic and financial parameters, must also integrate the economic aspect with an assessment of environmental and social behavior, considering the "Three Ps": Profit, People and Planet (Vecchiato, 2006, p. 131).

The issues under discussion concern the well-known phrase "environmental sustainability", which includes not only issues on environmental degradation but also ethics, economics and the most advanced technology and scientific research, contemplating cross cutting issues such as the violation of human dignity and freedom, poverty, economic decline and the recognition of rights and equal opportunities.

With this in mind, this study intends to examine the contribution of research centers to stimulate efficacious sustainability paths, encouraging the creation and the maintenance relationships between the protection and the enhancement of natural resources with economic, social and environmental aspects. We perform a descriptive-interpretative qualitative research through the case study of Institute of Advanced Technologies for Energy "Nicola Giordano" (ITAE) of Messina, as research institute of the National Council of Research (CNR). Since its foundation, in parallel with the evolution of the concept of sustainability, ITAE has been a reference point and centre for promotion and dissemination of scientific knowledge in close relation to environmental sustainability issues, with also the design and implementation of new energy technologies of wide economic and social interest.

The paper is organized as follows. In the next section, we start by providing a theoretical framework needed to address the empirical analysis. In section 3, we explain the methodological approach we have followed to perform the analysis, whose results are shown in section 4. Finally, section 5 concludes the paper.

## 2. Theoretical background

The theme of environmental protection has been creating increasingly widespread interest, in recent times. Its transversality, made strong by the virtuous, shareable content, has led to an increase in the number of initiatives finalized at promoting behaviors aimed at environmental protection. In this paper, two models are specifically referred to as they are considered representative of concrete actions targeting behavior inspired by environmental protection. The first example in Italy concerns the position taken by Confindustria Association, and the second example is located in a broader European context, Horizon 2020.

[1] The triple bottom line concept of sustainable development attempts to integrate not only environmental and social aspects but also economic aspects. It brings together three critical elements: environmental responsibility, social equity and economic performance. For further reading on the triple bottom line concept and related reporting issues, see AA. VV., 2005 and Ricci, 2004.

Confindustria Association has recently published a handbook which comprises the reference values by which companies should be guided by virtuous behavior in the area of environmental sustainability: The Confederal Charter of Principles for Environmental Sustainability. This document has an important role because it indicates the reference points which may constitute a behavioral platform for companies that want to adapt their actions so as to be environmentally friendly, and also a decided determination to give the economic and industrial world a strong signal underlies its preparation, pointing toward a new path characterized by behavioral and ethical content.

This Charter is an indicator of behaviors directed to create wealth and wellbeing of the community, as a true corporate culture. In this perspective, environmental sustainability becomes a pillar of development and should be pursued through synergies among industrial system, institutional and social partners. Companies and organizations of associated enterprises that voluntarily adhere to the Charter containing the Principles for Environmental Sustainability assume the values and commitments contained therein as an integral part of their work and their process of production growth.

In brief, the 10 commitments in the Charter are as follows:

- achieving environmental sustainability goals in the short, medium and long term,
- adoption of a precautionary approach,
- efficient use of natural resources,
- control and reduction of environmental impact,
- centrality of innovative technologies,
- product stewardship,
- responsible management of the supply chain,
- awareness and training,
- transparency in relations with the parties concerned,
- consistency in international activities.

The action at the level of the European Community by Horizon 2020 is very different. In fact, in this second decade of the 21st century, Europe will have to face the new challenges posed by profound changes in the world order. Innovation, increased productivity, and guarantees of long-term growth respecting the environment become key factors that can help Europe move intelligently and effectively to deal with changes.

Horizon 2020 is a document of strategic planning defined to meet these new needs, which will sustain effectively innovation, research and technological development.

Activities started in the last year and will be valid until to 2020 with a total budget of around € 80 billion. The main strategic objectives of Horizon 2020 are organized in the following projects (see Tab. 1).

Table1. Strategic objectives of Horizon 2020

| Project | Amounts | Purposes |
|---|---|---|
| Science of excellence | 28 billion | This priority raises the level of excellence in Europe's science base and ensures a steady production of world-class research to ensure competitiveness in the long term |
| Industrial leadership | 20 billion | This priority aims to make Europe a more attractive place to invest in research and innovation |
| Societal challenges | 36 billion | This funding focuses on the following issues:<br>• health, demographic change and well-being;<br>• food security, sustainable agriculture, marine and maritime research and the bio-economy;<br>• energy sources, clean and efficient;<br>• intelligent transport, green and integrated;<br>• climate action, efficiency in terms of resources and raw materials;<br>• inclusive, innovative and secure societies |

Source: own work.

In addition, the program covers human and social sciences, which are fundamental to guide the public actors on issues concerning climate change and sustainability, considering that the sustainable development is a general objective of Horizon 2020. The specific funding for climate action and efficiency in terms of resources will be supplemented by other specific objectives of Horizon 2020, so that at least 60% of the total budget of Horizon 2020 is connected to sustainable development. A large part of this expenditure will contribute to strengthening mutual climatic and environmental objectives.

## 3. Methodology

To achieve the objectives of this research, we performed a descriptive-interpretative qualitative research (Denzin, Lincoln, 2000), aiming to provide an useful description, explanation and interpretation of the phenomenon under investigation. We have chosen this research methodology because its purpose is to examine a phenomenon that is occurring at a specific place and time, including the conditions, practices, structures and relationships that exist, processes that are going on or trends that are evident (Maxwell, 1998).

Therefore, we conducted a case study drawing evidence from the Institute of Advanced Technologies for Energy "Nicola Giordano" (ITAE) of Messina, as research institute of the National Council of Research (CNR). We selected CNR-ITAE for three main reasons. The first concerns a belief in the great potential impact of industry on the environment, and the consequent need to imagine a new kind of relationship between industry and environment. In the short-term, sustainability must be the target of reference more than ever in a close relationship between the evolution of research and growth of industry. The second reason is the virtuous path that ITAE Messina is still following in the field of sustainability, not only on issues of scientific research but also in relation to the business world with which it maintains ongoing relationships. Finally, the third reason concerns the opportunity to highlight that this public institution is quite interesting consid-

ering its relationship with the territory it works in, and where there is often a lack of sensibility for environmental issues.

For the gathering data we used different type of materials, methods and investigators in the same study (Denzin, 1978). Firstly, we conducted desk research to acquire data that already existed in documents, internal reports, dossiers, articles in order to obtain a good understanding of this Institution and its main research projects and activities. Second, we performed field research through different rounds of in-depth interviews in order to explore specific aspects related to this research center, such as its main projects, activities, organizational structure, research results, potential development and etc. We carried out interviews with different internal resources because in this case they are a key informant and respondent for the reason that they have detailed about this research center. The interviews were conducted in March 2015, and each interview lasted approximately 2 hours, following the traditional methodological prescriptions on data collection through personal interviews (Lee, 1999). Specifically, the interviews were transcribed and carefully analyzed for wealth of information and knowledge. For validating our qualitative analysis, we presented the results to the original informants in order to obtain their feedback and corrections (Elliott, 1998).

The results of this case analysis are reported in the next section.

## 4. CNR-ITAE

In the previous paragraph, two realities have been presented, and they express, even if in different ways, a common approach to one of most important concepts that characterizes our century: the model of environmental sustainability. In this sense, globalization has created a network connection between multiple heterogeneous elements that contribute to determine events. The case concerning the ITAE Research Institute of the CNR is an integral part of that network connection. Knowledge transfer from science to industry has been shown to be beneficial for industry. In this respect, among the various contributions of public science, the increase in knowledge stock in the field of environmental problems has had a positive effect on economic growth (Foray, Lissoni, 2010).

### *4.1. The background*

The Institute of Advanced Technologies for Energy (ITAE) "Nicola Giordano" was founded in Messina by the National Research Council (CNR) in 1980, by Prof. Nicola Giordano under the name of "Institute for Research on Methods and Chemical Processes for Energy Conversion and Storage". He was the director until his death in 1996, setting out the strategy and aims of research that are still relevant[2].

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[2] At the beginning of its activities, the Institute was located in an old factory of essential oils, within which research laboratories were adapted. Later, the growing importance in this field of expertise and the significant strategic role shown in the development of energy technologies led to a grant from the Government with which it was possible to build a new and much larger building, suitable to the growing needs of a research institution. The new building, located in front of the old factory of essential oils, has been fully operational since 1993. It consists of 19 fully equipped laboratories for the preparation and characterization of materials and components, the construction and testing of devices and prototypes. These laboratories are located in a building that is spread over three floors with a total area of 4,800 square meters, and also includes, offices, a conference room, library, guest lodgings and canteen.

Recently, a "Center for the promotion of innovation and the transfer of energy technologies" has been built in an area adjacent to its headquarters. The laboratories have been prepared for research closer to the direct interests of companies that have the potential to place an office inside the building, forming a public-private laboratory. This allows companies and the public research institution to strengthen the final part of a process leading to innovation, bringing new innovative technologies to the market. The structure is capable of organizing and promoting the relationship between potential users and producers of new energy technologies close to being marketed, in order to strengthen scientific and experimental collaboration directly with the business world.

## 4.2. The ITAE mission

The original idea of the Institute, prefigured by Prof. Giordano since 1980, was based on the belief that hydrogen would be one of the main elements of the energy supply of the future. He glimpsed the huge potential of this and undertook research on hydrogen production and storage for its use in the field of mobility, and as a clean energy carrier coupled with the use of efficient technologies for its transformation with low environmental impact.

Later, the research topics were updated to the scientific development of the sector and the increasing demands of the market, while still remaining in the field of transformation and storage of energy. At heart, the identity, ideas, values and attitudes that are evident in all the Institute's activities are now oriented towards a logic of environmental protection that is expressed in the general objective of reducing $CO_2$ emissions.

The identity of ITAE, which has consolidated over time, is organized in different levels which correspond to issues involving all research activity, and also specific areas of administration and finance. The research activities of ITAE focus on new environmentally sound energy technologies with particular attention being paid to the development of different types of fuel cells. In-depth know-how acquired means that ITAE can start from the preparation of individual components of a cell to the realization of power stacks. Also, the development of electrochemical energy storage systems with super capacitors and batteries assumes a relevant interest. At the same time, issues related to the production and storage of hydrogen, foreseen by ITAE already in 1980 as the energy carrier of the future, continue to be a strong element in the strategy for market penetration of electric vehicles fed by hydrogen. A current study is investigating the many possibilities of producing alternative fuels for cars, and the use of industrial organic waste to produce hydrogen and/or biofuels.

Solar energy is also studied. Following the deep-rooted will to significantly reduce the use of fossil sources, one line of research is directed to photovoltaic cells, to systems of photo decomposition of water, and to thermal systems in general. With regard to thermal research, innovative adsorption systems for space cooling using thermal sources available, both from solar and/or waste heat, are being developed.

A common methodology for all research performed at ITAE consists of the study of procedures for materials synthesis and characterization, the development of components and the design and construction of prototypes, testing application in embedded systems or mobile and field demonstrations, along with high efficiency and low environmental impact.

Each study is organized into multidisciplinary fields of technology, with specific objectives and development strategies that take interactions between different sectors for the development of combined systems into account. The purpose is reduction of energy consumption, efficient use

of resources and environmental compatibility. In addition, to the four lines of research, the strategic plan includes three other support activities: legal, socio-economic and consulting and technology transfer.

Another area of particular interest is the training that is conducted at ITAE. In following a high-quality research-oriented approach, scientific productivity becomes an internalized value, open to issues of sustainability. This vision is reflected in the basic training of young researchers trained in an international context in which they spread scientific knowledge with a high output of articles and patents. Based on the foregoing reasoning, there is no doubt that all that ITAE puts at the disposal of the industrial world in the progressive advancement of environmental sustainability clearly overlaps with the values laid down in the Charter of Confindustria, as previously mentioned.

In a different way, common ground with the Horizon 2020 program is analyzed. In this case, it is necessary to shift observation of the Institute to a more technical field, with which it is more directly involved. One of the priorities of Horizon 2020, "societal challenges", includes the following, which are also the subject of specific research by ITAE:

1. Secure, clean and efficient energy,
2. Smart, green and integrated transport.

With regard to the former, four broad lines of actions are foreseen:

- reduction of energy consumption and carbon footprint through smart and sustainable usage,
- low cost, low carbon electricity supply,
- promotion of alternative fuels and mobile energy sources,
- realization of a single European electricity grid.

Research currently being developed at ITAE converges in the same line of action, indeed, they specifically concern:

1. Developing the use of renewable energy sources such as solar photovoltaic, solar thermal, geothermal etc.
2. The development of fuel cells, electrolyzes, technologies for hydrogen production, electric and thermal energy storage systems.
3. The study of the integration of various technologies for the production of electrical energy at low environmental impact, for the realization of a smart grid.

With regard to the latter, research activity on fuel cells, which has been ongoing at ITAE for some time, is also aimed at the realization of sustainable mobility for both the automotive and naval sectors.

The degree of development achieved by the public structure in the present study is evident from what has been observed and reported above. A further interesting observation can be given regarding parameters that can provide a measure of the degree of results up to now obtained by ITAE.

## *4.3. Indications of results*

The observations hitherto proposed have shown that ITAE has achieved important results in terms of R&D in new energy technologies. The results obtained address two questions that relate to today's energy perspective at national and international level. Indeed, the key points characterizing today's energy strategy interest are: use of energy resources related to the territory

and, if possible, renewable; and intervention on the users system to optimize structures to make the best use of energy, thereby lowering resource utilization.

Regarding the first point, ITAE has developed a high level of know-how on materials, components and processes suitable to produce prototypes. Representative examples include systems with low environmental impact for electrochemical conversion of energy from fuels (hydrogen, methane) to electrical energy, or electric storage batteries (advanced batteries, super capacitors), often in collaboration with Italian and foreign companies.

The second point is inherent, to a greater extent, to theoretical and informative scientific issues with an impact on the social system, and results may be identified in the following areas:

1. Number of scientific publications.
2. Increased staff numbers.
3. Obtaining funds from EU or regional programs, or through direct relationships with businesses.
4. Collaboration with the academic world.

The following Table (Tab. 2) shows the results of ITAE's scientific production from 1998 to 2011. In this regard, it should be noted that, given the characteristics of the type of research carried out mainly on commission and for this reason often bound by confidentiality agreements with business customers, from the data presented, the prevalence of technical reports for activities of commissioned research, compared to scientific articles in journals or conference proceedings is clear. Indeed, some of the technical reports were later processed for the purposes of publication in journals or conference proceedings, others, bound by confidentiality relationships with client companies, were classified as technical reports for research on commission.

Table 2. ITAE research products

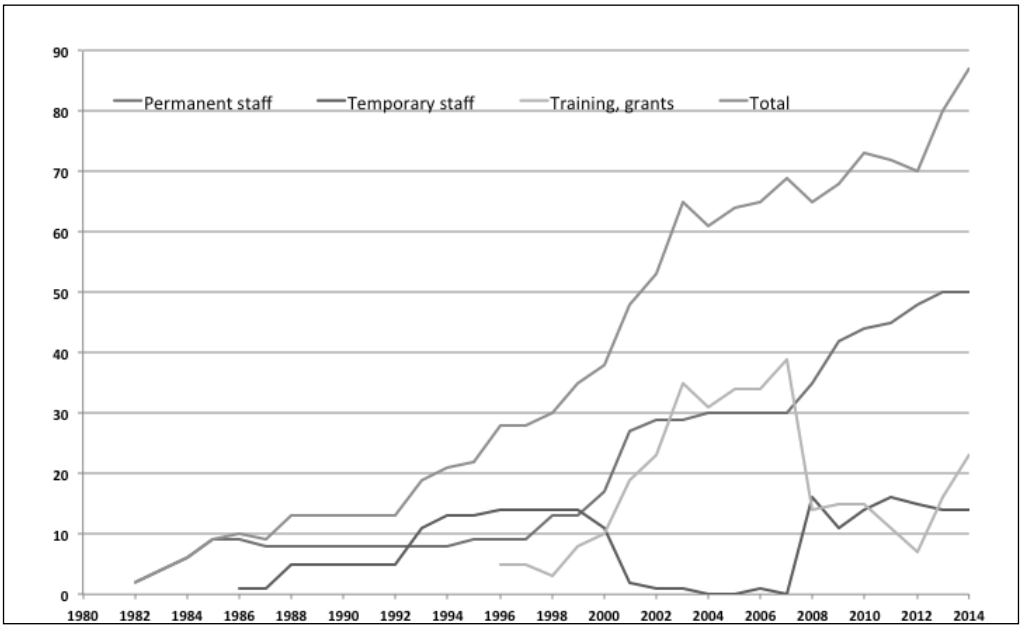
| Years | Patents | Papers in international journals ISI | Articles in refereed conference proceedings | Monographs | Technical reports of commissioned research | Abstract Proceed. |
|---|---|---|---|---|---|---|
| 1998 | 0 | 34 | 30 | 0 | 17 | 10 |
| 1999 | 1 | 21 | 32 | 0 | 9 | 12 |
| 2000 | 0 | 25 | 21 | 0 | 12 | 8 |
| 2001 | 0 | 32 | 23 | 0 | 15 | 6 |
| 2002 | 2 | 19 | 25 | 0 | 21 | 8 |
| 2003 | 0 | 15 | 25 | 1 | 37 | 12 |
| 2004 | 4 | 29 | 33 | 0 | 40 | 16 |
| 2005 | 1 | 25 | 35 | 1 | 30 | 16 |
| 2006 | 3 | 33 | 32 | 0 | 36 | 21 |
| 2007 | 2 | 32 | 29 | 1 | 50 | 46 |
| 2008 | 0 | 39 | 13 | 1 | 55 | 26 |
| 2009 | 0 | 39 | 30 | 2 | 51 | 24 |
| 2010 | 0 | 34 | 24 | 4 | 48 | 39 |
| 2011 | 1 | 33 | 26 | 2 | 39 | 18 |
| 2012 | 2 | 47 | 26 | 0 | 46 | 17 |
| 2013 | 0 | 56 | 20 | 0 | 47 | 17 |

Source: CNR-ITAE.

Regarding the increase of staff (Fig. 1), a progressive increase over time can be observed. However, some features should be pointed out. Indeed, given the trend of temporary staff, it can be seen that over the period 2001-2007, the curve is nearly at 0. During the same period, there was an interesting absorption of such personnel into the permanent staff, as can be seen from the graph.

Furthermore, there was a significant number of training personnel which, after a period of steady increase, abruptly decreased (2008) as result of a transition of young people from training to the role of researcher in temporary staff.

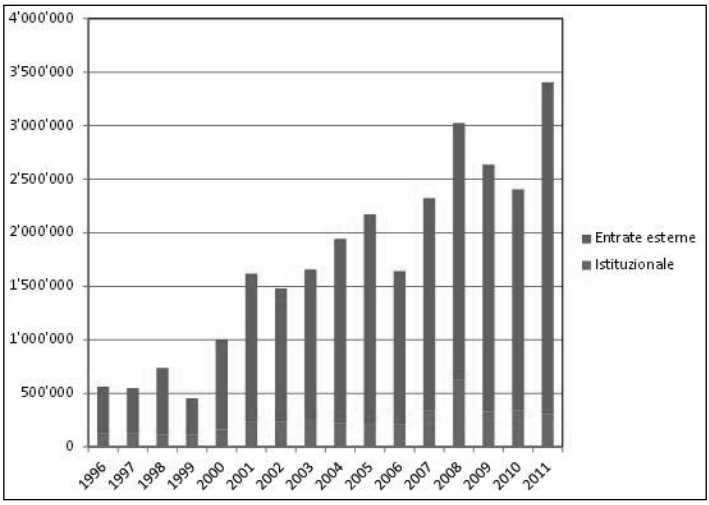
Figure 1. Personnel over time at CNR-ITAE




Source: CNR-ITAE.

Considering the trend over time of funds for research obtained by ITAE (Fig. 2), about 85-90% came from sources outside CNR as the result of participation in European and national calls for proposals, or for research commissioned by companies. As already mentioned, given that research funds were obtained on a competitive basis, the topics covered, and skills acquired, constitute an offer of research that meets the requirements of quality and innovation required by the various calls for proposals and suited to providing results of particular interest to companies that carry out their activity in the energy sector.

Figure 2. Funds for research




Source: CNR-ITAE.

ITAE also carries out important exchanges with the academic world such as the Faculties of Engineering of Messina and Catania. Many students have prepared their final degree theses at the Institute. In addition, this ongoing collaboration has led to the realization of Master and PhD courses related to ITAE's topics of research. These relationships consolidate a synergy among research institutes, universities, industry and government that appears to corroborate the concept of Triple Helix which develops the theory that these partnerships allow the creation of infrastructure in the area of knowledge aimed at the social development (Etzokowitz, 2008).

## 5. Conclusion

This analysis has highlighted a virtuous connecting link between the world of research and the world of industry in the energy sector. The case of the Institute CNR ITAE Nicola Giordano of Messina is presented, as a public research Institute which is an important point of reference for the research and development of new energy technologies. The article started from a comparison between issues concerning the development of behaviours aimed at environmental protection offered by Confindustria and Horizon 2020 and the activities carried by the Institute, always in line with the same issues. To better highlight this type of activity, several ITAE's aspects were observed taking into account qualitative and quantitative perspectives appropriate to representing such a virtuous structure.

It has been seen how the energy sector is characterized by the strong impact of innovation regarding scientific, technological, social and economic spheres. This versatility is a feature that has, as its main consequence, temporal references in the medium and long term. The energy sector cannot change quickly, but even if the introduction of new technologies will be slow, it will be inevitable as it is primarily driven by the needs of the environment, depletion of oil resources and the political strategies also linked to international agreements.

In any territory, the presence of a structure for technological energy research of adequate size and with high levels of international experience is a crucial point in the knowledge, innovation and development relationships. It may represent a competitive advantage for companies that can exploit this opportunity, together with proper incentives, and become competitive in the new energy scenarios offering technological innovation and savings.

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Chapter 9

# Discretionary Component of Business Social Responsibility

*Svetlana Korol*

## 1. Introduction

The classic definition of "social responsibility" includes economic, legal, ethical, and discretionary expectations that society has waited from organizations (Carroll, 1979, p. 500). Discussions according the matter of the notions and its main parts (economic, legal and ethical) are going to nowadays. However, the discretionary duties of the company as a corporate citizen is understood the least.

## 2. Contrary to mental or discretion

As you know, the term "discretionary responsibility" A. Carroll constituted (1979) in the pyramid of social responsibility by term "philanthropy". Thus, it was tried to attempt clarify the motives of corporate philanthropy. It adds doubts to situation that scientist in his next publications uses terms parallel. However, he refers to "the best examples of discretionary responsibility" voluntarism (voluntarism) and/or philanthropy (philanthropy) (Carroll, 1999, p. 286).

D.A. Whetten, G. Rands, P. Godfrey has also indicate on discussion problems in discretionary responsibility. A. Carroll notes that "some clarification was needed regarding that component of CSR that extended beyond making a profit and obeying the law" (Carroll, 1999, p. 276). Dr. M. Selvakumar and M. Nagalakshmi noted that "the goal of CSR is achieved when its activity meets or exceeds the expectations of all stakeholders". It is the question of its position in the coordinate system that is given by discretionary as business responsibility as a contribution that is not required by economics, law or morality. We can assume that discretionary responsibility starts when conventional expectations of all stakeholders are met. Just do not understand to which stakeholders and expectations directed discretionary responsibility. The answer to this question gives philanthropy as "love of humanity".

According to R. Dafta "discretionary responsibility is *purely voluntary and guided by an organization's desire* to make social contributions not mandated by economics, laws or ethics" (Daft, 2009, p. 143). This definition is generally coinciding with approach of A. Carroll, but

the latter believes that it is impossible to distinguish what is "purely voluntary" and carried out in accordance with social norms (Carroll, 1999, p. 276). Indeed "voluntary" is no reliable criterion in the field of the economic, legal and even ethical responsibility.

A. Carroll emphasizes on *voluntarism* as the main difference of non-ethical responsibility level of the previous three. That is, the decision of the discretionary responsibility is accepted voluntarily, *contrary to the mind* in contrast to the economic, legal and ethical responsibility. Dr. M. Selvakumar and M. Nagalakshmi have also pointed this peculiarity: discretionary responsibility includes generous donations that do not provide any economic benefits to the company and, most importantly, she *did not expect*. That company *acts contrary mind* and *has certain risks*. On practice it should signify that it is not just waited and expected the relevant economic benefits, it must be as it tries to avoid economic benefits (for example, by providing indirect aid of charity).

Take the well-known situation of Emigrant Savings that R. Daft gives as the example of discretionary behavior. After Hurricane Katrina struck a devastating blow to the Gulf Coast, president of the company allocated a significant amount for all clients living in areas affected by Hurricane territory. There is no doubt that Howard Milstein guided by the best feelings. However, the question is whether it can be argued that Emigrant Savings as a result did not receive any "dividend"? Perhaps she eventually lost fewer customers than expected and clients' commitment level to her increased. That is, all the criteria set out above proved as insufficient characteristics of discretionary responsibility (except, perhaps, anonymous charity).

Recall that (discretionnaire) from French means *depending on own mind* or someone *acting in its sole discretion*. The above divergent with the concept of philanthropy, so that even with correction for voluntarism using the term "discretionary responsibility" to refer to the highest level of social responsibility is incorrect. According to the original meaning of the investigated concept Crilly D., Schneider S.C. & Zollo M. determine define "socially responsible behavior (SRB) as discretionary decisions and actions taken by individuals in organizations to enhance societal well-being (do good) or to avoid harmful consequences for society (do no harm)" (Crilly et al., 2001, p. 5). That concrete measures results from the free choice of business decision or its management to implement economic, ethical and legal responsibility even beyond existing standards, requirements and pressure of Tax Inspector, trade unions, etc. So, only this part of social responsibility can be considered as discretionary.

## 3. Priorities of social business responsibility

Social responsibility of enterprises can be defined by three criteria: economic, legal and ethical. The behavior of an entity depends on the elected them economic, legal and ethical priorities.

Scientific publications offer different approaches to the systematization of the existing practices and prioritizing of social responsibility (A.B. Carroll, A. Crane & D. Matten, F.P. van der Putten, M. Selvakumar & M. Nagalakshmi, S.L. Wartickand, P.L. Cochran, W. Visser, W.C. Frederick, Yu.E. Blahov, S.V. Bratyuschenko, A.M. Kolot, M.A. Kuzhelev, T.N. Savyna and others).

The vast majority of researchers, A. Carroll in heard, distinguish four levels of social responsibility: economic, legal, ethical and philanthropic. Thus, A. Carroll named economic responsibility as the pyramid's foundation and social responsibility (be profitable) and on this basis imposes legal (achievement of economic objectives within the legal field), ethical (not necessarily enshrined in law and not directly subordinate to the economic interests of the company) and the highest level –

philanthropic (in recent versions – discretionary) responsibility. Fundamentally important is the hierarchy of levels, which is reflected in the fact that each successive level provides for compliance with all conditions and requirements of the previous level. For example, business ethics – is not a business that "in one way or another engaged in charity, that's a business, which standard transactions satisfy not only economic and legal, but also ethical criteria" (Blagov, 2004, p. 20).

However, some researchers point to the fact that "Carroll is striving for universality with his model, but it has not been properly tested in contexts outside of America and suggest that "different culture sand sub-cultures not only give different nuances to the meaning of each component, but may also assign different relative importance" (Visser, 2012, p. 47). Researchers agree about the discrepancy pyramid of the A. Carroll priorities for the practices in Europe and Africa. Analysis of Ukrainian business practice confirmed the existence of national differences in the structure and content of CSR in different countries (Tab. 1). Naturally, for each of these types of liability there is some connection with the business activities of the company.

Table 1. Priorities for social responsibility in the regions of the world

| Region | Priorities | Priorities Duty |
|---|---|---|
| USA | 1. Economic | secure profitability and high shareholder value, which is the foundation for everything else; produce products and services that society demands, and sell them at a profit (responsibility to shareholders) |
| | 2. Legal | business is guided by social norms of good and evil; follows the established rules |
| | 3. Ethical | be ethical; do what is right, fair, and honest; avoid causing any damage |
| | 4. Discretionary (philanthropic) | beyond the expectations of society and is carried at its discretion, by their own decision; voluntary participation in social programs |
| Europe | 1. Legal | comply with the rules (defining the role of government / state; wide legislative regulation) |
| | 2. Economic | traditionally is determined by the interests of a wide range of stakeholders, including shareholders, employees, local communities |
| | 3. Ethics | *(not relevant due to the nature of business culture and attitudes in society)* |
| | 4. Philanthropic | *(not actually provided by national law)* |
| Africa | 1. Economic | secure investment, create jobs and pay taxes |
| | 2. Philanthropic | allocate funds for corporate social / public projects |
| | 3. Legal | to ensure good relations with the state bureaucratic system |
| | 4. Ethical | adopt voluntary codes of governance and ethics |
| Ukraine | 1. Economic | profitability of software |
| | 2. Legal | implementation of legal obligations to the state and society (payment of taxes, health and safety, workers' rights, consumer rights, environmental standards) and industry standards |
| | 3. Ethical | be ethical; do what is right, fair, and honest; avoid causing any damage |
| | 4. Discretionary | enhance the positive impact of business on society and create value through innovation, investment and partnership, aimed at social and environmental well-being |

Source: own work.

Shown hierarchy of priorities in practice is reflected thru the choice of enterprises of different corporate social responsibility strategies, the formation of certain public expectations and numerous attempts of scientists to research and compile them. Not all concepts of social responsibility (ethical, value-based approach with regard to social requirements approach based on political influence) were relevant and were developed in Ukraine. However, it is important the research of level and content of the social responsibility of local business.

For example, T.N. Savina shows CSR classification of following levels:

1. Formal (profit through activities within the law).
2. Hidden (includes values, norms and rules leading to mandatory requirements).
3. Voluntary-compulsory informal (business involves the diversion of resources to the authorities initiated infrastructure and social programs).
4. Open (choice of the behavior strategy that involves an entity in which he assumes responsibility for the resolution of issues of interest to the public).
5. Informal (out of the civil and ethical positions voluntarily entrepreneurship and business use of resources for social programs in the form of charity, philanthropy, sponsorship) (Savina, 2012, p. 7).

For structuring of social responsibility it was taken the combination of two attributes – communication with the laws and motive response to the society demands as a basis. Not clearly it was set the boundary between the first two levels: activity "within the law" provides, in particular, implementation of the "mandatory requirements". The third level is different from these, first of all, by the motivation to "resources diversion".

O.V. Doudkin determinates similar criteria for "levels of social responsibility" (Dudkin, 2011, pp. 65-67). He identifies three levels of "deepening the organization as socially responsible processes" depending on motivation and communication activities of social responsibility with economic results of the company researcher:

1. Base which is the basis for the further formation of socially responsible behavior. At this stage, the main principle of the company is the full implementation of all obligations under the requirements of the law – real social responsibility is absent.
2. The top priority is conducting of CSR activities that positively affect the economic results of the company.
3. It provides measures, economic benefit from which is not obvious, unlike the public, (e.g., maintenance of historical monuments, cultural and sporting events) – it concerns mainly the external aspects of the activity.

The proposed structure also is a combination of two attributes – communication of the legislation and compliance of shareholders' interests. The latest sign should be considered separately, because it is the best suited effect of the enterprise substance.

S.V. Bratyuschenko takes as base the "overall social responsibility of a company which is determined by four criteria: economic, legal, ethical and business taken responsibility (improving social welfare and quality of life)". Of interest are the types of actions dedicated by researcher enterprises and their hierarchy, namely: social obstruction, social obligations, social response and social contribution (Bratyuschenko, 2005, p. 171). As "social obstruction" virtually characterized by the absence of any action to address social problems and environmental problems, "rejection of all obligations" and "unfair actions", the level of classification T.N. Savina not include even preformal social responsibility. The next level – "social obligations" implies action organization focused only on what is required by law, and nothing more, the ideology of the company is to

obtain profits. Tactics of such enterprises equals the formal (T.N. Savina) or base (O.V. Doudkin) level of social responsibility. "Social Review" implies that the company does not only economic, legal and ethical requirements but also take a part in voluntary social programs, while not revealing its own initiative in search of opportunities. In other words, we observe voluntary-compulsory informal social responsibility (T.N. Savina).The company whose actions S.V. Bratyuschenko refers to a type of "social contribution", consider itself a responsible member of society and takes the initiative in finding opportunities to society contribution, and refers to the open level of social responsibility in T.N. Savina.

According to the analysis of foreign and domestic publications and the diversity of scientifically based and practically tested approaches of corporate social responsibility it can lead to four alternative options:

1. Selfish approach, out of the axioms of "has no place ethics in business", and the maximum profit is the sole responsibility of the business (prerogative belongs interests of business owners, the purpose of maximizing profits associated with, clear separation from any social obligations commitments).
2. Formal approach, any action that is not beyond the current legislation is a socially responsible that identified with a legal-activity on the principles of law-abiding citizens.
3. A pragmatic approach: allow activities aimed at meeting the economic needs of stakeholders beyond the legal requirements on the basis of compliance with the economic interests of businesses – strategic business management for the principle of social responsibility.
4. Altruistic approach: "economic activity takes into account the interests of related parties; focused on the requirement of stakeholders interest" and involves the use of business resources to charitable activity – activity on ethical principles.

We consider it is not necessary to stress that the approach lists of social responsibility can be taken as a hierarchical structure and do not try to turn it into a pyramid. Selfish approach is not able to produce something like a social responsibility. In case of unconscious formal approach it may create public value. However, as has been proven above, a company cannot be considered as a corporate citizen, to its management and staff is not a task to be "socially responsible". However, formal approach not object social responsibility of the company, but it is the foundation for the transition a pragmatic or altruistic approach. Cooperation of altruistic and pragmatic approaches must be considered characteristic of the priorities and types of social responsibility.

Altruistic approach (e.g., one-time or recurring charity), as opposed to philanthropic responsibilities in the pyramid of A. Carroll, in practice is not evidence of its full-scale legal, economic or moral responsibility. However, it is a manifestation of discretionary responsibility, which by definition of R. Dafta "purely voluntary and is guided by a company's desire to make social contributions not mandated by economics, law, or ethics. Discretionary activities include generous philanthropic contributions that offer no pay back to the company and are not expected. (…) Discretionary responsibility is the highest criterion of social responsibility because it goes beyond societal expectations to contribute to the community's welfare" (Dafta, 2009, p. 143). By definition this responsibility goes beyond the economic requirements, the question is of the motivation economic expediency legality.

On the other hand, the pragmatic approach involves the legal requirements (legal liability) and compliance with business ethics in relations with business partners, competitors and consumers (moral responsibility), as well as ensuring profitability (economic responsibility). Thus, in international practice economic company responsibility means that they "cannot receive excessive

profits at the expense of other companies and the public" (Olajumoke, 2001). Today actually is a link between economic and ethical responsibility: "the economic responsibilities refer to society's expectation that organizations will produce goods and services that are needed and desired by customer sand sell those goods and services at a reasonable price" (Milovanović, Barac, Andjelković, 2009, p. 91).

The pragmatic approach fully meet the conditions for the use of "economic approach" that has a need to choose with limited resources, and behavior marginal analysis of costs and benefits.

As a result, an attempt to integrate altruistic and pragmatic approaches are not correct. They are incompatible because of the economic priorities of business activities. The essential difference between altruistic and pragmatic approach is the need to resolve purely practical problems – integrating social responsibility in the tactics and strategy of the main activity of the company.

## 4. Conclusion

The research confirmed that as managers, as other stakeholders (contractors, managers, staff, government and non-governmental organizations, government officials, etc.), has not a clear idea of social responsibility and differently interpreted it as components of CSR and as an essence of such activity. It is equally important that indicated in any case hinders mutual understanding between different aspects of social and economic relations and as a result, the problem of identification and evaluation of business on its social responsibility.

Dedicated by experts key aspects consider for the identification of socially responsible business. That is the main features of the modern civilized business, that should be considered by a business process management, which aims a profit on the basis of which provide an overall positive impact on society. We can assume that the commitment of businesses to the public interest in the short term will bring a substantial increase in profits. On the contrary, "noting how the profits made", he will definitely give up their economic interests.

Made by scientific community theoretical concepts are a reaction to the changing attitudes of business (weakening purely defensive reactions, more attention is paid to the methods of management of social reaction) and society to social responsibility and the need to transition from a philosophical and ethical concept of corporate social responsibility (duty corporations work to improve of society) to the effect-oriented management concept of corporate social sensitivity (liability corporation taken in response to social pressure) (William, 1994, p. 150).

Spend study suggests that the pragmatic approach is combining economic, legal and discretionary responsibility.

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Chapter 10

# The European Union Climate Policy as an Enterprise Development Determinant

*Jadwiga Adamczyk*

## 1. Introduction

The global character of ecological hazards as well as the need for solidarity in action were highlighted by rising environmental protection issues at the UN forum. In 1992 at the "Earth Summit" in Rio de Janeiro, among other things, the UN Framework Convention on Climate Change was accepted by delegations from almost 180 countries. The most important event related to limitation of greenhouse gases emissions was the Kyoto Protocol adopted during the third UN Conference in 1997. The Kyoto Protocol to the United Nations Framework Convention on Climate Change commits industrialized countries to reduce greenhouse gases emissions. This Protocol was entered into force in 2005, and commited the countries of higher national income to reduce carbon dioxide ($CO_2$) emissions at least by 5% of the 1990 levels. This obligates the signatories to make every effort to reduce greenhouse gases emissions, while enabling costs to be partially compensated by using new mechanisms of selling and purchasing the rights to accumulated excess emission allowances.

Participation in international agreements was the basis for establishing EU sustainable development policy and programmes. When the EU joined the Kyoto Protocol parties, the European Climate Change Programme (ECCP) was published in 2000. The European Union is the third biggest emitter of $CO_2$ (behind China and USA), but is a leader in emissions reduction policy. Both China and USA are not interested in further reduction of $CO_2$ emissions, thus causing a possible loss of competiveness, for Polish enterprises too.

## 2. Climatic challenges in the EU policy

The main environmental objectives set out in the original EU law is to provide a high level of support for environmental protection and sustainable development. Under Article 2 of the Treaty establishing the European Economic Community the first general aim is to contribute in improving environmental protection and the environment itself. Specific aims and objec-

tives are specified in Article 174 of this Treaty, where the EC environmental policy is aimed to achieve such objectives as (Kenig-Witkowska, 2005, p. 54):

- preserving, protecting and improving the quality of the environment,
- protecting human health,
- prudent and rational utilization of natural resources,
- promoting measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change.

The first of specific objectives of the EU environmental policy indicates that decisions and actions undertaken by specified entities should lead at first place to avoid or prevent any environment nuisances that often cause irreversible environmental impacts, and to take remedial actions to remove harmful effects of some previous activities that can exceed simple nature restoration to its original state (Lisowska, 2005, p. 120).

The second specific environmental protection objective of the European Community is human health protection requiring an individual approach to this problem. The EU priority goal is to be human health protection, while respecting the human being as an individual, and the care of any conditions affecting human health, while treating social interest as a secondary one and considered as a sum of individual interests (Grabowska, 2001, pp. 175-176).

The third objective, prudent and rational utilization of natural resources, relates to the problem of natural resource depletion and degradation. Prudent and rational use of natural resources should lead at first place to:

- the use of renewable resources to the extent not exceeding its regenerative capabilities,
- introducing non-renewable raw materials to lesser extent than renewable raw material regenerative capabilities,
- such emission levels of harmful substances that should not exceed the natural absorption capacity for environment nuisance substances (Adamczyk, 2010, pp. 84-87).

Any activity undertaken by entities should lead to increased production at as minimal resource consumption and environmental interference as possible.

The objectives included into the Treaty refer also to the support of activities at international level related to solving environmental problems. Environmental policy of the European Union contributes in developing a consistent model of environmental management in the Member States and adoption of common environmental protection standards. The objectives of the EU environmental policy can be divided into: general objectives, objectives related to rational use of natural resources, and objectives related to environmental quality.

The general objective is to ensure ecological security within the Commonwealth area, i.e. security of its inhabitants, social infrastructure and natural resources and nature reserves. As a result each Member State achieves its ecological security goals based on documents that define and develop these objectives.

Regarding rational use of natural resources the objectives cover several areas: rationalization of water consumption, decrease in production material consumption and waste generation, decrease in energy consumption and increase in the use of renewable energy resources, soil protection and preservation of its resources, rational use of forest resources and protection of fossil resources.

The objectives related to environmental quality apply to evaluation of the degree of cleanliness for particular environmental segments especially susceptible to contamination, e.g. waste, water quality, air quality, noise, chemical and biological security, extra hazards as well as biological and landscape diversity.

All objectives of the EU ecological policy are included into programmes. The Sixth Environment Action Programme of the European Community – Environment 2010: Our Future, Our Choice (p. 66) specifies the following four priority areas:

- climate change,
- nature and biodiversity,
- environment and health,
- natural resources and waste.

The objective in the area of climate change is to reduce greenhouse gases to a level that will not cause unnatural variations of the earth's climate. These activities could contribute in long term reduction of greenhouse emissions by 30% by 2030 through structural changes in the transport and power engineering sectors and developing an all-Europe emissions trading system.

## 3. The essence of emissions trading

Emissions trading is one of ecological policy instruments used most frequently used for reducing pollutant emissions. Commonly recognized as one of more market-oriented instruments of environmental protection. Emissions trading consists in defining an overall cumulative emissions limit for a large emitter groups according to air pollutants. Then, according to a specified algorithm the total acceptable pollutant emissions are allocated among all emission sources covered by the system by issuing them an appropriate number of permits which confer entitlements to emit pollutants. Permit holders are then free to buy and sell their allowances in the marketplace among participating parties. It is important that at the end of compliance period each of pollutant sources have the number of permits not less than amount of pollutants emitted by it. Each ton of emissions above the permits imposes strong penalties. Such mechanism ensures that the total amount of pollutant emissions from the participating sources does not exceed the settled-upon cumulative limits.

The chief point of the emissions trading concept is establish administratively an admissible amount of emissions of selected pollutants for a specified area or economic sector, for example the electric power industry. This amount is converted into many individual permits to pollute. The admissible emission level should correspond to emission restrictions resulting from the law provisions or target values adopted in the state environmental policy. Individual permits are allocated among participating business entities according to established rules. Some of entities are gained such large number of permits that exceed both the present and expected pollutant emissions, thus indicating that they have a number of unused entitlements to emit pollutants. This creates the market of saleable emission allowances. Within the specified time all participating enterprises have to report to the environmental protection administration the number of possessed permits vs. actual amount of pollutant discharge.

## 4. The EU emissions trading system

Based on innovative mechanisms specified in the Kyoto Protocol such as *Joint Implementation* (JI), *Clean Development Mechanism* (CDM) and international emissions trading, the European Union developed the first international emissions trading system at the enterprise level.

The UE system of greenhouse gas emission saleable allowances within the Community was established by the directive 2003/87/EC of 13 October 2003. The directive obliges each Member State to establish National Allocation Plans anticipating the overall limits of emissions subjected to allowances to be allocated within particular compliance periods. Then, National Allocation Plans for emission allowance must be adopted by the Commission, and each entity have to settle the granted allowances annually.

During the first compliance period in the years 2005-2007, the system comprised carbon dioxide emissions from the power and heating plants of high emissions levels and other energy-consuming industries such as incinerating plants, petroleum refineries, coke ovens, steel and ironworks as well as cement mills, brickyards, glass-works, plants manufacturing lime, ceramics, pulp and paper (Ordinance by the Minister of Environment dated 30 September 2005 – Dz. U. No. 199, item 1645, 1646). The factors deciding on incorporating a given enterprise into the sectors mentioned above are its production volume and productivity.

During the second compliance period in the years 2008-2012 the EU entitlement trading system will be extended to include sulphur dioxide and other greenhouse gases. One allowance entitles to emit 1 ton of carbon dioxide (Błachowicz et al., 2003). This requires that Member States have to establish national permit allocation plans for each trading period indicating the number of emission allowances individually for each facility. The allocation decisions are announced publicly. The limit called also "restriction" of total number of distributed allowances creates some necessary shortage for trading. The third compliance period includes the years 2015-2030.

The EU emissions trading system is a tool for achieving the target and commitments contained in the Kyoto Protocol for 25 Member States. Fifteen EU Member States before expanding undertook to reduce total greenhouse gas emissions by 8% compared with 1990 levels before the end of the first commitment period set in the Kyoto Protocol. The total reduction target was divided and allocated to each Member State under "Burden sharing" agreement (Council Decision 2002/358/EC). Most of ten new Member States have their own reduction targets contained in the Protocol at 6% or 8%. These countries fully participate in the EU emissions trading system after accepting entitlement allocation limits by the European Commission.

## 5. Basic rules and significance of greenhouse gas emission allowance trading scheme

The establishing of the EU emissions trading scheme is based on the assumption that the allowance market is the most economically efficient and cost-effective way for the Member States to fulfil their commitments under the Kyoto Protocol and the beginning of a low carbon dioxide emission economy.

Directive 203/87/EC makes the carbon dioxide emission permit a sellable article of specified value and subject to market rules.

The scheme is based on the following rules (Adamczyk, 2009, pp. 170-172):

- limitation – *cap-and-trade*: the limit or *cap* on the total number of emission allowances is set out for a group of plants and/or sectors and then emission allowances corresponding to the limit are allocated between these plants – pollutant emitters. The plants may use their entitlements to fulfil their reduction targets, sell them or keep for future commitment periods;
- initially addressed mainly to big pollutant emitters;

- the system is being implemented gradually in connection with periodic assessment and the possibility of expanding to cover other gases and sectors;
- emission allowance allocation plans are developed and approved periodically;
- currently covers the EU only, but enables other countries to be incorporated by using such flexible mechanisms as Joined Implementation (JI) and Clean Development Mechanism (CDM).

The main advantages of emission trading include:

- emissions reduction: the emission limitation is carried out in absolute values according to the total limit (cap);
- social advantages: emissions reductions are achieved at lower cost compared to other instruments;
- new technologies: competitiveness in the emission allowance market leads to development and use of new technologies;
- low administrative costs: the emissions trading systems require less administration personnel compared to direct regulations.

Participation of an enterprise in the EU emissions trading system should have an impact on the way of enterprise function for at least three reasons. Firstly, due to their emissions monitoring and reporting obligations the enterprises will be forced to establish budgets and implement an emissions management system. Secondly, due to the market value of the carbon dioxide emission permits the enterprises use the knowledge and ideas of their employees to establish economically effective methods of emissions reduction both through improving current production and investing in new technologies. Thirdly, apart from the necessity of new technologies the implementation of emissions trading scheme causes the need for a number of other services. The participating enterprises require widely-understood advice and consulting services.

The enterprises that keep their emissions below the assigned limit may sell an allowance surplus at a price determined by supply and demand at a given time. The enterprises that have difficulty in keeping emissions within the gained allowance may a choice between several alternatives. They may take steps to reduce their emissions (for example, to invest in more effective technologies or use energy sources of lower carbon dioxide emissions), or may purchase additional allowances or earn CDM/JI, or may combine these two solutions. Such flexibility allows emissions reduction in the most profitable way.

So far most allowances were granted for free (approx. 95% during the first phase and about 90% in the second phase). Although limits are granted to enterprises participating in the EU emissions trading system, everybody (physical persons, institutions, non-governmental organisations and other entities) is entitled to purchase and sell in the market as companies. The EU emissions trading system may be potentially extended to include various economic sectors and many greenhouse gases, but at present is focused on those emissions that can be measured accurately, reported and verified (European Commission, 2008).

Installations and plants that not have enough number of allowances, i.e. covering emission level, will have to pay for each tonne of carbon dioxide exceeding the limit. During the first commitment period the fine was €40 per excess tonne, but will be increased to €100 per tonne during the second period.

Each enterprise holding emission allowances has to open an account at the special national registry. Allowances will be purchased and sold by using these accounts available through Internet. Emission allowance will be issued in electronic form only. Transaction processing is moni-

tored continuously by the relevant national administrator responsible mainly for the maintenance of the national emissions trading registry, containing information on all granted allowances, allowable and actual emissions and transactions.

## 6. Share of carbon dioxide emission allowances in Poland within the EU emissions trading system

The greenhouse gas emissions trading system has been functioning within the EU since 1 January 2005. In Poland this system was launched in principle in 2006 by publishing a special governmental ordinance (Jankowski, 2006). Its legal basis is Directive 2003/87/EC transposed into the national law by passing of the act on greenhouse gas and other substances emissions trading. Whereas, the Kyoto Protocol provisions related to trading of ERU (Emission Reduction Units) and AAU (Assigned Amount Units) begun on 1 January 2008 (http://www.biomasa.org/edukacja/zmianyklimatyczne/handel_uprawnieniami).

The EU emissions trading system involves above 12,000 installations responsible for about 45% of total carbon dioxide emissions in the EU or approx. 30% of the global total greenhouse gas emissions. In Poland there are 1,088 enterprises entitled to get emission limits, mainly power plants, power heating plants, heating plants, steelworks, cement plants, lime in pulp and paper mills.

Emissions allowances are granted to individual enterprises base on the national allocation plans[1]. During the first period of carbon dioxide emission allowance trading (2005-2007) the total number of $CO_2$ emissions allowances granted to Poland was 717,300 thousand tonnes, while the number of allowance granted annually was 237,918 thousand tonnes (Regulation of the Council of Ministers of 27 December 2005 – Dz. U. 2005, No. 264, item 2206). During the period 2008-2012 Poland was granted from the European Commission granted an annual $CO_2$ emission allowance at amount of 208,500 thousand tonnes, i.e. 26.7% less than the quota proposed by Poland in the project (http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/412&format=PDF&aged=0&language=PL&guiLanguage=en). In January 2008 the annual emission limit for Poland was set by the European Commission at 208.5 million tonnes that was allocated between various sectors. In subsequent decisions of the European Commission this limit was lowered.

A climate and energy package accepted by the EU in 2014 forecasts the following targets:

1. Carbon dioxide reduction by 30% by 2030.
2. Share of renewable energy up to 27% in 2030.
3. Increase in energy efficiency by 27%. The construction of specific interconnectors at 10% level, that is each country should have connectors with other countries at 10% capacity level.

Decreasing $CO_2$ emissions by 30% in the EU by 2030 and reduction by 20% by 2020 compared with 2005 is a challenge for enterprises. The treaty predicts that the number of $CO_2$ emission allowances for industries, power engineering and aviation will be decreased annually by 2% by 2021. Concurrently the following credits are foreseen:

- all countries o GNP lower than 60% of the EU average can share their assigned quota: 2% of all allowance from ETS. Money gained in such a way (approx. PLN 7.5 billion) must be earmarked to be spent for investing in energy modernisation;

[1] The number of allowances grated by the National Allocation Plan of Allowances is divided into: allowances to be distributed, reserves for joint implementation, national reserve for new installations, and allowances designed for auctions (e.g. Pocheć, 2007).

- 10-percentage "solidarity fund" of all allowances for countries of GNP below 90% of the EU average;
- Poland will be gained free allowance for power engineering (40% of all $CO_2$ emission allowances for the power industry).

Initially, emission allowances were granted for free, but in the future a possibility of paid allowances are predicted. Also, annual limits are lowered, as a consequence of the EU policy for reducing greenhouse gas emissions. The enterprises that exceed their $CO_2$ emission limits must purchase emission rights or use the right to loan allowances for future years.

## 7. Organisational enterprise behaviour in the pollution emission market

In the years 2013-2020 the enterprises in Poland will be granted by approx. 12% $CO_2$ emission allowances. The limit for Poland was determined on the basis of benchmarking, where Polish enterprises were compared to the best companies in the EU. Such decision puts energy – intensive enterprises in worse situation. Some economic problems may occur beyond 2016, as the granted limits may affect competiveness of products made in Poland.

Emissions trading enable the following enterprise behaviour forms:

- cap and trade strategy: the maximum pollutant emission level is shared between a group of plants so that they can jointly choose the most cost-effective emission reduction;
- compensation strategy: plants requiring expansion of its activity can perform reduction investment in other plants;
- emission reduction strategy: plants of emissions below the established threshold can be granted reduction credits and then provide them other plants of emissions above the threshold;
- hybrid strategy: the total emission limit is set out for a group of plants or sectors and the emission allowances corresponding to this limit are distributed among these plants • pollutant emitters. The plants may use the allowance to fulfil their reduction targets, or sell them or keep for future commencement periods (Błachowicz et al., 2003).

The greenhouse gas emission allowance trading system imposes new obligation and requirements, both formal and legal, that increase operation costs. These enterprises must gain permits and then make measurements of pollutant emissions, open an account in the allowance monitoring registry. In addition, the enterprises are obliged to implement structures and processes enabling management of the granted allowances and participation in purchase sell transactions. The enterprises must learn $CO_2$ emission management so that the amount of emitted carbon dioxide does not exceed the granted limits. Initially, at the beginning of the implementation of emissions trading system the enterprises will bear administrative costs related to the employing specialists and organising new structures. If an enterprise lowers its emission level at lower cost that the market price of allowances, it could invest in modernisation of the existing $CO_2$ emitting entity, thus contributing in emission reduction. As a result an allowance excess is created that can be sold. Except for the requirements mentioned above the enterprises entitled to trade emissions must establish their market strategy. Each enterprise that is given a $CO_2$ emission allowance is obliged to prepare a report settling the assigned limits.

Enterprises are free to select a strategy leading to keeping emissions at required level. The emission allowance management strategy in an enterprise is chosen based on the existing

allowance excess or deficit and the price of allowances, and final cost of emission reduction. Enterprises should establish their action strategies when being faced with new challenges, but this should be preceded by a thorough analysis of enterprise development prognostics as well as their chances and hazards in the emission market. More stringent regulations related to air protection and more and more competitive environment force the enterprises to investments targeted at air pollution reduction. Especially, pro-ecological activities undertaken to modernise a $CO_2$ emitting installation are of utmost importance to enterprise's image and competitive power. The emissions trading system on one hand protects the environment by imposing limits on air carbon dioxide emissions, but on the other hand allow enterprises to decide on further actions at allowance excess or deficit. The enterprises have to implement modern and more environmentally friendly technologies reducing carbon dioxide emission more intensively, as the number of allowances is to be systematically lowered by 2030.

## 8. Conclusion

For participants in $CO_2$ emissions trading the demand for allowances becomes a determinant that should be taken into account when making strategic and operating decisions related to an enterprise as a whole. The cost of $CO_2$ emission within SHE is a factor deciding on enterprise's competiveness. For the power industry $CO_2$ emission is one of factors Hving direct impact on financial result. Therefore, the amount of emissions is important in operating activity. Simultaneously, the $CO_2$ emission data should be taken into account when making strategic decisions, for example pertaining current and forecast emissions from an installation, number of possessed, used and necessary allowances. Such information is necessary to decide on behaviour in the allowance market as a purchaser or seller of EUA. The $CO_2$ emission per products or manufacturing process should be used in a long-term cost management.

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Chapter 11

# The Impact of European Emissions Trading System on the Enterprises Operating in Poland[1]

*Piotr Litwa*

## 1. Introduction

The European Union Emissions Trading Scheme (EU ETS) is the core of the EU environmental policy, it is one of several instruments for the implementation of the environmental policy objectives. In contrast to the remaining groups of instruments – legal ones (norms and standards, among others) and economic ones (taxes and charges) – emissions trading belongs to the group of so-called market instruments. It is commonly recognized as one of most market-oriented environmental protection instruments. Most frequently, it serves the reduction of emissions of pollutants. Its practical implementation in Poland constitutes the implementation of the provisions of the 1997 Kyoto Protocol and the obligations arising from the membership in the European Union.

The system implies a number of substantial consequences for the economic reality. A lot of authors who address these issues express their concern that it may have numerous negative effects, which can include a rise of unemployment, a decline in GDP, or so-called carbon leakage (namely, an escape of energy consuming industries, such as: cement factories or foundries, outside the EU in search for emission Eldorado where production is cheaper and there are no ecological restrictions, e.g. to China or Ukraine). In the case of Poland the issue is even more important due to the coal structure of electricity generation, as well as a relatively high share of industry in the GDP structure.

## 2. The background of the implementation of the European Union Emissions Trading Scheme

The origin of implementing the emissions trading scheme is related to the arrangements of the Kyoto Protocol which is a legally binding agreement under which the industrial countries of the world were committed to reduce greenhouse gases emissions in the years 2008-2012 by 5.2%

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in comparison with the year 1990. By signing the protocol, the EU member-states (in the number of 15 at that time) committed to joint emissions reductions by 8% in the years 2008-2012. On the other hand, the United States, which are responsible for about 35% of the world emissions, did not ratify the Protocol. To a great extent, the fact made the EU take over the leadership in respect of shaping the global environmental policy.

The European Union Emissions Trading Scheme was introduced in phases. The first phase (the years 2005-2007), called the testing or the pilot phase, is a period aiming at "learning by doing" during which emissions limits for individual trading entities were granted free of charge by individual states based on historical emissions (i.e. with the method of so-called grandfathering). At the beginning, allowances were granted to the operators of 10,559 installations emitting harmful gases (EEA Report, 7/2010, p. 17). The member states allocated allowances for emissions of 2298.5 million Mg carbon dioxide, out of which almost 95% of the limit was free of charge.

The system included enterprises characterized by a high level of emissions and energy-consumption, such as: power stations, iron and steel foundries, glass works, oil refineries, coking plants, incinerators, cement factories, plants manufacturing lime, ceramics and paper.

In the discussed period, we can also observe the bloom of infrastructure necessary to monitor and verify actual and real volumes of emissions in individual enterprises which have installations included in the scheme. What is symptomatic is that the first period did not contribute to the achievement of measurable effects in the reduction of emissions due to the fact that a significant majority of the states participating in the scheme were allocated too many allowances (Ellerman, Buchner, 2007, pp. 66-87). When the real volume of emissions in 2005 and 2006 turned out to be much lower than the corresponding allocated number of allowances, the prices dropped next to zero. That was a period which considerably contributed to further changes and the development of the scheme, which in effect led to the formation of allowance trading platforms. The trading takes place with the use of various instruments (spot, forward, futures contracts, options, Certifications of Emissions Reduction and Emissions Reduction Units), as well as through and with the participation of various entities (among others, stock exchange – Powernext, Nordpool, European Energy Exchange, investment banks or companies isolated from corporations conducting activities in the fuel and energy sector) (Czarnecki, 2007, p. 16).

The second stage of introducing emissions trading scheme (the years 2008-2012) was the first period during which the states had to fulfill their commitments agreed and set forth in the Kyoto Protocol and arising from the burden sharing agreement. From the pool falling to each state, 90% of the allowances were allocated free of charge.

The European Commission, which kept in mind the experiences of the first commitment period, in 2008 introduced stricter emissions limitations for individual countries than before. In consequence, it was supposed to lead to a relatively possible stabilization of the prices of these allowances. In that period, analogously to the previous one, the operators of installations were allocated allowances based on national plans of their division.

In the second phase, in all EU states the allowances for the total amount of 2,079 million Mg of annual emissions were allocated. It should be emphasized that the amount was lower than the threshold adopted in the schedule, which was caused by the global economic crisis which brought about a decrease in industrial manufacturing, and, what follows, spontaneous emissions reduction (Baran, Janik, Ryszko, 2011, p. 184).

The third period began in 2013 and is expected to last until 2020. It is the last stage whose objective is to prepare the market for totally free trading of allowances for $CO_2$ emissions. Along-

side the third period, annually allocated free allowances for the states participating in the scheme have been significantly reduced. What is more, the limitation of these emissions is to be annually reduced by 1.74% in the whole European Union. Its goal is complete departure from free allocation of allowances to the benefit of the auction system (http://ecomanager.pl/handel-emisjami-w-iii-okresie-rozliczeniowym). However, the third period is mainly a challenge for the states with regard to the adoption of an adequate strategy because the period can be used as time for cumulating or selling out the units. It is rather hampered since the European Commission policy in that respect is still unclear after all. As yet, the falling prices of allowances appear to be an insurmountable problem. Therefore, the policy of each of the states has to consider a decline of allowances allocated for free, the lack of a coherent vision of the scheme development, as well as the spectre of the loss of value by the units.

The development of the European Union emissions trading scheme after 2020 depends on the adoption of an international agreement including emissions reductions in the global scale. The Directive states that by 2050 the global greenhouse gases emissions should be reduced by at least 50% below their 1990 levels.

## 3. The essence of the emissions allowances trading concept

Transferable emission allowances are a relatively new instrument for regulating emissions levels (as well as the degree of the reduction of emissions). The idea of that solution in the initial form consisted in resignation from the environment quality control by means of the system of norms and standards established for emitters. Instead, the Agency responsible for the control of the environment would set an acceptable or tolerated pollution load and the number of permits equivalent to their emissions, and then launch them on the market, distributing them for free or selling to emitters of pollutants.

The key element of the concept is permission for emitters to sell and buy permits on the secondary market created for this purpose. The supply of permits is created by the owners who may not use the right to emit a specific amount of pollution but resell this right to another entity. Permits can be then sold and bought on the emissions rights market. The motive for concluding transactions is to achieve benefits by their participants, which boil down to choosing the cheapest way of adopting to the requirements of the regulations concerning the quality of the environment.

Emitters with lower costs of emissions reduction can decrease the emissions below the limit determined for them and sell unused allowances to other polluters (with higher reduction costs). For them, in turn, the purchase of additional allowances is more beneficial than the reduction of emission levels. The trade will take place until the differences in marginal costs of emissions reduction disappear. Then, the allowances market will reach balance with the price equal to the marginal cost for all emissions sources. In this way, the emissions trading will automatically fulfill the condition of the minimization of social costs of achieving specified levels of the quality of the environment. The assumed emissions reduction will be carried out by those emitters which can achieve it at the lowest cost.

The pollutant emissions allowances market has great chances to result in the substantial drop in the environmental protection costs at the social scale, particularly in comparison with the administrative regulation system (be means of emissions standards). Transferable emissions rights would be used where they are cheaper than otherwise required emissions reduction devices. And

the opposite, they would not be used where the emissions drop requires smaller expenditure than the purchase of adequate emission rights. It means that any level of the environment load assumed acceptable would be achieved in this scheme at the minimum social cost.

## 4. The impact of the European Union Emissions Trading Scheme on the financial situation of enterprises

The impact of the European Union Emissions Trading Scheme on the functioning of enterprises is now a subject of heated discussions both in scientific, as well as political and economic circles. It is an object of numerous research which indicates both positive and negative aspects of the scheme. The majority of experts who address the discussed issues point out to the fact that the lacking allowances will be an additional cost for enterprises, moreover, the emissions trading influences an increase in the costs of energy, being one of the key factors for the shaping of competitiveness.

In the literature on the subject, within the framework of so-called environmental finance, three major hypotheses of the impact of environmental regulations on the functioning of enterprises have been formulated:

1. Porter hypothesis.
2. Factor endowment hypothesis.
3. Pollution haven hypothesis.

According to Porter hypothesis – properly planned and implemented environmental policy contributes to an increase in the competitiveness and productivity of enterprises, creating a stimulus to use state-of-the-art technologies (Porter, Linde, 1995, p. 24). Thus, regulations in this area have a positive effect on the enterprise performance, but an argument is often used that in the situation when the costs of fulfilling the regulation are high and the significance of innovation in a given sector is insignificant, negative effects may appear.

On the other hand, the *factor endowment hypothesis* stresses the significance of natural resources which increase production capabilities. The hypothesis includes an assumption that enterprises are prone to accept more rigorous regulations in return for the benefits coming from input factors (natural resources). Such a situation is maintained as long as the benefits of equipment outdo the regulation costs (Copeland, Taylor, 2004, p. 18). The hypothesis provides for the occurrence of both a positive and a negative relation between the regulations and investment decisions and corporate value.

The third hypothesis, so-called pollution haven hypothesis, assumes that enterprises (particularly the ones characterized by high emissiveness) will apply so-called carbon leakage, namely they will bring about the migration of their operations to the countries or areas with low environmental requirements to avoid high costs related to it. As a result of such reasoning, an adverse impact of the regulations on investment, particularly direct investment, is expected.

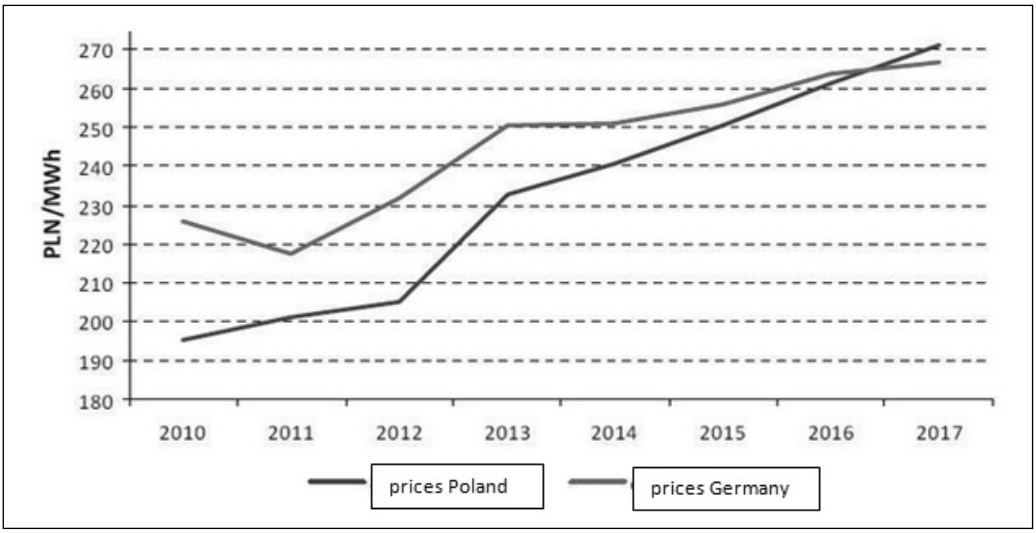
Within the framework of the conducted research, no univocal answers were obtained on which of the hypotheses is true. When analyzing various research conducted in the countries of so-called old European Union, we can find out that within a short period of time, particularly in the first phase of EU ETS, in majority of enterprises a positive correlation between an increase in the price of allowances and the corporate value occurred, which would support Porter hypothesis. However, in the long run, a negative correlation occurred in this respect.

On the other hand, following the *factor endowment hypothesis*, in the first period there was a free (grandfathering) rise in the quality of natural resources as a result of pro-ecological investments (made by other enterprises) which were motivated by an increase in the allowance prices. In the second period, a negative relation can be explained with the fact that using natural resources had to be already partially paid for, and moreover, the relation of the change in the value of natural resources and EUA prices started to worsen (changes in the prices of natural resources did not follow the changes in the EUA prices) (Witkowski, 2013, pp. 546-548).

When analyzing the discussed issue from the perspective of the pollution haven hypothesis, we can discover that in the initial period stock market investors, while expecting from enterprises to take advantage of growing EUA prices as a pretext to relocate their activities to countries where no costs like that exist and the costs of, for example, employment are lower, discounted potential growth of the profitability of companies, and, what follows, their valuation rose. In the longer run, the market "got used" to the mentioned process, moreover, a lot of countries have introduced protective mechanisms against carbon leakage, thus, the potential of that factor has run out (Rogge, Schneider, Hoffmann, 2011, p. 64).

In the Polish conditions, most of experts focus on studying the impact of EU ETS on the growth of operating costs. In particular, the influence of these regulations on the shaping of the costs of energy, being one of the most significant cost-driving elements, is extremely important in this aspect. The factor is even more important because most of forecasts indicate an increase in energy consumption in Poland in the years 2010 to 2030 by almost 30%. The concerns in this respect are strengthened by the fact that the production of electricity in Poland is based to a great extent on coal, which is costly in itself, and ecological issues raise additional concerns in this respect. For comparison, Figure 1 presents the forecast with regard to the shaping of energy prices in Poland and in Germany.

Figure 1. The forecast of energy prices in Poland and Germany in the years 2010-2017



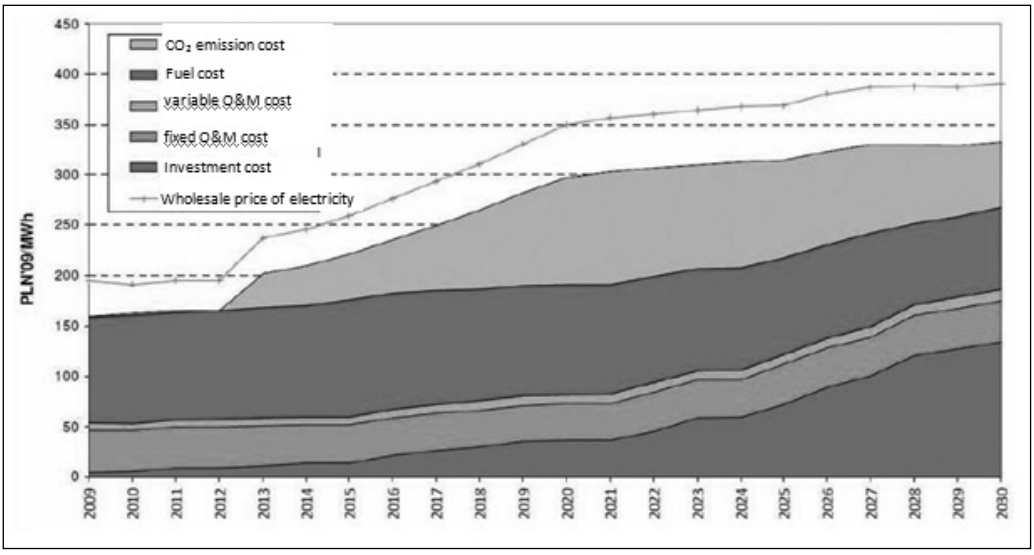

Source: www.parkiet.com/viewtopic.php?p=7529979.

The presented forecast indicates constant trend of an increase in energy prices, which over the years included in the forecast will be 40%, and in addition, ultimately, energy prices in Poland will be on a higher level than in Germany, which will bring about a relative reduction of competitiveness of the Polish economy, particularly towards the countries not observing the agreements of the Kyoto Protocol. In this respect, we should mention countries like the United States which use three times cheaper shale gas, and China which has not agreed to any obligations related to $CO_2$ emissions limitations.

As it can be observed in Figure 2, alongside the introduction of auctions referring to allowances, since 2012 a considerable rise in the energy prices has been observed. In 2030 it may constitute as much as 25-30% of the costs of generating one unit of energy. Of course, we must consider here the fluctuations in the allowance price rates, however, the estimate share in the costs will still be significant. The more so that according to the European Commission forecasts, an average price for a tone of $CO_2$ emission may increase from the current level of about 7.5 Euros/Mg to about 30-39 Euros/Mg in 2020. In this context, some forecasts even talk about the price at the level of 80-100 Euros/Mg $CO_2$ till 2020.

When analyzing positive factors for enterprise activities, it should be stressed that most of them are of intangible and facultative nature, thus dependent on the willingness to undertake them by the enterprise, as well as on the skill to use them.

Figure 2. Shaping of the electricity generation costs in conventional power stations and the prices of wholesale electricity in Poland in the years 2009-2030




Source: http://www.kierunekenergetyka.pl/artykul,4617,rynek-energii-elektrycznej-w-polsce-w-2012-roku-i-w-latach-pozniejszych.html.

In this aspect, one of most frequently indicated areas of the occurrence of benefits related to the implementation of EU ETS is the growth of enterprise innovativeness understood both in the context of implementing new technologies and their development.

The findings of the research conducted in Germany do not give a univocal confirmation of this concept. In the research carried out by Schmidt, Schneider, Rogge, Schuetz and Hoffmann into the influence of EU ETS on the innovativeness of the energy sector, the authors found out that the emissions trading scheme is a factor strongly influencing innovative investment decisions in the case of short-term investments, mostly related to bigger ecological efficiency, which is supposedly an effect of fears of fines for excessive emission levels. But in the case of long-term investments, particularly in respect of B&R these are, among others, the prices of raw materials which have more significant impact (Schmidt, Schneider, Rogge, Schuetz, Hoffmann, 2012, p. 34).

In this context, however, it should be emphasized that the findings of the quoted research could have been influenced by very low prices of the purchase of additional allowances. On the other hand, experiences of other economies indicate that environmental policy has been a strong impulse to develop new technologies and "ecological industry"[2]. In the case of Polish enterprises it should be noted that the mentioned relation can be observed only to a minor extent.

Another area of the occurrence of benefits related to the introduction of emissions limitations are effects with regard to marketing and the CRS strategy which stress turning any activities influencing the environmental protection into a marketing success of an enterprise. It is particularly important and effective in the countries whose societies demonstrate high ecological awareness which is essential during their consumer choices. In such conditions the enterprises creating their image of "environment friendly" can count on winning a bigger group of customers, as well as achieving a higher margin level.

Another positive aspect related to the EU environmental policy is the perception and reception of an enterprise by most crucial institutions of the business environment, such as banks or insurance institutions, as well as current and future investors. A positive image for those institutions can bring a lot of positive aspects. Banks rating financial risk when granting financial credits very often can require security from the enterprise in the form of a pledge of possessed $CO_2$ emissions allowances. On the other hand, when examining the situation from the position of a potential investor, it should be mentioned that upon balancing carbon dioxide emissions allowances possessed by the firm, it will assess the profitability of a specific investment. If it assumes that the business does not possess permits for $CO_2$ emissions necessary to conduct activities, a potential investor will not engage its capital in its work, or possibly it will conduct the enterprise valuation reduced by the cost of purchasing the necessary number of allowances.

Another important area in which it is possible to find positive aspects of introducing $CO_2$ emissions limitations is broadly understood improvement of key internal processes of the enterprise, starting from actions, such as an audit of ongoing quality management processes and systems, designing and executing key technological changes and their implementation. The activities will be undoubtedly reflected in the ongoing and perspective market value of the firm (www.min-pan.krakow.pl/Wydawnictwa/PE092/parczewski.pdf).

In the context of Polish enterprises, it should be mentioned that for many of them the revenues on the sales of surplus allowances are a significant source of income. In this context, however, it should be mentioned that presumably in the near future this aspect will be invalid, which arises from the systematic reduction of limitations, as well as the development of the Polish industry.

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[2] It concerns Scandinavian countries in particular.

## 5. Conclusion

To sum up the above deliberations, we can say that the assessment of the economic effects of the implementation of the European Union Emissions Trading Scheme is extremely difficult. It arises from the fact that the scheme of trading $CO_2$ emissions allowances tackles a very sensitive issue, not only in social terms, but also hitting enterprises very strongly. The situation is additionally complicated by the global economic crisis which, on the one hand, reduces demand for energy, causing the drop in its prices and a decrease in the prices of emissions allowances due to the lack of the necessity to buy them, whereas on the other hand it leads to the reduction of industrial manufacturing and limiting production in some industries.

However, we can say that the current European solutions influence an increase in operating costs and, what follows, the fall of the competitiveness of EU firms. This negative factor may be additionally strengthened if the European Commission estimates concerning an increase in the average price of allowances for a tone of $CO_2$ emissions from the current level of about 7.5 Euros/Mg to about 30-39 Euros/Mg in 2020 turn out to be true. Obviously, this aspect would not be so significant for the competitiveness of the European economy were it not for the fact of the asymmetry of policies on the reduction of emissions conducted by different states. In this context, China and the United States should be mentioned in particular.

However, assuming common validity of the applicable scheme, we can expect that the scheme will fulfill theoretical assumptions and lead to the substantial fall of the costs of environmental protection at the social scale, particularly in comparison with the system of administrative regulation. Until then, positive aspects of introducing the discussed scheme can be considered only as possible consequences of the proper implementation.

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Chapter 12

# Issues of Financial Support of Development of the Commercial Enterprises of Ukraine

*Anatolii Mazaraki, Hanna Sytnyk*

The important precondition of balanced development of national economics is increase of efficiency of functioning of its initial elements – enterprises of different sectors and type of economic activity, special role among which belongs to trade. Being powerful social and economic institute, activity of which is directed to satisfy social needs, trade, by examining of consumer demand, significantly impacts on structure of production, import, promotes formation of rational and logistics chains and production systems, and is an important indicator of social and economic development of society. Effective development and sustainable financial status of trade positively impacts on economic development of state.

Modern stage of development of Ukraine is, probably, most difficult for the whole period of its existence. System crisis, determined by variety of political, economic and social causes, is complemented by significant worsening of economic situation namely: decrease of GDP, net income of population and volumes of industrial production.

Trading, as important indicator of social and economic development, in such conditions demonstrates negative tendencies of main financial indicators, which formed during last years (Tab. 1).

In 2013 there was significant decrease of net income of trade, assets and own capital. Level of decrease of these indicators for 2013 can be compared with crisis of 2008-2009. Unprecedented fall of financial stability of the commercial enterprises took place for the last years; trade again became unprofitable in terms of net profit. Abovementioned tendencies became more significant in 2014 and 2015.

On the background of increase of the consumer price index (on 8.6% in January–February, 2015, comparing with the same period in 2014), and decrease of real wage index, which in January, 2015 made 82.7% comparing with indicator of January, 2014, decrease of goods turnover took place. According to the information of State Statistics Service of Ukraine physical volume

of wholesale goods turnover of January–February, 2015, comparing with the same period in 2014 made 82.7%, as well as volume of retail goods turnover made 78.8%[1].

In such situation, process of reformation and self-improvement is not just a subject of public demand, but is the only way of survival and development of system. Only realization of real reforms on nationwide level can create positive investment climate for entrepreneurship, including its commercial part.

In functioning of trade of Ukraine special mention should go to the number of unsolved issues, which prevent its sustainable development, need solution, and most of which lie directly in the financial plane or significantly impact on financial status of the commercial enterprises and impact on finances of other fields of economics, namely (*Project of Program of Development…*):

- issues on receiving of the land plots into short-term lease for placing temporary constructions for performance of trade activity, as well as the land plots for construction of new commercial objects or areas for lease are still unregulated;
- tendency of decrease of number of sole proprietors that perform their activity in retail trade and restaurant business field remains, and high level of shadow turnover is present;
- issue of high level of accounts payable in trade is still current, which requires regulation of relations between manufacturers of the products and commercial chains within terms and conditions of mutual settlements.

To solve such complex of issues, which is typical for current internal trade of Ukraine, first of all, thorough and deep analysis of the factors that cause them should be performed. We believe that the presence of such issues is caused by a number of factors that should be combined into two groups: external, related to deployment of global financial crisis, complication of crediting processes, decrease of actual income of population (as well as demand respectively), increase of competitiveness and not developed institutional environment in general (imperfect legislation, high level of corruption, insufficient level of entrepreneurial culture and business ethics), and internal, related to insufficiently effective and adequate to the modern business conditions management system at the commercial enterprises.

[1] According to the information of State Statistics Service of Ukraine, www.ukrstat.gov.ua.

Table 1. Financial Indicators of Development of the Commercial Enterprises of Ukraine for the Period 2007-2013

| Indicators | Years | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| Net income, million UAH | 1,111,255.10 | 1,411,013.00 | 1,160,165.36 | 1,383,435.62 | 1,628,138.12 | 1,680,696.55 | 1,257,219.51 |
| Amount of Own Capital, million UAH | 92,643.78 | 66,905.86 | 74,549.27 | 91,710.68 | 116,387.17 | 119,521.36 | 53,110.73 |
| Coefficient of Financial Autonomy | 0.15 | 0.08 | 0.09 | 0.10 | 0.11 | 0.10 | 0.07 |
| Coefficient of Mobility of Own Capital | -0.49 | -1.58 | -1.34 | -1.07 | -0.77 | -0.75 | -1.59 |
| Duration of Operational Cycle, day | 114 | 121 | 173 | 159 | 146 | 160 | 187 |
| Duration of Financial Cycle, day | 9 | 9 | 10 | 9 | 5 | 8 | 9 |
| Efficiency of Assets, % | 4.71 | 1.06 | 1.93 | 3.14 | 2.89 | 1.87 | 1.87 |
| Efficiency of Own Capital, % | 14.24 | -46.76 | -21.89 | 9.76 | 4.55 | 2.23 | -7.14 |
| Share of Profitable Enterprises by Net Profit, % of total commercial enterprises | 69.1 | 64.0 | 62.3 | 60.3 | 64.6 | 64.0 | 65.9 |

Source: Electronic portal of State Statistics Service of Ukraine.

Certainly, solving of the issues, caused by external factors, is possible in context of reformation of economics of Ukraine in general, which should cause improvement of living standards, entrepreneurial culture and business ethics, providing transparent and fair mechanism of state regulation of entrepreneurship activity that creates favorable and equal (in deed and not in name) conditions for business activity, improvement of tax legislation, fighting corruption, which would automatically solve a number of issues, typical for trade and other branches of economics of Ukraine. We believe that the issue of accounts payable in trade, presence and mechanism of occurrence of which is detailed in many articles and discussions in scientific and business publications, is quite illustrative in this sense. Most complaints on these subjects are being received from manufacturers to commercial chains, which demand a fee in one form or another for their goods to enter the market, dictate and violate the terms of payment for delivered goods. Certainly, such issue exists and requires attention and solution. But could it be solved by limitation of terms of payment on legislative level, as it is being proposed by certain specialists? We believe that this approach would not provide expected results in modern conditions. Basically, trade exists in conditions of low level of entrepreneurial culture and high deficit of financial resources, where each branch tries to apply its market power to increase efficiency of its activity in one form or another. Furthermore, the state itself in its relation to business demonstrates low level of culture: is it ethic to demand from trade on legislative level to perform its payments in certain terms while the state itself does not perform this (reimbursement of VAT) and does not hurry to do this.

Even if we allow the adoption of such legislative norms, we believe it would have the following consequences:

- first, the commercial enterprises would try to compensate disability to prolong terms of payment by reduction of purchase price;
- second, it can be assumed that suppliers themselves would agree to violate those terms, fixing it contractually, to obtain competitive advantages;
- third, it can be assumed that if the abovementioned norm would be adopted, it would negatively impact on development of national commercial chains. Foreign competitors are able to involve cheaper loans from banks of countries of their origin in contrast to national commercial chains, which would allow them to develop more dynamically. How beneficial is it for national manufacturer and economics in general? Common practice of foreign companies includes association with their compatriots: they involve foreign companies for personnel attestation, auditing, providing of equipment, engineering. Similarly, it may impact the assortment structure not in favor of the national manufacturers.

Therefore, the most obvious possible and necessary way to solve this issue lies in context of performance of system economic reforms in Ukraine, which will provide the necessary level of entrepreneurial culture (from the state side in the first place), adequate conditions of financial crediting.

Decrease of shadow turnover of internal trade is not possible without significant steps of the state on improvement of business environment, which requires the improvement of tax legislation.

Issues on receiving of the land plots for placing of new commercial objects does not directly lie in financial plane, but they significantly impact on the financial status of the enterprise, its investment possibilities, because they are related to significant non official costs for obtaining different permits and rights. Issues themselves are being caused by the state because of the high level of corruption. That is why it is possible to solve them only in context of implementation

of measures to fight it and it requires political will and establishment in formation of effective mechanism to fight corruption.

Along with the issues on receiving of the land plots, high rents issue (especially in shopping and leisure centers) is another actual issue of the trade. Solve this issue by adoption of legislative norms is hard. It is only possible by gradually formation and civilized development of real estate market, as well as developers' business. It should be noted that the efforts of Ukrainian retail in this direction have civilized character and demonstrate signs of European culture. Therefore, in April, 2013 in Ukraine there was established association of retailers, which consolidated over 100 associated members, major retailers of Ukraine. The object of creation of such association was to unite the efforts of the retailers in formation and developments of civilized retail market of Ukraine. Its founders declared that from the beginning of the 2014 Association is planning to form ratings of shopping centers of Ukraine on the ground of their consolidation and analysis of information, which is provided by the commercial enterprises themselves, and the ratings would be determined on the ground of interrelation of such parameters as rents amount, professionalism of the managing company, flow of customers, which would help the retailers to rate efficiency of their work in certain shopping centers and make smarted investment decisions in planning of placing of their commercial objects. We believe that such initiative shall be considered as a sign of civilized approach to individual solving of common issues of the commercial enterprises of Ukraine at modern stage. A similar approach can be applied to commercial chains from the association of manufacturers. Formation of such institutes and their association is common practice for developed countries, implementation of which on the territory of Ukraine may provide positive results.

Summarizing the above mentioned, we can determine main measures to solve the financial problems in trade of Ukraine, which are being caused by external factors:

1. Improvement of tax legislation, implementation of measures to fight corruption, formation of investment attractive environment in country, demonstration of adequate behavior of the state in regulation of economic processes, which would promote development of entrepreneurial culture and business ethics.
2. Formation and association of non-state institutions, activity of which promotes consolidation of relations between commercial enterprises and enterprises of other branches of economics (between manufacturers and developers in the first place), increase of the level of entrepreneurial culture.
3. Formation of system of measures for development of banking sector with the purpose of providence of adequate to the international practice crediting conditions of real sector of economics.

Large number of financial issues, typical for trade, is caused by internal factors, namely by the imperfect approaches to financial management. Analysis and summary (Mazaraki, Sytnyk, 2013) of internal reasons for deprivation of financial status of the commercial enterprises of Ukraine allows determining the following ways to solve them:

1. Following the less aggressive (more moderate) financial policy. Efficiency of such proposition in modern conditions is proved by current practice. Therefore, in accordance with information of independent consulting group "GT Partners Ukraine" small regional commercial chains developed more dynamically than others did in post-crisis period because they were not too burdened by bank loans (*Rating of the largest…*).

2. Implementation of efficient systems of financial planning at the commercial enterprises that provide realization of three levels of planned financial payments (strategic, current and operative), their variety orientation on efficiency of business processes, which allows making of efficient financial decisions in conditions of unsteady external environment, as well as optimizing of business-model of the enterprise.
3. Realization of measures on risk management and anti-crisis financial management, as preventive instruments for preserving of financial security.
4. Providence of certain formats of the outlets, which allows standardization of business-processes, as well as provides economy of costs and increase of profitability.
5. Increase of efficiency of investment activity: previous estimation of efficiency of placing of the commercial enterprises, cost of the projects, correlations of necessary investment costs with available financial possibilities.
6. Implementation into practice of the commercial enterprises activity of the principles of corporate and social responsibility, which in developed countries is a constituent part of strategy of the enterprise, factor of formation of competitive advantages in long-term perspective, orientation of activity on satisfaction of the interests of different stakeholders, which is the guarantee of balanced financial development of certain enterprise and economics in general.

Only simultaneous implementation of dynamic processes of improvement of economic mechanism on nationwide level and level of certain business entities can allow creating necessary economic platform, which with aspiration of society to fundamental positive changes, can be the basis for formation of new European country.

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Chapter 13

# Creating Corporate Value for Shareholders in Listed Companies[1]

*Jarosław Kaczmarek*

## 1. Introduction

Assessment in the creation of corporate value is used in order to motivate managers to implement strategies to maximize. The benefits of such actions are aimed at all company stakeholders, including in particular, owners. Although the increase in corporate value for owners – the basic topic of consideration in this article – should be assessed in the long term, however, motivation concerning these actions requires an assessment of the short and medium terms. This perspective is also relevant for financial analysts. They search for points of reference, trade measures, ways to extend the information capacity of classical measures for creating values available in specialist literature.

Value and the creation of value, which are the main indicator of corporate management strategy, have led to the creation and development of the concept of VBM – *Value Based Management*. According to A. Rappaport, this concept should be the standard when measuring and assessing company results (Rappaport, 1986, p. 3; Black, Wright, Bachman, 2000, p. 18). The measurement of corporate efficiency in terms of created value is often performed with the use of the market measure – MVA (*Market Value Added*) and the related internal assessment measure EVA™ (*Economic Value Added*). A dependency exists between the two latter measures. Economic Value Added is based around the economic profit model which is a value which, after covering the cost of capital, remains in the company (Ehrbar, 2000, p. 136). The sum of discounted future economic values added describes the MVA. In the general sense this is the difference between market corporate value and its book value (invested capital).

Apart from the collective group of entities acting in keeping with the concept of VBM, in the practice of assessing effectiveness it is income methods that dominate (Olsen, 2003, pp. 286-301); these primarily use the concept of DCF (*Discounted Cash Flow*). This concept perceives corporate value – belonging to owners – through the ability to create income in future periods in the form of cash flows (FCFE – *Free Cash Flows to Equity*). Their popularity is con-

[1] Publication financed by funds granted to the Management Faculty of Cracow University of Economics under the scheme for subsidising university research potential.

nected, amongst others, with the proven positive correlated value of DCF with the price of shares of listed companies in the long term (Benning, Sarig, 2000, p. 90).

The theoretical-methodical purpose of the paper is to indicate the ways of increasing the field of perception of measures for creating values by introducing the concept of excess value. The purpose of application contains surveys carried out on companies listed on Warsaw Stock Exchange (sectors: energy, chemicals, fuels and raw materials industry, developers and construction companies), leading in the creation and destruction of added value in manufacturing. The findings of medium-term assessment have permitted confirmation of the hypothesis concerning the significant correlation of changes in excess market added value with changes in company capitalization.

## 2. Excess Market Value Added

The external MVA measure of created value describes the difference in corporate market value and the value of invested capital. This is both equity, as well as foreign capital, increased by so-called equivalents (Stewart, 1991, pp. 112-117). By adding these to the invested capital (this makes it necessary to also correct the shares) the level, from which the suppliers of capital will expect a given rate of return, will be indicated.

Positive MVA confirms the existence of an added bonus on the capital investment market. If the situation is the opposite one may refer to Market Value Lost (MVL). The added bonus belongs to all parties that financed the undertaking. From the point of view of company shareholders (Cwynar, 2002, p. 90, 176) the basis for the external assessment of effectiveness in the form of $MVA_E$ (*Market Value Added to Equity*) is the difference in the Market Value of Equity $MV_E$ and the value of invested equity $IC^C_E$. This will assume positive value when the *Return on Invested Equity Capital* ($ROIC^C_E$) exceeds its cost $ECC^C$ (*Equity Capital Cost*) (Kaczmarek, 2014b, pp. 72-83).

In relation to $MVA_E$ one may draw attention – rather than describing corporate results the focus is on expressing an opinion about them (the difficulty of assessing managerial action and motivation), the need to list the shares of listed companies and the possibility of designation at company level only (rather than the business u nit) (Nyiramahoro, Shooshina, 2001, p. 50). Furthermore, in $MVA_E$ the benefits to shareholders cover only company market capitalization (without *Cash Distributions to Shareholders*), which is countered by – admittedly with equivalents – the book value of invested equity. It must also be stressed that this is an absolute measure, which hinders comparative assessment.

In order to meet its needs it is necessary to determine the differences in $MVA_E$ values between given periods, which is described by the creation of values. As absolute values they continue to be difficult in terms of comparative assessment, however, referring them to the value of invested equity one may attain the $MVA_{EW}$ relative measure (Kaczmarek, 2014c, pp. 296-300).

In turn, the introduction into the assessment of the expected growth in Market Value of Equity $MV_E$ (company capitalisation) brings the possibility of determining the expected $MVA_{EP}$ and excess $MVA_{EN}$ in terms of real $MVA_{ER}$ (Rappaport, 1986, p. 104; Capron, Pistre, 2002, pp. 781-794).

In addition, this assessment is relative in terms of equity cost $ECC^C_E$, which reflects the expected, minimum rate of return ($MV_E$ growth) (Mikołajek-Gocejna, 2010, pp. 49-50).

$$MVA_{EP} = MV_{Ey-1} \cdot (1 + ECC_t^C) - IC_{Et-1}^C \;;\; MVA_{EN} = MVA_{ER} - MVA_{EP} \tag{1}$$

## 3. Economic as opposed to market value added

MVA is an external measure of created value; its size depends on the market assessment of development capacity and the attainment of economic surplus in future periods, or more specifically – the expected, positive sum of updated Economic Added Value ($EVA^{TM}$) from future periods. The updating of value is performed with the use of the WACIC – *Weighted Average Cost of Invested Capital*.

The concept of $EVA^{TM}$ defines the economic surplus or the difference in the adjusted operating result $NOPAT^{C}$ (corrected *Net Operating Profit After Taxes*) and the fee for invested equity with $IC^{C}$ equivalents, or the difference of the $WACIC^{C}$ (*Weighted Average Cost of Invested Capital* with equivalents) and the $ROIC^{C}$ rate of return on this capital. The cost of invested capital is designated with the use of the CAPM (*Capital Asset Pricing Model*). Corrections to the operating result concern the acceptance of the concept of financing operations exclusively from equity, taking into account changes in values during the given period of the equivalents of invested capital and rejection of those positions in operating results which are not created from the application of operating shares (net shares) (O'Hanlon, Peasnell, 2000, pp. 53-95). These approximate the corrected operating result to the concept of FCFF cash flows.

From the point of view of shareholders, the assessment of economic value added ($EVA_E$) may be performed by guiding oneself with considerations concerning market value added ($MVA_E$) (Kaczmarek, 2014a, pp. 5-12).

Correction of the operating result assumes financing exclusively from equity, for which reason, for the needs to determine the $EVA_E$ in the place of $WACIC^{C}$, the $ECC^{C}$ (*Equity Capital Cost*) is implemented; this is determined for equity through $IC^{C}_{E}$ equivalents.

Relativization of $EVA_E$ by referring it to the value of unvested capital, permits the performance of comparative assessments in time and, in terms of the benchmark (reference group), in a similar way as in the case of $MVA_E$. However, determining excess $EVA_{EN}$ with consideration to the expected, minimum rate of return is not justified – this is because $EVA_E$ contains this criterion. However, it is not verified by the market because $EVA_E$ is an internal measure of created value.

By making use of the relationship of $MVA_E$ and $EVA_E$ one may designate the corporate market value of $MV_E$ (comments concerning the scope of the introduced corrections and equivalents remain current) (Kaczmarek, 2014c, pp. 301).

## 4. Results of the empirical research study of excess value

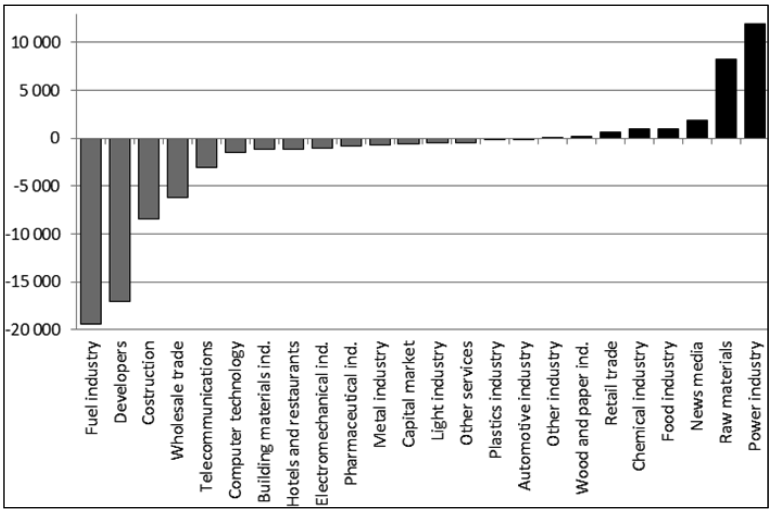
The presented theoretical and cognitive considerations are verified by the results of the research study of 86 companies listed on the Warsaw Stock Exchange (with a total of 369 companies). They are major factors of value creation and destruction, and most of them represent stock exchange indices (primary and sectorial). The study covers the period 2008-2013. The companies are analysed from the perspective of value creation and correlations between its measures by sectors: production (energy, chemicals, fuels and raw materials – 20 companies), real estate (developers – 27 companies) and construction (39 companies).

The analysed companies are primarily constituting the primary WIG-30 stock index and six sectorial indices. During the period of years 2008-2013 (the requirement of cohesion of Figure

data and the maintenance of the required number of companies limits the scope of research to the medium-term) the analysed companies constituted 85% positive and 43% negative value added, generated by all listed companies. A significant role in the Poland's economy and a high share in the reducing and creation of economic value added, has become a reason for detailed analysis of companies these four industrial sectors in the further part of the paper.

The course of the analysis was consistent with the adopted methodological approach, comprising the presented methods and tools (beta risk factors in CAPM calculated for companies and sectors of 10 years, i.e. 120 monthly periods). The exception was the use of the surrogate of economic value added (the lack of financial and accounting information) in the form of Hamilton's and Marshall's concept of residual income (RI) – without operating result corrections and equivalents of invested capital (Stern, Stewart, Chew, 1995, pp. 32-46).

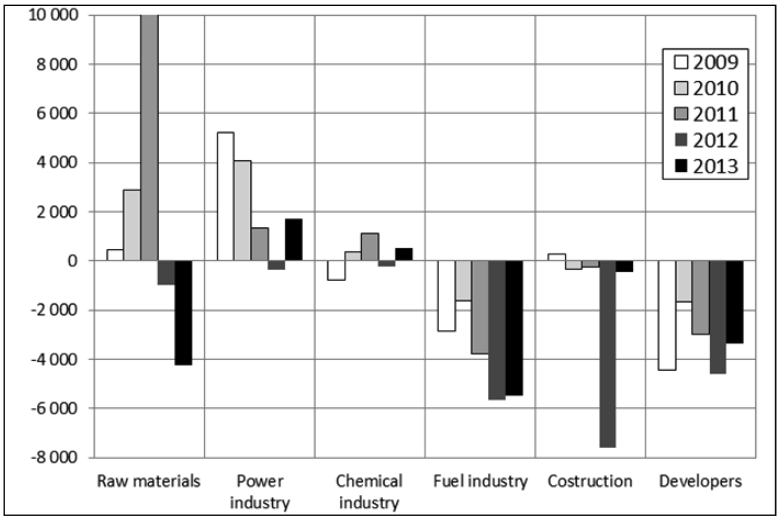
Figure 1. Economic value added $RI_E$~$EVA_E$ in sectors of Poland's economy (2009-2013, listed companies, in PLN millions)




Source: author's own research based on information and figures provided by notoria.pl, gpw.pl, vba.pl, and financial information provided by particular companies.

An assessment of the 5-year period of the performance of listed companies (publicly traded and of key significance to the economy) is negative (see Fig. 1). The particular sectors created economic value added in the amount of PLN 25.0 bn, while destroying economic value at the level of PLN 61.9 bn, thus leading to a negative balance. Value was created mainly in the energy industry and the supply of raw materials, while value losses were recorded in the fuel industry, developer activities, construction, wholesale trade and telecommunication. The six analysed sectors (energy, fuels, chemicals, raw materials, construction and developers) recorded the highest annual $RI_E$~$EVA_E$ values as well as diversified changes. In each year, the fuel industry and developers recorded value losses, especially in the period of the last two years. On the other hand, the raw materials industry, following the period of value creation (2009-2011), entered a period of rapid value destruction. Strongly unfavorable situation related to the construction in 2012 (see Fig. 2).

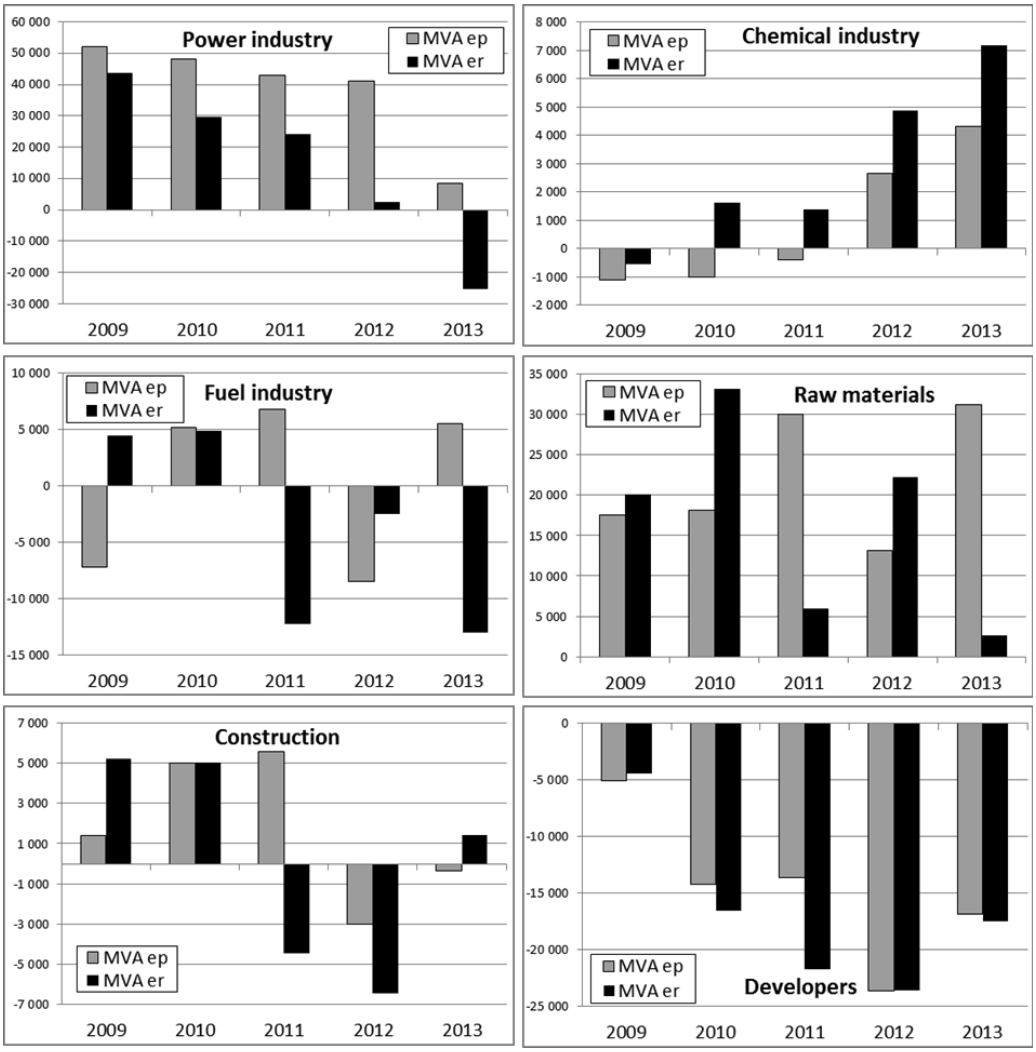
Figure 2. Economic value added $RI_E$~$EVA_E$ of analysed companies according to sector (2009-2013, in PLN millions)




Source: same as Figure 1.

In the entire group of companies significant differences between the expected $MVA_{EP}$ and the real $MVA_{ER}$ were particularly visible in 2011 and 2013 (see Fig. 3). The situation strongly differentiated in the sectors – the most favourable was in the chemical industries, and the worst in developers sector and fuel industry. 2011 and 2013 which were unfavourable impacted mostly standing in the fuels and raw materials industries, through the transmission of impulses from the global commodity exchange. Though caution by the market in the assessment of the creation of $MVA_E$ by chemical sector companies is explicable, the placing of such considerable expectations – albeit diminishing – on the growth of the $MVA_E$ of energy sector companies is curious – there is a growing difference in $MVA_{EP}$ and $MVA_{ER}$.

Figure 3. Market value added of analysed companies according to sector




Comments: $MVA_{EP}$ – expected market value added; $MVA_{ER}$ – true market value added.

Source: same as Figure 1.

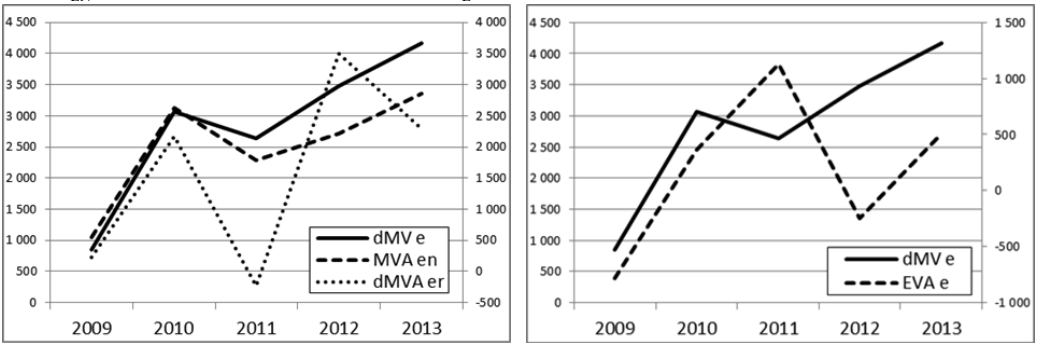
The difference between the expected $MVA_{EP}$ and the real $MVA_{ER}$ is described by the excess $MVA_{EN}$, which may be relativized and used for assessment with the use of a benchmark. It may also be assessed in terms of changes in the market value of $MV_E$ for given companies. In this manner differences emerge in the assessment of creating the value added of $MVA_{ER}$ performed by the market in terms of the value added of expected $MVA_{EP}$ and at the same time in reference to the company market value of $MV_E$ – its capitalization.

For the last year of analysis (2013), in all analysed companies the $MVA_{EN}$ value (in other words the market bonus in terms of expected, minimum return) was lower than the change (in-

crease/decrease) in the $MV_E$ value. In the set of negative values of both categories the assessment of this situation ought to be negative. In the set of positive values the situation is not unequivocal. The positive $MVA_{EN}$ value may arise with negative $MVA_{ER}$ because of the lower value of $MVA_{EP}$ than its own. Therefore there is a real loss of value added, but despite this assessment from the point of view of $MVA_{EN}$ would be positive.

This may be explained through the opinion of J.A. Knight, who recognises this situation as a type of bonus that balances out the opportunities of strong and weak companies (Knight, 1997). Investors expected worse results than the ones attained by the company. They assess this event as relatively positive. However, this disrupts the external comparative assessment and the internal operation of motivation systems, discriminating companies that demonstrate positive $MVA_{ER}$ values. Thus, one can agree with this concept, however, the condition for positive assessment is $MV_E$ growth at least at the same level as $MVA_{EN}$.

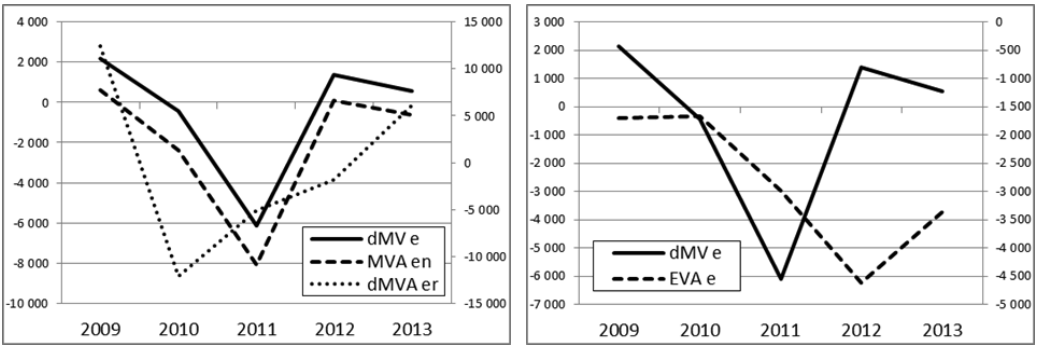
Figure 4. Changes to market value ($dMV_E$), market value added ($dMVA_E$) and excess value ($MVA_{EN}$) also economic value added ($EVA_E$) in the production companies (in PLN millions)




Source: same as Figure 1.

By providing excess $MVA_{EN}$ analysis with a dynamic dimension, one may assess changes in this category in terms of $MV_E$ changes – not so much in absolute terms in individual periods, as rather in their general direction in time. Through analogy it is possible to make reference to $MVA_{ER}$ and $MV_E$ changes. In the other case, there is evidence of smaller compliance in the intensity of change (correlation 0.69 in production companies and 0.51 in developers and construction companies), whilst in terms of higher correlated $MVA_{EN}$ and $MV_E$ changes (0.95 in production companies and 0.98 in developers and construction companies), excess $MVA_{EN}$, in consideration of expectations and real value added, better describes the changes taking place on the market of assessing changes in the value of company capitalization (see Fig. 4 and 5).

Figure 5. Changes to market value ($dMV_E$), market value added ($dMVA_E$) and excess value ($MVA_{EN}$) also economic value added ($EVA_{ER}$) in the developers and construction companies (in PLN millions)




Source: same as Figure 1.

Also, correlation between changes to $MV_E$ and $RI_E$~$EVA_E$ is low (0.53 in production companies and 0.01 in developers and construction companies). Obviously, $MV_E$ is based on the assessment of companies' future potential, which can be inconsistent with the assessment of current results affecting value added $RI_E$~$EVA_E$. These results, however, are real – not expected, as in the case of $MV_E$ – which poses questions to companies' ability to create value added.

## 5. Conclusion

The measurement of corporate efficiency in terms of created value is often performed with the use of the following market measures: MVA or EVA™. This has a tendency to broaden the field of perception by introducing the concept of excess value, as well as relativization for, amongst others, assessment in terms of benchmarking. Use should be made of links between measures in the creation of value added (economic and market), and market corporate value – the capital invested in the company. It is also helpful to refer to income methods in corporate assessment.

The findings of research carried out on 86 companies listed on Warsaw Stock Exchange (sectors: energy, chemicals, fuels and raw materials industry, developers and construction companies), gave a range of medium-term assessment conclusions. Their meaning is based on the advantage of these entities in the creation and destruction of added value in manufacturing. This summary contains the basic empirical conclusions drawn from theoretical and methodical considerations.

Measure of economic value added express internal value; this does not harmonize in the group of analysed companies with external assessment, with the use of $MV_E$ market value measures and $MVA_E$ market value added, also excess $MVA_{EN}$. These two latter measures are long-term measures, as opposed to the economic value added measure (relating to a given single period). On the other hand, however, $MVA_E$ combines in itself committed capital and the sum of $EVA_E$. This means that there should be a closer correlation between $MVA_E$ and $EVA_E$, even in the short-term.

One may expect that continuation in research in terms of a formulated path (extension of time sequences), will permit the verification of the hypothesis on the pre-emptive nature of signals

stemming from external measures of created value (secondary) in terms of signals stemming from internal measures (primary).

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Chapter 14

# Methods of Enterprise Value Creation[1]

*Sylwia Bętkowska*

## 1. Introduction

Value is one of elementary and at the same time ambiguously defined categories. As early as in ancient times, Aristotle contemplated the reasons for which some extremely useful goods are characterized by low value, and others, less needed – by very high value. However, he did not notice the difference between value in use and value in exchange, and only 19th century economists solved that problem. According to Wielka Encyklopedia PWN (Great PWN Encyclopedia), today value is the fundamental category of axiology and stands for anything which is precious, desirable and is an object of human endevaours. Among philosophers there is an ongoing discussion whether subjects are entitled to it objectively or subjectively. Objectivists assume that it is a quality of a specific object, regardless of the subjective assessment of a given subject. On the other hand, subjectivists claim that value is a quality assigned to an object by a subject. Therefore, it reveals specific emotional and volitional attitudes (Wielka Encyklopedia PWN, p. 13). In economic studies, it is assumed that money is the measure of value.

## 2. The enterprise value concept

Contemporary enterprises function in a turbulent, rapidly changing environment. Economic and socio-political processes with which the development of technique and technology, volatility of business processes is connected, do not have local, national but global character. It influences the conditions of the functioning of enterprises which have to skillfully adapt to the changing environment. In consequence, management concepts are subject to constant evolution, new views and fundamental assumptions are formed, aiming at the improvement of the effectiveness and efficiency of operations, and in the future, the accomplishment of the goals set. Yet, the goals are also subject to transformations. It should be emphasized that those of classical character, which include survival and development, are still topical. Survival, because the ability to fulfill the remaining enterprise goals depends on it. The goal prevails particularly in the periods

[1] The paper was financed with subsidies granted to the Faculty of Management of the Cracow University of Economics for maintaining the research capacity.

of recession and instability of the economic system. However, the very existence of the entity on the market, in the conditions of competition and changing environment would result in stagnation, and, in consequence, its gradual atrophy. Thus, the enterprise's focus on survival enforces the fulfillment of the postulate of development, which has the nature of directional goal. Moreover, one cannot consider the aspect of development if survival is not ensured. According to the neo-classical theory, the main objective of enterprise management is profit maximization, yet, it should be noted that profit is correlated with the aspect of survival and development. The derivative of the primal goal of enterprise management is an increase in its market value, which leads to the maximization of shareholder value. The benefits are manifested in the form of dividends and/or long-term growth of stock/shares value, on the condition that it is higher than the growth of inflation rate. It should be stressed that the goal cannot be accomplished if survival and development are not provided. In addition, it is reflected in the neo-classical theory since profit, as the source of paid dividend paid is closely related to shareholder value.

In market economy, an enterprise has the character of both a utility good, as well as an object of trade. Since the enterprise is the object of market exchange, therefore, it can be the object of exchange to another good, it has a value based on the exchange relationship. It is determined by the inclination of potential buyers to offer specific goods or money for a given enterprise, being the universal means of exchange. To some extent, utility is of subjective character, it is understood as a quality of a given good and reflects is capability of meeting specific needs, thus, also the attitude of subjects to it. Thus, in a sense it is a prerequisite of the existence of exchange value. Utility is a condition *sine qua non* of the existence of exchange value or value as such. However, high utility value is often accompanied by a low or very low exchange value. And vice versa.

The notion of enterprise value should be separated from its price. Enterprise value is an outcome of the conducted valuation, thus, among others, by means of supply and demand, it can differ from the actual purchase/selling price of a specific enterprise. On the other hand, the price of an enterprise is the result of negotiations between the interested parties to the buy/sell transaction, and the starting point to determine the enterprise price is its value. Depending on the considered aspect, there are numerous interpretations of enterprise value.

The notions of value in exchange and value in use are interrelated. Their resultant is market value considering the aspect of supply and demand, and being the effect of specific behaviour of rationally behaving market participants, which A. Smith called natural value, namely the one to which the values of all goods strive for. Therefore, value is not a quality of a specific good but it reflects making money-based comparison of a given good with others, in specific time and conditions, which proves the subjective character of value.

When discussing the aspect of value, it becomes justified to quote detailed definitions of a business entity value, namely so-called value standards. The standards define parties to a transaction, both the real and the potential one, and in consequence they indicate the choice of a valuation method and economic factors which are necessary to be considered. Based on individual definitions of enterprise, various methods of its valuation have been developed. Enterprise value can be discussed in the liquidation approach or in the going concern approach. The going concern approach can capture enterprise value as book value or in the context of the essence of investment – Table 1. The Polish Federation of Valuers' Associations within Polish Valuation Standards (2011) defined four most important firm valuation standards which include: fair market value, fair value, investment value and intrinsic value.

Table 1. Enterprise value approaches

| General definition of enterprise value | Enterprise value approach | Value standards |
|---|---|---|
| **Going concern approach** | Enterprise value in book approach | • book value |
| | Enterprise value in investment approach | • fair market value<br>• market value<br>• investment value<br>• intrinsic or fundamental value<br>• fair value |
| **Liquidation approach** | Enterprise value in liquidation approach | liquidation value |

Source: own study based on Szczepankowski, 2013, pp. 31-32.

The notion of value also occurs in the area of accounting in which it is understood not as an economic category but as an effect of its measurement. Book value is a result of entries made in its books of account. It is calculated by reducing the value of enterprise assets by foreign capitals and liabilities and provisions against liabilities. The value is also called fair value (Daszyńska-Żygadło, 2015, p. 15). Fair market value is the price for which a specific entity can be bought at a given point in time. The b uyer should not be subject to external pressures and should have information sufficient to make rational decisions. The value is also sometimes called fair value (Daszyńska-Żygadło, 2015, p. 15). Market value is defined as the most probable price for which a company can be bought/sold. The entities interested in the transaction should have full information, their actions are rational, and the transaction is concluded fairly on the open market on which the principles and forces of competition function (Szczepankowski, 2013, p. 32). Market value is not influenced by short-term factors, which include, for example, investors' emotions.

Investment value of an enterprise is defined as value to a particular investor, thus, it matches the investor's investment requirements, criteria and preferences. Thus, he will be interested in the level of investment risk, the abilities of the entity to generate profits and potential benefits arising from the strategies employed by the company. The discussed value is influenced by the factors related to goodwill, the company status and its other assets, as well as declarations of changes owing to which it becomes possible to increase enterprise value and its shareholder value.

Intrinsic (or fundamental) enterprise value is based on the abilities of an enterprise to generate profits, both for the existing and potential investors. Its level is defined with regard to current and future results which can be achieved owing to the assets being at the company's disposal. Intrinsic value does not depend on the current market situation. It can be determined owing to the use of various valuation methods, and the discounted cash flow method is regarded the most appropriate one. Since the method requires to possess full information about the economic and financial condition of the entity, it matches the needs of its shareholders and managers.

The notion of fair value was created in the United States and does not have a universal character. It is characterized by formal and legal rather than economic dimension. It is related to the protection of the minority shareholders. In case of taking strategic decisions by the management board which, according to minority shareholders, will reduce the enterprise value, they can sell their stock/shares for the price reflecting fair value.

Liquidation value of the enterprise corresponds to the price obtained owing to the sale of the enterprise. Residual value is the expected net sales price of the residue of a fixed asset. It is estimated as a price possible to be obtained at the date of sale but it does not include value added tax. It is also reduced by the costs of preparation for sale and discounts and rebates. Residual value stands for the enterprise value at the end of the analyzed period.

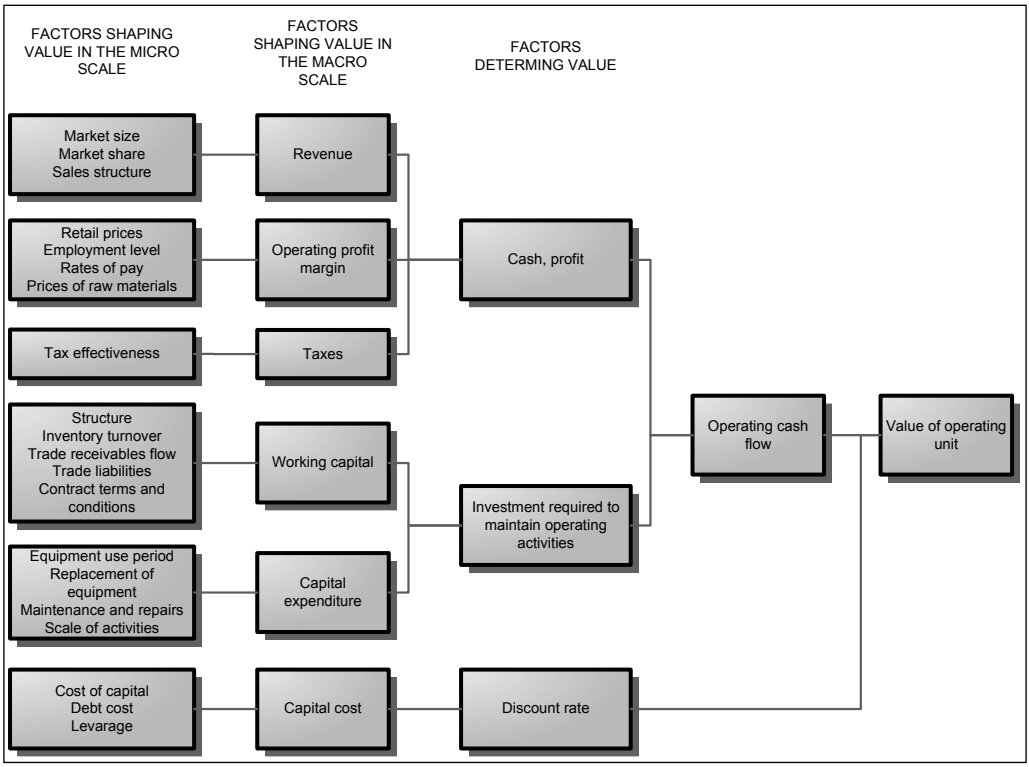
## 3. Factors shaping enterprise value

Enterprise value is an extremely synthetic measure, thus, it is influenced by numerous factors. A. Rappaport was one of the first to pay attention to factors influencing enterprise value and he primarily included in them: operating cash flows, discount rate and debt. Then, he isolated the following enterprise value parameters: sales growth rate, operating profit margin, income tax rate, investment in working capital, fixed asset investment, cost of capital and value growth period (Rappaport, 1999, pp. 64-65).

Value creation should take place simultaneously in all areas of enterprise operations. From the perspective of financial analysis, it is necessary to collect data from all three areas of operations, namely from the area of operating, investment and financial decisions, and then investigate the relationships occurring in the connection of creating shareholder value. Operating activities are the core activities, namely production, trade, service provision, etc. Operating decisions are related to shaping prices, promotion, the structure of products, advertising, distribution, the level of customer service. They influence such value determinants as sales growth rate, operating profit margin and income tax rate. Investment decisions are related to investing capital in fixed and current items of assets, which translates into such value drivers as investment in fixed assets and investment in working capital. An increase in outlays on investment in fixed assets is determined by a need to raise sales. On the other hand, additional investments in working capital are outlays on current assets related to the growth of sales, however, financed with other financial sources than trade liabilities. Financial activities are related to the shaping of the value and structure of capitals financing the enterprise. The cost of capital depends on the applied financial instruments within a specific capital structure, and on the level of risk which accompanies conducting particular business activities. Weighted average cost of capital determines discount rate at which future free cash flows are discounted. The last factor mentioned by A. Rappaport is the period of value growth meaning the estimated number of years in which the return on investment will exceed the cost of capital. It is influenced by the profitability of investment and the strategy on the market.

The indicated factors are extremely important while calculating enterprise value, however, in the context of taking operating decisions they are too general. Therefore, in addition to the mentioned determinants expressed in the macro scale, also determinants in the micro scale should be established. Assessing the parameters in the micro scale enables to focus on operations conducive to the growth of enterprise value and excluding operations adverse to the growth or having very little influence on it. Thus, it becomes possible to isolate factors with the greatest and the least impact on it, as well as those which can be controlled in a simple way, as well as determining "leading value indicators". Figure 1 presents exemplary links between determinants in the macro and micro scale. It includes macro-drivers of value with corresponding micro-drivers.

Figure 1. Factors shaping value in the micro- and macro-economic scale




Source: Rappaport, 1999, p. 188.

The choice of micro-drivers appropriate for a specific business entity should be accompanied by the preparation of current, operating activities enabling the entity value creation. The ways of raising value are presented in Table 2.

Table 2. Value micro-drivers and methods of enterprise value creation

| **Value micro-drivers** | **Ways of raising value** |
|---|---|
| • market size<br>• market share<br>• sales structure | • growth of operating effectiveness via preparing the offer of appropriate products<br>• increase in share of market value and maintaining profitable markets<br>• entry to new markets<br>• development of new products<br>• globalization of activities<br>• development and implementation of new sales policy, also promotional one<br>• offering price benefits |

| Value micro-drivers | Ways of raising value |
|---|---|
| • price level<br>• employment level<br>• remunerations<br>• material prices | • cost restructuring<br>• optimization of production<br>• employment restructuring<br>• growth of efficiency<br>• production standardization<br>• sales effectiveness growth<br>• outsourcing<br>• process management<br>• development of IT systems |
| • tax strategies | • use of reliefs and exemptions<br>• use of tax shield effect<br>• considering international holding structure<br>• planning in terms of duties and prices in internal trade<br>• firm localization |
| • inventory turnover cycle<br>• receivables turnover cycle<br>• current liabilities settlement cycle | • implementation of working capital monitoring<br>• inventory optimization<br>• shortening receivables cycle, among others by the system of discounts for early payment<br>• minimizing free cash flows<br>• improving short-term liabilities management<br>• implementation of supply chain management system |
| • asset lifetime<br>• scale of activities<br>• replacement and outlays on assets | • spin-off and sales of shares<br>• investing in profitable projects, with positive Net Present Value (NPV)<br>• sales of unused assets<br>• asset leaseback<br>• lease of unused assets |
| • cost of equity<br>• debt cost<br>• debt level | • finding cheaper sources of financing<br>• proper choice of source of financing<br>• calculation of proper level of financial leverage<br>• determination of equity cost comparable in the sector and weighted average cost of capital<br>• instruments of raising capital |

Source: own study based on: Kowal, 2005, p. 131.

The period of competitive advantage, that is, the period of value growth is influenced by the profitability of investments, the power of competition and the type of the adopted market strategy. In the mentioned area, the methods of raising value can include factors, such as: innovativeness, openness to changes in the enterprise, improvement of relationships with investors, focus on key competences, motivation system based on enterprise value and the improvement of cash flows (Kowal, 2005, p. 131).

According to D. Walters, the factors determining value, in addition to those mentioned by A. Rappaport, should be also include (Walters, 1997, Issue 10):

- customer loyalty management,
- "coproduction", that is engaging suppliers and customers in the value creation process,

- operating leverage,
- financial leverage and corporate governance,
- available and applied capabilities management.

The factors indicated by D. Walters influence the determinants mentioned by A. Rappaport and they should be discussed as their elaboration, however, in his opinion, their role in the value creation process can be extremely high, therefore, they should be mentioned in the basic group of factors. From the perspective of enterprise value, customer loyalty can be very important. In this context, the cost of winning a customer becomes significant, the longer they are connected with the enterprise, the lower the costs of winning a specific order are, and the more certain future cash flows are. Coproduction is related to engaging suppliers and customers in the value creation process. For example, IKEA sells flat-pack products, owing to which they can be sold cheaper. Because the assembly is easy, and to each article proper assembly instruction is added, the value for the customer is almost the same as the value of assembled article. It is accompanied by a lower price, owing to which a higher value is fulfilled. The operating leverage effect is connected with the relationships between fixed and variable costs in the enterprise. An increase in production and the growth of sales translates into the reduction of fixed costs per unit, which results in the reduction of total costs. Therefore, if at the fixed price the growth of sales will be observed, over-proportional increment of operating profit will be noted. At a high level of fixed costs even insignificant increase in production will influence a significant reduction of unit total costs and considerable growth of profit on the operating level. On the other hand, the growth of sales at a low level of fixed costs will barely translate into the operating result. However, it should be emphasized that high fixed costs are accompanied by high risk because in the case of the collapse of sales, it will be very difficult to reduce them quickly.

Capacity can be, for example, the production capacity for entities manufacturing durable goods, and for commercial firms this will be the capability of increasing turnover. To a great extent, enterprise value is influenced by the ratio of capacity possessed to capacity used. Usually, the higher it is, the more beneficially it will translate into value. However, a situation may also occur in which the occurrence of unused capacity will enable a short-term use of production capacity, and thus an increase in value (Dudycz, 2005, pp. 25-26).

A. Szablewski pays attention to the fact that over the years, the centre of gravity of value determinants has shifted from financial through marketing to intangible ones – Table 3.

Table 3. Enterprise value generators

| Financial | Marketing | Intangible |
|---|---|---|
| 1. Growth of sales | 1. Winning new customers | 1. Intellectual capital |
| 2. Increase in operating profit margin | 2. Retaining existing customers | 2. Innovative ability |
| 3. Maintaining tax rate in cash on existing level | 3. Building new distribution channels | 3. Strengthening the power of brand |
| 4. Working capital; growth below growth of sales | 4. Internationalization of growth | 4. Effective logistics |
| 5. Raise of fixed assets with positive IRR | 5. Profitable alliances and takeovers | 5. Creation and development of internal culture |
| 6. Lowering weighted average cost of capital | 6. Winning new sales markets | 6. Communication, building trust, and strengthening social reputation |
| 7. Extension of value growth period | | |

Source: Panfil, Szablewski, 2011, p. 35.

Value drivers should be analyzed considering the specific character of a given enterprise and the situation in which it is, since the change of a single factor will not necessarily lead to the growth of market value, therefore, enterprise value determinants should be reviewed periodically. Moreover, they should be considered jointly because a positive change of one parameter will not always translate into the same changes of other determinants, which can result in the drop in the enterprise value.

## 4. Conclusion

The value creation process is implemented via the constant cycle of capital turnover. The capital is initially raised, then transferred into resources, the resources into goods which are traded – in this way the capital is recovered and multiplied. From the point of view of the enterprise, the most valuable asset, the basis of the existence and the main source of value are customers (Szablewski, 2006, p. 17). Of course, there are opposite situations, when supply creates demand, but these are customers who stay in the centre of the firm's attention. Loyal customers constitute a particularly important group because they are bound to the enterprise in a longer term, thus, they influence the shaping of enterprise value, and, in consequence, shareholder value. Information and information systems enable to win, collect, store, process and use data which are in the enterprise environment. They facilitate the multiplication of value. Owing to human capital, broadly available resources can be used in a different and exceptional way, and the results of its accomplishments can become a source of enterprise value.

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# PART III

# SECTORAL PERSPECTIVE OF THE DEVELOPMENT OF ENTERPRISES AND ECONOMIES

Chapter 15

# Modelling Business Processes in the Wholesale Trade

*Anatolii Mazaraki, Nataliia Ilchenko*

## 1. Introduction

The formation and development of the wholesale market in Ukraine require intensive formation of its infrastructure, creation on the new basis of informational, credit, financial and regulatory support. The process of formation of business models is in the plane of scientific research of modern aspects of enterprise management and is in the field of vision of foreign and domestic scientists. However, some theoretical and practical issues still have not received a comprehensive scientific study. General problem of enterprise management is traditionally analyzed in most of studies while business modeling is not given enough attention. The development of material and technical base of the enterprises of wholesale trade, warehousing, transportation and distribution centers, terminals, network of public warehouses by attracting investment will contribute to the effective functioning of the economy.

## 2. Purpose and basic research problems

Important in this area of research are scientific results of foreign scientists: Taichi Ono, J. Wumeck, D.T. Johnes, Burn Adersen, M. Hammer and J. Champy, T. Davenport, J. Short, M. Porter, Vanenburg, Millar, B. Demming, J. Hurrington, K. Ekselling, H. Binner, E. Zinder, E.G. Ohman, and V.V. Apopia, L.V. Blabanova, I.O. Blank, L.O. Bragin, N.A. Holoshubova, V. Danenburg, A.A. Mazaraki, F. Kotler, R. Monkrif, V.P. Onyshchenko, M.V. Opelbaum, V.K. Pambuchchian, F.K. Pankratov, B.M. Torokov, H.I. Trishkina, O.M. Trubey, K.P. Pashaeva.

The analysis of scientific work and practice of economic activities in the transition period identified problematic issues of modeling the business processes of the enterprise of wholesale trade. The purpose of the study is to determine the location of wholesale trade in the socio-economic development of the country, to identify key business processes and problems in modeling of business processes.

Currently the conditions of functioning of the enterprises tend to optimize business processes. Thus, the ability of companies to adapt more quickly to changes in market conditions, to offer

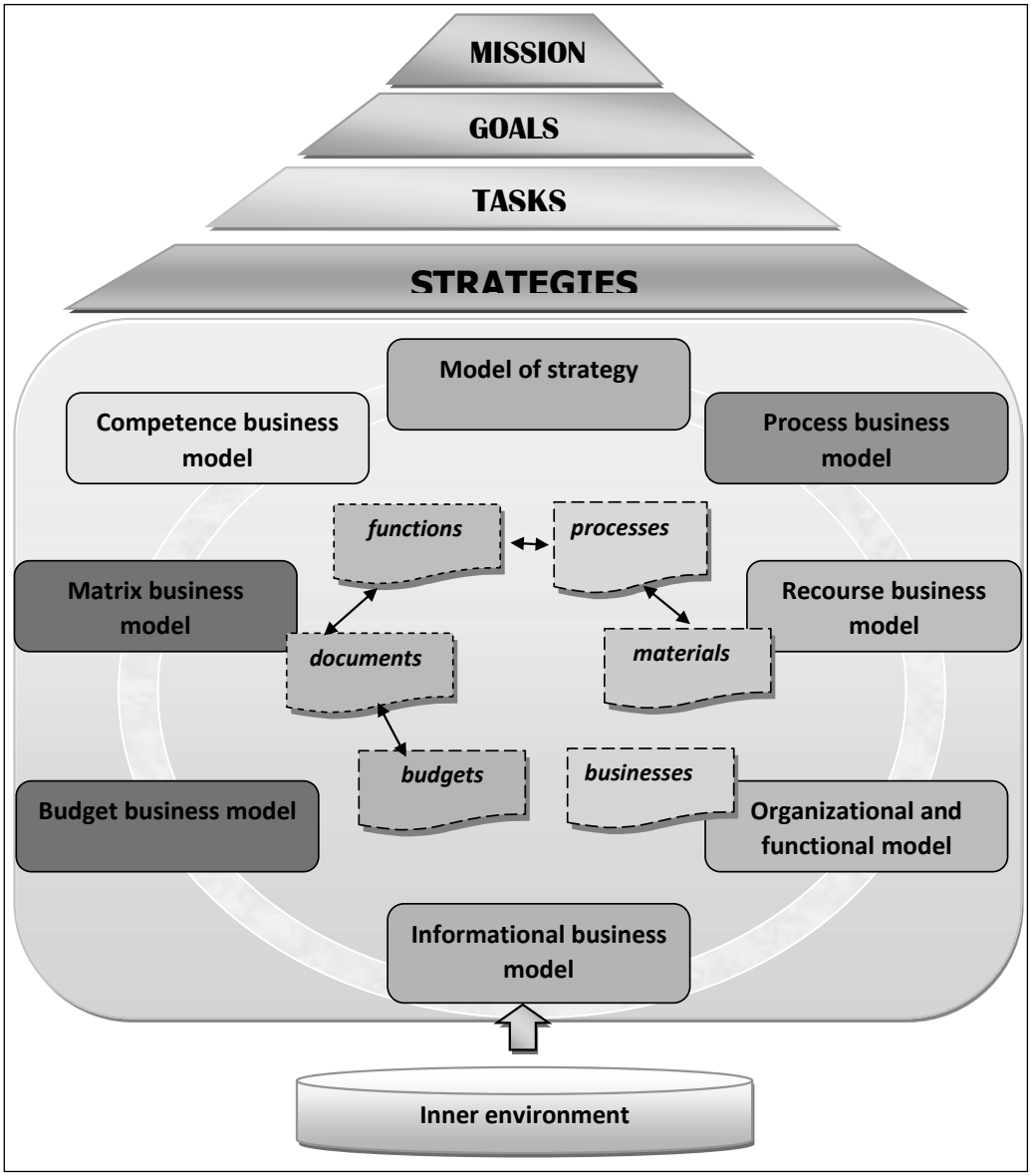
new services before the rivals, becomes extremely important in an uncompromising competition. In determining the essence of the concept "business model" 2 approaches are allocated: 1) focused on business processes/roles. The first approach involves a review of the activities of the enterprise from the point of view of business processes and technology (the focus of attention is directed to the internal operations of the enterprise); 2) value-oriented/customer. The second approach, by contrast, involves the orientation of the value that the company creates for external clients, as well as on results of operations.

The business model is based on the development goals of the enterprise, which determine the basic composition of all components of the business model (end-to-end business processes), which together comprise some methodological platform. It allows you to answer the question: WHAT? and HOW? you need to do to achieve the desired result. Besides, it is a mistake to assume that the business model is simply a set of documents that describe the business processes of the enterprise. Key elements of the business model of any company that determine its contents are: the value for external clients the company provides through its products and services; the system of creation of this value, including suppliers and target customers and the value chain; the assets that the company uses to create value; the financial model of the enterprise, which determines both the structure of costs and ways to profit (Revutskaya, 2002, p. 234). Combining classifiers in functional groups and interconnecting elements of different classifiers using projection matrix, we will receive a set of business models of the enterprise (Fig. 1).

When creating the business model of the wholesale enterprise we must register all business processes: to determine the owner of the business process; to define the boundaries of the business process (the boundaries of responsibility and authority of the owner of the process to manage the process; identification of customers and outputs of the business process; to identify suppliers and inputs of the business process; to identify resources needed to execute the business process (*available to the owner of the process); to describe the technology of the execution of the business process; to develop indicators by which to assess the business process, its results and customer satisfaction businessprocess; to describe the work of the owner on the analysis and improvement of the business process, and reporting to the top management.

While using a particular model in the enterprise all the necessary administrative regulations should be formed. The priority choice of the business model of the enterprise depends on the characteristics of the organization and its activities. Some businesses can use these business models in combination.

Figure 1. Elements of the business model of the enterprise




Source: own work.

Modeling the business processes of the enterprise has the following advantages: reduced cost, duration and the number of errors in each of the analyzed processes; integration with the company's strategy and key performance indicators (KPIs); improved communication between em-

ployees and divisions of the enterprise; the approach to certification under ISO: 9000; increase of investment attractiveness.

On the basis of these variables that determine the qualitative state of the object business, it is possible to allocate 5 blocks of content that bring together the main elements of the business model:

I. Block "Content values" (which identifies the key business areas (business portfolio);
II. Unit "Value Creation" (accumulates the description of tangible and intangible assets involved in the creation of customer value, identifying partners, suppliers and models of relationship between them, applied technologies, and the structures and functions necessary to create the selected consumer value);
III. Unit "Value Realization" (characterizes the target market segments, competitors, methods and channels of distribution);
IV. Block "Control" (describes management relations, ensuring the coordination of all elements of a control system of business);
V. Block "Cash Generation" (reflects the ways and methods of formation of the end result of economic activity in transformed (financial) form).

The interconnection of the blocks that form the business model is carried out using flow processes that determine the circulation of material resources, information, finances both as purely within the company and in its interaction with the external environment. A systematic approach to managing complex data flows can be implemented through the management of the business processes of an end to end chain operations that pass through a lot of structural units and provide a variety of resources. Business processes permeate the business model coordinating the interaction of its constituent blocks, and it is an important part of defining a scheme to obtain the final result of the business.

## 3. Creating a business model of wholesale trade in Ukraine

The performance of any of the subprocesses should be evaluated in the performance of its contribution to the achievement of the goal of the whole system, and not by its individual performance or profit under any other criterion. In the process the chain performers are considered as domestic suppliers and consumers. The contractor is also the supplier for the next performer and the consumer for the previous one. Then the purpose of every contractor is a need to provide a better customer satisfaction as a result of its activities. Thus, in Figure 2 there is an example of the functional approach to the formation of the business processes of the enterprise of the wholesale trade. When using the process approach performers are endowed with greater powers that increase their role, independence and as a consequence – feedback and job satisfaction. Managers, in turn, are exempt from current affairs, operational issues and focus on strategic and systemic issues.

In determining the essence of the term "business model" should be noted that this term is often confused with strategy, replacing one concept to others, including strategy or as a component of the business model. This fact is due to the fact that the business model is closely connected with the strategy, but is not the same.

Figure 2. Functional approach to building business processes of the enterprise of wholesale trade

| **Functional business processes of the enterprise of wholesale trade** | | | |
|---|---|---|---|
| **Sales Department** | **Market analysis of suppliers;** | **The marketing Department** | **Financial service** |
| • Preparation of sales plan<br>• Attracting new customers<br>• Preparation of commercial offers to customers<br>• Signing contracts<br>• Preparation of the decision on the loan | • Market analysis of suppliers<br>• Negotiation with suppliers<br>• Preparation of contracts of purchase<br>• Control of delivery | • Planning marketing activities<br>• Preparing and conducting promotional offers<br>• Preparing and conducting presentations on products | • Preparation of the draft budget<br>• Analysis of the rationale of purchasing prices<br>• Negotiation of contracts<br>• Payment of bills<br>• Providing loans |

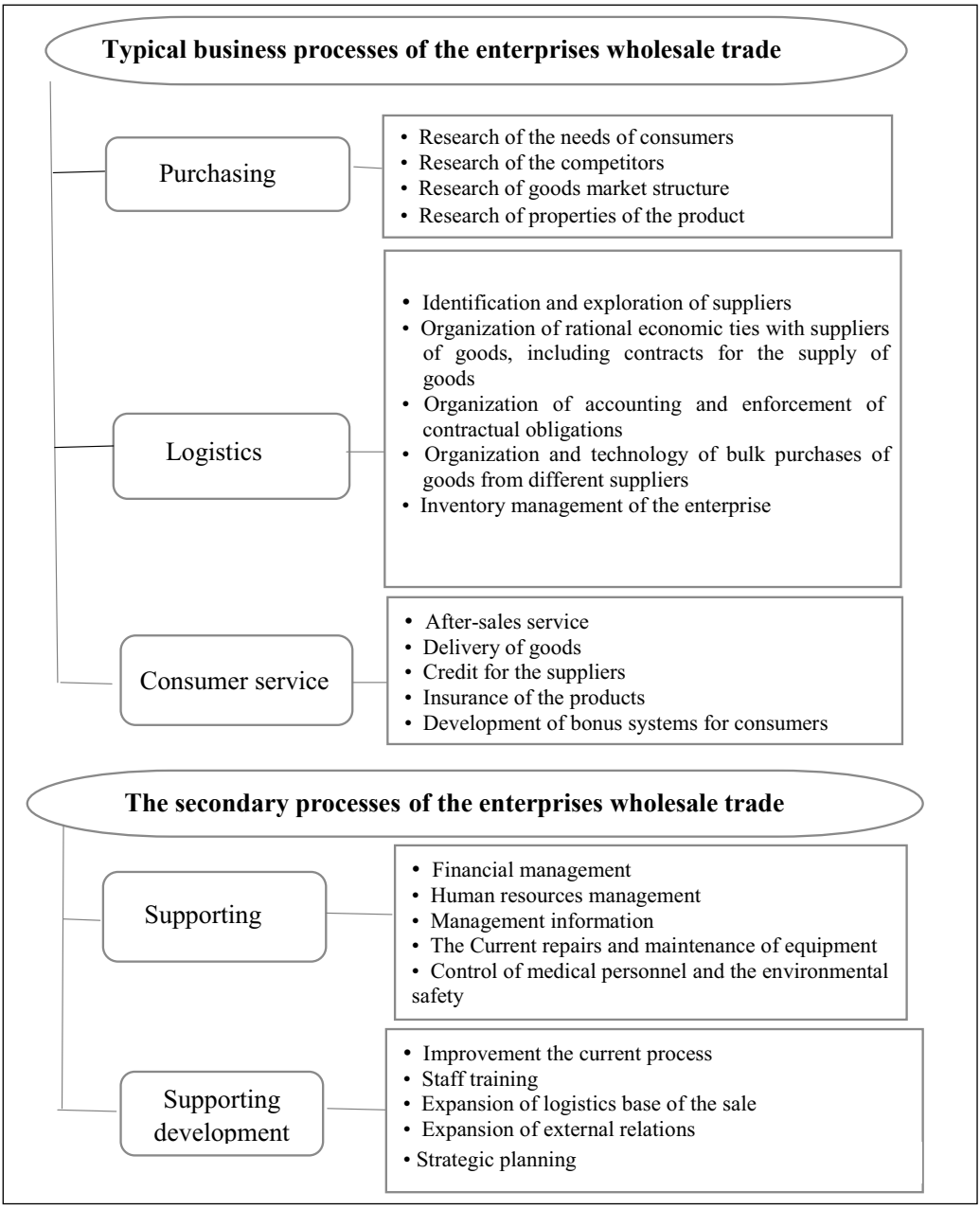
Source: own work.

The business model is formed based on the objectives of the enterprise and is determined by the composition of it's basic components of the business model (cross business processes), which together constitute a methodological platform:

- Business functions that describe "WHAT" business does.
- Business processes that describe "HOW" the company performs its business function.
- Organizational structure that defines "WHERE" business functions are performed and business processes.
- Phases that determine "WHEN" (in order) should be implemented certain business functions;
- Roles that determine "WHO" executes business processes.
- Rules that definine the relationship between the "what, how, where, when and who".

In Ukraine a clear classification of business processes on the enterprises wholesale trade does not exist, but in many publications in general can identify basic business processes, the composition which is possible only in the future in terms of the enterprise as a whole, and subprocesses that can be further decomposition (Fig. 3).

Figure 3. General business processes wholesalers




Source: own work.

For optimization of business processes offer wholesale calculate these Figures (Tab. 1).

Table 1. Basic methods of estimation of business process wholesale trade

| **Basic business processes** | **Basic indicators for assessing business processes** | **The results and methods of calculation** |
|---|---|---|
| *Purchase goods:*<br>1) identification of the depand for goods<br>2) market research procurement<br>3) choice of suppliers<br>4) control of supplies<br>5) quality control of goods<br>6) compliance with the term of goods purchase | 1) the volume of material costs, thousand.UAH<br>2) the frequency of deliveries, days<br>3) ratio of material resources%<br>4) coefficient of reliability supply<br>5) sthe volume of shipments, ths. UAH.<br>6) the number of suppliers persons<br>7) the cost of supply, thousand. UAH.<br>8) the number of non carried out supply contracts, pcs | Prediction and determination of needs for goods and resources<br>*Methods:*<br>1) forecast model of market conditions and pricing of goods<br>2) optimization model of order portfolio range of products<br>3) statistical indicators of purchasing goods<br>4) econometric methods |
| *Safekeeping and inventory management:*<br>1) determination of optimum the size of inventory<br>2) inventory management, taking into account specificity of a particular company<br>3) control over the state of inventory of specific product lines<br>4) provision and maintenance of inventory of goods in the enterprise<br>5) storage of goods<br>6) optimization movement of material resources for warehouse<br>7) optimization methods and types of goods storage<br>8) the calculation of the optimal size of goods storage<br>9) planning and optimization of warehousing inventory | 1) Inventory, thousand. UAH<br>2) inventory turnover coefficient,%<br>3) the costs of warehousing, ths. UAH<br>4) The term of storage, days<br>4) warehouse turnover, days | Formation of the norms of the required reserve, system of restocking warehouses according to the rules defined at the enterprise, rational receiving and storage of inventory in the warehouse, preparing them for consumption of the enterprise.<br>*Methods:*<br>1) the decision-making model on lease or building of warehouse<br>2) the choise of optimal placement of warehouses<br>3) optimization of the movement of goods in a warehouse<br>4) the model of optimization oftypes of storage<br>5) optimization of the size of inventory of goods and placement of goods in a warehouse<br>6) inventory management model<br>7) model of insurance inventory<br>8) selection of the system controlling the stocks for a specific enterprise |

| | | |
|---|---|---|
| *The organization of sales of goods and customer service:*<br>1) planning the process of sale<br>2) choice of packaging and assembly<br>3) organization and delivery control of transporting<br>4) The choice of material flow distribution<br>5) provision of logistics services<br>6) minimization of cost of sales<br>7) marketing solutions for customer service | 1) cost of sales, thousand<br>2) Delivery reliability,%<br>3) the number of complaints (returns)%<br>4) the level of quality of delivery,%<br>5) The total number of orders received, pcs.<br>6) the accupate forecasting of demand<br>7) providing discounts, %<br>8) the elasticity of sales, %<br>9) uniformity supply, %<br>10) market share,%<br>11) sales revenue, ths. UAN<br>12) profitability of sales, %<br>13) the delay of delivery, days/hours<br>14) increase rate of sales of goods<br>15) the number of consumers, persons<br>16) the volume of orders, thous UAN<br>17) share of expenditure on specific sales orders, %<br>18) the volume of outstanding supply, %<br>19) the number of inadequate supply volume unit | |

Source: own work.

For such a control it is necessary that all basic business processes of the functional units were defined and described, responsibility and resources identified, the processes which organize the management named. The definition of the interactions between both the processes components and between processes is required. It is possible to describe a business process as follows: to determine the owner of the business process; to define the boundaries of the business process (the boundaries of responsibility and authority of the owner of the process to manage the process; to identify customers and outputs of the business process; to identify suppliers and inputs of the business process; to identify resources needed to execute the business process (available to the owner of the process); to describe the technology of execution of a business process (e.g., use of graphical schemes in the selected notations); to develop indicators by which to assess the business process and it results and customer satisfaction of the business process; to describe the work of the owner on the analysis and improvement of the business process, and reporting to the top management.

## 4. Problems of development of wholesale trade in Ukraine

Wholesale operations that take place in Ukraine at the present stage are carried out mainly in the framework of trade-intermediary activity in the field of movement of goods for logistical purposes. They are not aimed at improving the efficiency of trade. At the same time, the disu-

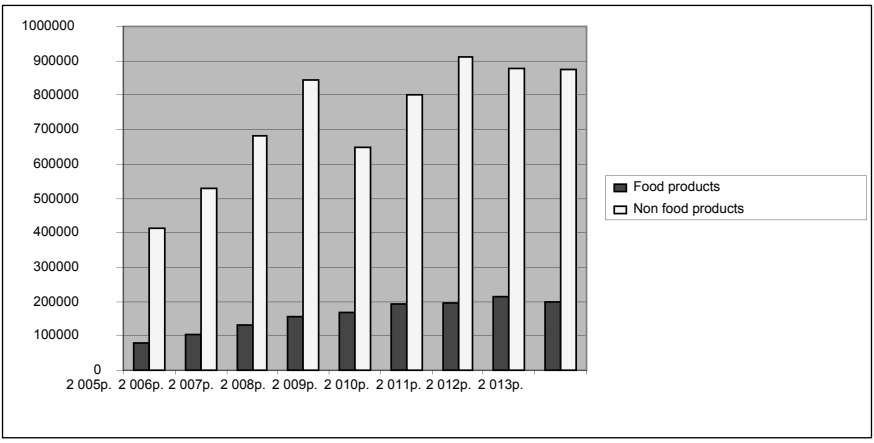
nity of retailers leads to significant costs associated with establishing economic ties with a large number of industrial enterprises, as well as with the procurement of goods in small quantities in geographically remote areas. For domestic wholesale trade inherent monotony of wholesale intermediaries with their functional purpose the organizational-legal forms of management, technology, work that does not create an effective competitive environment.

Businesses that intend to provide wholesale and intermediary services according to their specialization should have properly equipped storage facilities, vehicles, working capital, human resources and more. Unfortunately, the situation in Ukraine has led to imbalance in the national internal market and economic exchange between the two territories.

Thus, according to the State statistics Committee of Ukraine, as of 1 January 2013 in Ukraine there were 57.5 thousand enterprises, the main economic activity of which was wholesale. Under modern conditions the most widespread affiliate wholesale enterprises are based on collective ownership. Figure 4 shows the dynamics of the wholesale trade for 2005-2013 (Revutskaya, 2002), the Turnover of wholesale trade enterprises in 2012 amounted to 1,093,290.8 million UAH that is 18,537.6 million more than in 2013 Only in Kiev the wholesale trade turnover (without VAT and excise) of wholesalers registered in Kyiv, January-June 2014 amounted 181,511.0 m. In the structure of the wholesale trade enterprises in comparison with January in June 2013 the share of sales of non-food products decreased by 0.9 V. p. and amounted to 82.9% in January–June 2014. For food products it accounted for 17.1% of the total wholesale trade turnover in January–June 2014.

The proportion of wholesale goods produced in Ukraine compared to the corresponding period of the previous year decreased by 1.5 V. p. and 33.8% in January–June 2014. The share of sales of food products in domestic food industry amounted to 58.0%, and the proportion of sales of non-food products by Ukrainian manufacturer of 28.8% (for January–June 2013 accordingly 59.5 per cent and 30.6 per cent). In terms of inventories of wholesalers in Kyiv on 1 July 2014 there was 42,513. 4 mn. against 40,992.5 mn. on 1 July 2013. The total volume of stocks of non-food items took 87.2%, the rest was food (*Publication of Documents...*).

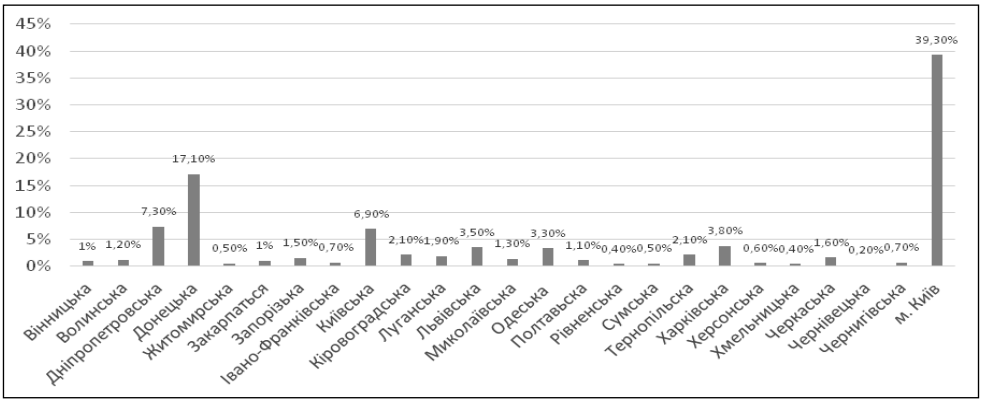
Figure 4. Dynamics of wholesale turnover in 2005-2013, million UAH




Source: own work.

Despecialisation of many wholesale businesses, instability in relationships with suppliers of goods, lack of storage Foundation led to the deterioration of the quality of service for wholesale customers. Extremely unbalanced in Ukraine is the sphere of wholesale trade in the regional aspect. Regional disparities in the wholesale trade turnover and the number of wholesalers are much more significant than the differences in economic development of regions. The largest volume of wholesale trade turnover accounts for Kyiv – 39.3%, Dnepropetrovsk region is 7.3%, Kyiv region is 6.9%. The lowest – Chernivtsi – 0.2%.

Figure 5. Structure of wholesale turnover for the first half 2014 by regions of Ukraine,%*




* The state Statistics Service of Ukraine: http://ukrstat.org/uk/druk/publicat/kat_u/publtorg_u.htm#

Source: own work.

In Ukraine there is a paradoxical situation in which a large wholesale company for various reasons has a worse competitive position than the small ones. Therefore, they reduce the volume of purchases, narrow product range; curtail economic ties, rent, and a portion of its warehouse space thus losing ground in those areas of business activity which should provide them with a key competitive advantage.

Due to the weakening of the role of the wholesale trade, there was a transition of many retail businesses mainly on direct contacts with producers. Therefore, they face the need for your own warehouse or rent them from other businesses, including wholesale. It acquired large scales and led to the loss of wholesale enterprises and their positions in the commodity market and reduced the volume of wholesale trade. Inventories increased as a result of a significant reduction of volumes in warehouses of wholesale trade enterprises. Producers and large retailers, such as super – and hypermarkets, are formed on the basis of which the retail network with its own Central distribution warehouses began to perform the functions of wholesale trade enterprises. It is more common for wholesale sales of various retailers, retail and wholesale markets and other entities that do not have proper conditions and professional knowledge to perform these functions.

## 5. Conclusion

Generally to negative processes of formation of the business development model wholesale Commerce we refer:

1) The increasing number of wholesale middlemen is not accompanied by adequate qualitative changes. Moreover, wholesale trade, including consumer goods through wholesale link, has significantly lost its position. Businesses give substantial preference to goods for industrial purposes, therefore a faster pace increases, the number of such intermediaries and their volume of trade.
2) At present, domestic wholesale link does not have sufficient modern equipped warehouses with the latest technology to warehousing of goods. The industrial space demand significantly exceeds supply, especially in large cities, where there is a better situation with their socio-economic development.
3) Wholesale intermediaries that do not have their own storage facilities, and today in Ukraine the vast majority objectively can provide full customer service at the appropriate level. They focus on doing exceptionally mediation, although acquire, as a rule, ownership of the goods.
4) There is a significant territorial uneven development of wholesale. More than 60% of wholesale intermediaries, including those that deal with the production and technical products, located in 6 regions – the city of Kyiv and Dnipropetrovsk, Kharkiv, Zaporizhia and Odessa region. In the total volume of wholesale trade account for almost 80%. In practice, over the years of these causes has largely been the deregulation of the national internal market and economic exchange between the territories.
5) Most of the mediators are not able to professionally perform their functions, so they resell the goods to other wholesale intermediaries. This increases linkage of goods and the cost of its implementation. Moreover, small wholesale intermediaries are not able to offer the stores a wide selection of quality products and maintain product stability; they cannot guarantee timely delivery of goods because they do not have conditions for the accumulation and proper storage of goods. Such wholesale intermediaries cannot be equal partners in the relationship of commodity producers and contribute to the development of domestic production. They largely fill the market with goods of the group of second-hand and other cheap low quality goods originating from other countries.
6) In recent years the structure of the wholesale trade has significantly deformed. First of all, the percentage of consumer goods of domestic production significantly decreased. The share of these goods in the total volume of wholesale trade is much lower than in retail trade turnover, in particular enterprises – legal entities. The analysis shows that among non-food items too low proportion of goods is complex products (clothes, shoes, fabrics) that need careful assortment on various consumer characteristics on the wholesalers. The implementation of technically complex products (primarily Russian) cultural and economic purposes is neglected, the production of which is characterized by a large degree of concentration, and thus a distance from consumers. Far from optimality and the structure of trade in food products – half its volume falls on alcoholic beverages, tobacco products, confectionery, sugar, fish, seafood and canned fish.

The reform of wholesale in Ukraine it is important to study, synthesize and critical think through experience of the organization of wholesale trade in the countries with developed market economies. The trend of consolidation and business combinations that occurs in the retail

and manufacturing sector, as we know from experience that in turn requires a corresponding change in wholesale. Developed economies create incentives for major market participants, at the same time, the desire to capture a certain market share and the lack of financial stability in small and medium enterprises contribute to their Association. The globalization of the world economy makes this trend defining. We should pay attention to foreign experience concerning the development trends of wholesale enterprises by ownership and organizational-legal forms of management. The main ones, on these grounds, are corporate enterprises that are the largest. The experience of countries with developed market economies shows that wholesale trade is carried out by various intermediaries (by function, product specialization, area of activity, forms of sales and customer service, etc.). This provides an opportunity for sellers to manufacture goods and for wholesale buyers to choose them. Wholesale businesses, in turn, have their own market niche and competitive advantage.

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Chapter 16

# Impact of Sales Promotion Tools on Conusmers' Impulse Buying Behaviour

*Stefan Alimpić*

## 1. Introduction

The concept of sales promotion, as a key component of the promotional mix[1], involves a series of stimulus funds (mostly short-term), designed to stimulate quicker and/or greater purchase of a particular products or services by consumers or trade (Blattberg, Neslin, 1990, pp. 54-70; Laroche et. al., 2003, pp. 513-522; Palmer, 2004; Oyedapo et al., 2012, pp. 128-131). In other words, compared to the other components, sales promotion usually operates on a shorter time line, uses a more rational appeal, returns a tangible or real value, fosters an immediate sale, and contributes highly to profitability.

Sales promotion can be routed to different members of the distribution channel. Precisely, it includes *activities of sales promotion both to consumers and trade*, as well as *activities to improve business operations and sales force* (Kotler, Keller, 2006, pp. 585-591). However, although each of the types of sales promotion deserves special attention, *subject of this manuscript* will be sales promotion directed at consumers. In other words, the emphasis in this manuscript will be placed on a variety of short-term promotional methods, which are designed to have an influence on consumers' buying behaviour, either planned or unplanned.

Hence when we talk about *the purpose of research*, this study aims to evaluate the influence of these methods of sales promotion on *consumers' impulse buying behaviour*. This concept involves the purchase that is made by the consumer without much thinking, i.e., without a prior plan. In other words, impulse buying is in fact making a decision on the spur of the moment ("on-the-spot") or it may be an unplanned decision to buy, made just before a purchase. Precisely, it is about sudden and immediate purchase. Research findings suggest that emotions and feelings play a decisive role in purchasing, triggered by seeing the product or upon exposure to a stimulus (Verma, Verma, 2012, pp. 1-5). Items bought on impulse can be anything, a new product, samples or well-established products at surprising low prices.

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[1] Other components of the promotional mix, beside sales promotion, are: advertising, publicity, sponsorship, personal selling, direct marketing and internet marketing (Jober, Fahy, 2006);

## 2. Literature review

*Sales promotion directed at consumers* refers to the incentives that are offered directly to consumers of a certain company or its potential consumers, and with the intention to speed up their's decision-making process on the purchase of the company's products (Moriarty et al., 2012, p. 546; Palmer, 2004). Precisely, it is about different short-term promotional methods that add value to products (either by reducing cost or adding benefits) and thus represent an unambiguous incentive for the purchase of these products (Du Plessis et al., 2010, p. 228). In other words, these methods are used to encourage certain responses in consumers' buying behaviour, such as: *brand switching* (purchase of competing products), *purchase acceleration* (the purchase ahead of schedule, i.e., the unplanned purchase), *stockpiling* (the purchase of large quantities ahead of schedule), *product trial* (trial of products that have not been purchased so far) and *spending more* (spending more money than planned) (Shi et al., 2005, pp. 467-486).

Because of all of the above, the continuation of this manuscript will include a brief overview of basic methods of sales promotion directed at consumers.

### 2.1. Discounts

Discounts are the most commonly used method of sales promotion. This method gives the customer a temporary price reduction (monetary savings) and thereby immediate value, so therefore represents an unambiguous stimulus for purchasing (Smith, Sinha, 2000, pp. 83-92; Percy, et al., 2001; Jobber, Fahy, 2006, pp. 245-250). According to the surveys (Blackwell et al., 2001; Gilbert, Jackaria, 2002, pp. 315-322; Osman, Chan Yin Fah, 2011, pp. 78-88; Neha, Manoj, 2013, pp. 10-14) only discounts have a significant impact on the consumers' buying behaviour and they are particularly effective in encouraging purchase acceleration and product trial (especially in the case of new or redesigned products). This will indirectly attract new consumers who have never tried that product, as well as those consumers who have purchased a competitive product. These results were partially confirmed by researches Shi et al. (2005, pp. 467-486) and Obeid (2014, pp. 28-31), according to which discounts are the most effective in inducing purchase acceleration, stockpiling, spending more and attracting competitive buyers.

### 2.2. Bonus packs

Bonus packs provide additional value by giving customers an additional quantity at the same price, but in improved packaging (Yin, Jin-Song, 2014, pp. 1293-1302). The advantage of this method is the fact that consumers will be easily convinced to make a purchase of certain products, because there is no extra cost (Smith, Sinha, 2000, pp. 83-92). According to Shi et al. (2005, pp. 467-486) and Farrag (2010) bonus packs are the most effective in inducing stockpiling and purchase acceleration. Also, this method is suitable for attracting competitive consumers (Mittal, Sethi, 2011, pp. 165-182; Osman, Chan Yin Fah, 2011, pp. 78-88; Obeid, 2014, pp. 28-31).

### 2.3. Free samples (freebies)

They represent a small amounts of product, which are offered to costumers for free, i.e., at no cost. Free samples are useful in inducing purchase acceleration (Liao et al., 2009, pp. 274-284; Osman, Chan Yin Fah, 2011, pp. 78-88). Also, this method is useful to attract competitive buyers. Shimp (2003) in his study found that free samples have an impact on the consumers' buying behaviour, i.e., they contribute to increase of purchase, while researches Gilbert and Jackaria (2002, pp. 315-322) and Osman and Chan Yin Fah (2011, pp. 78-88) showed opposite result.

### 2.4. Premiums

It is about the offer of merchandise, mainly free as a gift or at very reduced prices, with aims of encouraging purchase of a certain product (both for existing and for competetive consumers) and maintaining market share (d'Astous, Landreville, 2002; Jobber, Fahy, 2006, pp. 245-250; Kotler, Keller, 2006, pp. 585-591). Also premiums are used to stimulate the more often purchases or purchases that are larger than regular ones (Rotimosho, 2003; Obeid, 2014, pp. 28-31). In addition, they can also be used for testing new products or for creating loyal costumers. According to previous research results, premiums are becoming increasingly important method of sales promotion (Raghubir, 2004, pp. 181-185; Banerjee, 2009, pp. 120-131; Palazo´n, Delgado, 2009, pp. 1108-1129).

### 2.5. Coupons

Coupons are the oldest and one of the most commonly used methods of sales promotion. According to Engel et al. (1994, p. 348) coupon is printed promotional tools, which entitles the consumer to achieve certain savings when purchasing the product that is indicated on that coupon. This method is usually less effective than discounts in raising the initial sale, because it does not provide any immediate savings and attracts only existing customers. Precisely, according to the survey Shi et al. (2005, pp. 467-486) coupons are generally only effective in encouraging consumers on stockpiling and purchase acceleration. This is supported by following researches: Gilbert and Jackaria (2002, pp. 315-322); Ndubisi and Chew (2009, pp. 28-40); Osman and Chan Yin Fah (2011, pp. 78-88) and Rizwan et al. (2013, pp. 36-49), according to which coupons do not have a significant influence on increasing purchase by customers, i.e., consumers see them as the most inefficient method of sales promotion.

### 2.6. Awards

They are designed to provoke the attention of potential customers, especially those who have never used certain product. There are three main types of awards: competitions, lotteries and sweepstakes (Jobber, Fahy, 2006, pp. 245-250). *Competitions* require from participants to demonstrate a certain degree of skills and knowledge, beside proof of purchase. *Lotteries* do not require any skills or knowledge, but their outcome depends solely on luck. *Sweepstakes* are offered to customers each time when they buy something, and if they participate in them, they can win

awards (Kotler, Keller, 2006, pp. 585-591). According to researches Gedenk et al. (2004); Shi et al. (2005, pp. 467-486) and Obeid (2014, pp. 28-31), awards are relatively ineffective in creating any kind of consumers' responses.

### 2.7. Loyalty programs (frequent-buyer programs)

Promotions that offer consumers a reward, such as price reduction or free products, for performing frequent and more intense purchases or other activities are called loyalty programs (Kotler, Keller, 2006, pp. 585-591). According to Arunmuhil and Arumugam (2013, pp. 73-92) consumers do not have a propensity to make more purchases from a particular store just because they possess loyalty card of the store.

### 2.8. Demonstrations and product trials

*Product demonstrations* include displaying of products to interested people at the point of sale, with the aim of provoking impulse buying. Precisely, it is about displaying expensive products which cannot be shared as free samples, yet require an explanation because of their complexity (Kotler, Keller, 2006, pp. 585-591). According to Shi et al. (2005, pp. 467-486), this method is mostly effective in encouraging consumers to test products. On the other hand, *product trial* involves calling of potential customers to try for free the new, expensive product (which they have not been used before), with the hope that they will buy it later.

## 3. Methodology

*The basic method of research* was an anonymous survey, which was completed online by respondents, during April 2015. The survey was conducted on a *simple sample* of 200 elementary units. Out of this number, 40.5% of respondents were male and 59.5% female; age of respondents ranged from 21 up to 84 years; 75% of respondents have university degree, 17.5% have secondary education, 7% have college degree and only one have primary education. Of the total number of respondents, 56% of them said that they make purchases at supermarkets once a week, 20.5% every day, 13% once in two weeks, 6.5% once a month, 2.5% once in three weeks, while the rest less than once a month. From all this it can be concluded that the sample is representative. When we talk about *measuring instrument*, the first part of the survey included five statements which were defined for each of the considered methods of sales promotion and which reflect respondents' behavioral response to each of observed methods. In other words, this part of the survey covered a total of 40 statements. The second part of the survey included seven statements related to consumers' impulse buying behavior (Tab. 1). Respondents expressed the level of agreement with these statements on a five-point Likert scale (1 – strongly disagree, 2 – disagree, 3 – partially agree, 4 – agree, 5 – strongly agree). These statements were selected based on a review of relevant literature in the field of sales promotion directed at consumers and impulse buying (Gilbert, Jackaria, 2002, pp. 315-322; Shi et al., 2005, pp. 467-486; Osman, Chan Yin Fah, 2011, pp. 78-88; Obeid, 2014, pp. 28-31; Tinne, 2011, pp. 209-220; Banerjee, Saha, 2012, pp. 1-21; Rittipant et al., 2013). All collected data were stored in the SPSS (Statistical Package for the Social Science

for Windows, version 19.0) database. Analysis of statistical data was done by using this software, i.e., by using two *statistical methods (factor analysis and regression analysis)*. It is important to emphasize that for measuring the reliability level of the obtained factors and internal consistency of statements, *reliability analysis*, i.e. *Cronbach alpha's coefficient* was used. To determine the statistical relevance in this study, the level of trust of $\alpha$=0.05 was used.

Table 1. The statements about impulse buying

| |
|---|
| I often buy products spontaneously, without thinking |
| If I see something that I think I need, I buy it even though I went shopping for other purposes |
| I buy products according to how I feel at a given moment |
| I go shopping to change my mood |
| I feel a sense of excitement when I make an impulse purchase |
| I have difficulty controlling my urge to buy when I see a good offer |
| When I see a good deal, I tend to buy more than that I intended to buy |

## 4. Research results

### *4.1. Factor analysis*

Prior to the implementation of the factor analysis, the values of KMO test (KMO = 0.864) and Bartlett's test ($p = 0.000$) confirmed that there are reasonable conditions for its application (KMO $> 0.5$ and $p < 0.05$). As a method of factor analysis we used the principal component analysis, and due to a clearer interpretation of factors Varimax rotation was used.

The results of the factor analysis show that statements were grouped around nine separated factors. The first factor "demonstrations and product trials" explains 32.904% of the variance. This factor includes all five statements related to demonstrations and product trials. The second factor "awards", which includes all five statements related to awards, explains 10.787% of the variance. The third factor "coupons" explains 6.800% of the variance and includes all statements related to coupons. The fourth factor "free samples" refers to all statements related to free samples and one statement related to product trial. This factor explains 6.502% of the variance. The fifth factor "premiums" explains 5.800% of the variance and includes all five statements related to premiums. The sixth factor "loyalty cards" refers to statements related to loyalty cards. This factor explains 4.587% of the variance. The seventh factor "discounts" explains 4.126% of the variance and refers to statements related to discounts. The eighth factor "bonus packs" includes statements related to bonus packs. This factor explains 3.642% of the variance. Finally, the ninth factor "brand switching and product trial" explains 3.253% of the variance and refers to statements related to the bonus packs, discounts and loyalty cards. Otherwise, all nine factors explain 78.403% of the total variance.

All nine factors have a high level of reliability. As it can be seen from Table 2, Cronbach alpha's coefficient values are higher than the minimum threshold of reliability of 0.7, recommended by Nunnally (1978). Because of that, it can be concluded that there is an internal approval between statements which were grouped around each single factors.

Table 2. The results of factor analysis

| Statements | Factors | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| **Factor 1**: *Demonstrations and product trials* | | | | | | | | | |
| Spending more money | 0.872 | | | | | | | | |
| Brand switching | 0.859 | | | | | | | | |
| Stockpiling | 0.854 | | | | | | | | |
| Purchase acceleration | 0.831 | | | | | | | | |
| Product trial | 0.786 | | | | | | | | |
| **Factor 2**: *Awards* | | | | | | | | | |
| Spending more money | | 0.872 | | | | | | | |
| Stockpiling | | 0.845 | | | | | | | |
| Purchase acceleration | | 0.804 | | | | | | | |
| Brand switching | | 0.795 | | | | | | | |
| Product trial | | 0.794 | | | | | | | |
| **Factor 3**: *Coupons* | | | | | | | | | |
| Purchase acceleration | | | 0.905 | | | | | | |
| Brand switching | | | 0.842 | | | | | | |
| Stockpiling | | | 0.821 | | | | | | |
| Product trial | | | 0.811 | | | | | | |
| Spending more money | | | 0.795 | | | | | | |
| **Factor 4**: *Free samples* | | | | | | | | | |
| Purchase acceleration | | | | 0.865 | | | | | |
| Stockpiling | | | | 0.834 | | | | | |
| Spending more money | | | | 0.802 | | | | | |
| Brand switching | | | | 0.787 | | | | | |
| Product trial | | | | 0.650 | | | | | |
| Product trial (bonus packs) | | | | 0.319 | | | | | |
| **Factor 5**: *Premiums* | | | | | | | | | |
| Stockpiling | | | | | 0.827 | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Purchase acceleration | | | | | 0.820 | | | | |
| Brand switching | | | | | 0.775 | | | | |
| Product trial | | | | | 0.740 | | | | |
| Spending more money | | | | | 0.700 | | | | |
| **Faktor 6**: *Loyalty cards* | | | | | | | | | |
| Purchase acceleration | | | | | | 0.861 | | | |
| Stockpiling | | | | | | 0.832 | | | |
| Spending more money | | | | | | 0.755 | | | |
| Brand switching | | | | | | 0.719 | | | |
| Product trial | | | | | | 0.704 | | | |
| **Factor 7**: *Discounts* | | | | | | | | | |
| Purchase acceleration | | | | | | | 0.821 | | |
| Spending more money | | | | | | | 0.775 | | |
| Stockpiling | | | | | | | 0.760 | | |
| Brand switching | | | | | | | 0.651 | | |
| Product trial | | | | | | | 0.570 | | |
| **Factor 8**: *Bonus packs* | | | | | | | | | |
| Stockpiling | | | | | | | | 0.840 | |
| Purchase acceleration | | | | | | | | 0.779 | |
| Spending more money | | | | | | | | 0.702 | |
| Brand switching | | | | | | | | 0.405 | |
| Product trial | | | | | | | | 0.336 | |
| **Factor 9**: *Brand switching and product trial* | | | | | | | | | |
| Brand switching (bonus packs) | | | | | | | | | 0.631 |
| Product trial (bonus packs) | | | | | | | | | 0.619 |
| Product trial (discounts) | | | | | | | | | 0.502 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Brand switching (discounts) | | | | | | | | | 0437 |
| Product trial (loyalty cards) | | | | | | | | | 0.314 |
| Brand switching (loyalty cards) | | | | | | | | | 0.303 |
| **Eigenvalue** | 13.162 | 4.315 | 2.720 | 2.601 | 2.320 | 1.835 | 1.651 | 1.457 | 1.301 |
| **Percentage of explained variance** | 32.904 | 10.787 | 6.800 | 6.502 | 5.800 | 4.587 | 4.126 | 3.642 | 3.253 |
| **Alpha** | 0.924 | 0.935 | 0.934 | 0.902 | 0.917 | 0.926 | 0.833 | 0.827 | 0.824 |

## 4.2. Regression analysis

Regression analysis was conducted to show whether there is a linear relationship between the variable "impulse buying" (dependent variable) and the nine obtained factors (factor scores – independent variable). The dependent variable was created by calculating the overall score on the scales, which were related to impulse buying.

However, prior to conducting this analysis, we analyzed whether the assumptions of normality, linearity and equality of variance were satisfied. Analysis showed that there were no significant violations in assumptions. The issue of multicollinearity was tested through values of variance inflation factor (VIF). Given that in all cases, VIF values were equal to 1, multicollinearity did not represent a significant issue in the implemented study.

The coefficient of determination $R^2$ is 0.326, which indicates that 32.6% of variability of the dependent variable is explained by the obtained nine factors. Based on Snedecor's F random variable ($F = 10.194$) and achieved significance level ($p = 0.000$), we can conclude that there is a statistically significant regression of influence of observed factors on impulse buying. This is confirmed by Table 3, in which are represented values of standardized coefficients β, t-statistics and achieved significance levels (column Sig.). Looking at the column of β, we can see that the largest (absolute) value of this coefficient (0.376) is recorded for the seventh factor (discounts). This means that this factor (variable) individually contributes the most to explaining the dependent variable, when we subtract variance explained by all other factors in the model. The second factor that individually contributes the most to explaining the dependent variable is demonstrations and product trials. It is important to note that from nine factors, only two factors (the third and fifth) didn't have a statistically significant influence on the increase of purchase by consumers ($p > 0.05$). For all other factors, their statistically significant influence on the dependent variable was confirmed. The greatest impact was recorded for the first and seventh factor ($p = 0.000$)[2].

[2] Checking the validity of the assumption of multicollinearity and evaluation of each independent variable were carried out according to: Pallant, J. (2011), *SPSS priručnik za preživljavanje* (prevod 4. izdanja), Mikro knjiga, Beograd, p. 160, 164.

Table 3. The results of regression analysis

| Variables | β | t | Sig. |
|---|---|---|---|
| Factor 1. | 0.267 | 4.474 | 0.000** |
| Factor 2. | 0.144 | 2.414 | 0.017* |
| Factor 3. | -0.028 | -0.466 | 0.642 |
| Factor 4. | 0.146 | 2.446 | 0.015* |
| Factor 5. | 0.038 | 0.646 | 0.519 |
| Factor 6. | 0.152 | 2.547 | 0.012* |
| Factor 7. | 0.376 | 6.309 | 0.000** |
| Factor 8. | 0.159 | 2.676 | 0.008** |
| Faktor 9. | 0.144 | 2.416 | 0.017* |

Remarks: $p < 0.01$ (**), $p < 0.05$ (*); $R^2 = 0.326$; $F = 10.194^{**}$

## 5. Conclusion

This manuscript investigated the influence of sales promotion tools on consumers' impulse buying behavior. In other words, the main goal of this manuscript was to show whether there is a linear relationship between the variable "impulse buying" and obtained factors from factor analysis.

Hence based on conducted regression analysis, we came to the conclusion that there is a statistically significant influence of certain methods of sales promotion, i.e. isolated factors, on impulse buying. Factor that contributes the most to explaining the dependent variable, when we subtract variance explained by all other factors (variables) in the model, are discounts. On the other hand, coupons are factor that contributes the least to explaining the dependent variable. In this way, the research results by Osman (2011, pp. 78-88); Tinne (2011, pp. 209-220); Banerjee and Saha (2012, pp. 1-21); Rittipant et al. (2013) and Nagadeepa et al. (2015, pp. 116-124) were confirmed.

When we talk about the importance of this manuscript, it will certainly have a contribution for both marketers and traders, as well as for consumers and futher resaerches. Precisely, marketers and traders will be able to understand consumers' impulse buying behavior and thus to use the most effective methods of sales promotion for their attraction. In this way, marketers and traders will have the opportunity to improve their competitive position, minimize costs and make a profit. From consumer perspective, this study will reveal the consumer's attitude towards sales promotion and thereby will raise the consumers' awareness about their impulse behavior, which is influenced by different sales promotion tools. Finally, this manuscript will be of benefit also for other researchers, because it will provide them with adequate guidelines and recommendations for further researches on the same topic.

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Chapter 17

# Financial Security Aspects of Going Concern in the Production Sector[1]

*Jarosław Kaczmarek*

## 1. Introduction

From the microeconomic perspective, crises can be viewed in different ways, depending on various schools of and trends in the science of companies. Generally, crises result from the unplanned events that disrupt or threaten normal business operations.They can be seen as the occurrence of negative changes in business activities and poor performance which, importantly, affect all company operations, posing a threat to going concern. An analysis of crises is based on the assumption that they represent a phase in companies' life cycles. C.K. Prahalad and G. Hamel refer to crisis as a turning point between two phases (in terms of quality) of corporate expansion, and J. Argenti, and O.P. Kharbanda and E.A. Stallworthy define major types of corporate lifecycle stages. L.E. Greiner identifies development stages and the stages of crises that follow (Argenti, 1976; Kharbanda, Stallworthy, 1985; Greiner, 1972, pp. 37-46).

Companies vary in terms of their exposure and vulnerability to threats. C.F. Smart, W.A. Thomson and I. Vertinsky propose a model which describes companies' vulnerability to crisis. The explanatory variables include three groups of factors which cause crisis, while the dependent variable is described by vulnerability to crisis combined with market efficiency (Smart et al., 1978, pp. 46-48). In the case of Polish economic conditions, the level of exposure and vulnerability is very high – both in organizational and financial dimensions. It leads to the co-called domino effect (Mączyńska, 2011, p. 14).

The determinants of crises are defined by authors as various types of factors originating from various sources. Undoubtedly, corporate crises are complex phenomena caused by a combination of several factors forming a sequence of cause-effect events and marking a distinct path of escalation if appropriate measures are not taken in due time. The factors which cause crises can be exogenic or endogenic in character. A number of authors (including J. Argenti, S. Slatter, D. Lovett, I.I. Mitroff, E.I. Altman and H. Albach) claim that endogenic factors are of key significance, especially poor management.

[1] The paper was financed with subsidies granted to the Faculty of Management of the Cracow University of Economics for maintaining the research capacity.

The symptoms of crisis occur as a result of external and internal factors which lead to crises and, in a similar manner, are different in character and do not occur separately from other symptoms. In most cases, the symptoms of crisis are defined as a company's failures which affect its general condition, especially in economic and financial areas. Corporate value is frequently referred to as a dependent variable in the context of symptoms.

With regard to theoretical and cognitive aspects, the paper focuses on corporate crises and their types, the reasons for their occurrence and the identification and quantification of the symptoms of the deterioration in companies' financial standing. The empirical research studies are to achieve the following objectives:

- measure and assess the level of security of Poland's production companies and the trends and dynamics of changes,
- determine the impact of correlations between financial security and the percentage of insolvency procedures,
- identify the characteristics of the analysed sample in terms of the stability and frequency of the movement of objects.

The assessment of financial security is based on a logistics regression model which reflects the likelihood of threat to going concern and the risk of business failure.

## 2. Early identification of threats

In their integrated company expansion model B. Quinn and K. Cameron note that the ability to counteract crises is as important as the ability to predict and prevent them (Quinn and Cameron, 1983). Therefore, companies must develop and implement solutions enabling them to diagnose the indications of crisis – so called Early Warning Systems (EWS). They are tools for optimising risk as part of quantitative risk management methods (Crocford, 1982, pp. 73-76).

EWS should be seen as one of the areas of assessing a company's economic and financial condition. Its objective is to reveal the symptoms of a deteriorating situation, but it does not identify any corrective measures. It is also justified to say that EWS in the context of its objectives should not be viewed as a bankruptcy prediction method.

In identifying threats, EWS makes use of a number of tools applied in technical, economic and financial analyses as well as statistical methods used in predicting financial threats, going concern issues and bankruptcy prediction. The identified measures quantify early warning signals, thus becoming threat predictors. According to H.I. Ansoff, such systems make use of three types of information: alarm signals, deviations from standards and weak signals (weakly structured) (Lam, 2003, pp. 84-85; Ansoff, 1985).

General trends in research studies indicate an increasingly complex and advanced character of analytical processes. A more significant role is played by statistical methods, which are commonly used and continuously developed. EWS methods are usually classified on the basis of the character of the analysed factors and the manner of formulating conclusions. The first criterion distinguishes quantitative, qualitative and mixed methods, while the second one – logical deductive and empirical inductive methods. According to C. Zavgren, the classification of methods is based on solutions which employ discriminant analysis (one- and multiple variable models) and conditional probability (multiple variable models) (Zavgren, 1983, pp. 1-33). Thus, it is the area exclusively represented by empirical inductive methods, commonly regarded to be appropriate ones.

The development of econometric modelling in the prediction of financial threats to corporate operations originates from the first works of W. Rosendal and P.J. Fitzpatrick – they developed a pair-based comparative analysis (a threatened vs non-threatened entity). C.L. Merwin applied the methods of profile analysis and arithmetic mean for groups of objects, while W.H. Beaver verified the usefulness of financial ratios in threat prediction. This area of research was also undertaken by P. Weibel, who proved that an increased number of explanatory variables did not lead to significantly better results in risk assessment.

The works of these authors are classified as those representing one-measure methods (so called dychotomic tests), while further research focused on the multi-measure threat prediction methods. The dominating methods include multi-measure discriminant analysis (E.I. Altman as the precursor), with a great contribution made by the logit model. It allows for detecting a financial threat or a threat to going concern and the risk of failure.

## 3. The measurement of corporate financial security

A multi-aspect, holistic understanding of an economy and its processes is reflected in the extensive research of the Polish economic transformation – a unique process in terms of systemic changes and related economic policies. In this approach an economy, understood in its broad sense, includes mutually interlinked elements which constitute a system of reforms – a cause-effect sequence.

A transformation process is characterised by a wide range of complex relationships which describe and affect an economy – their simultaneous occurrence creates a picture of a number of parallel transformations. The introduced changes aim to ensure effective and sustained economic growth, and the specific goals are as follows (Kaczmarek, 2012c, pp. 103-111):

- structural changes,
- increased competitiveness,
- restructuring and privatisation,
- improvements in and stabilisation of company finances.

The assessment of financial threat, going concern threat and bankruptcy prediction models offered by literatures – from the perspective of the objectives and scope of research into economic transformations – indicates the necessity of developing a new analytical model. In creating this model, apart from the use of innovative methods and tools, a different approach was adopted to the definition of the obtained result. It is defined as the extent of financial security and the activities aimed to counteract financial threats related to going concern and the possibility of business failures (Kaczmarek, 2012b, pp. 130-137). The objective of this change was to define a stimulant in the model for assessing the effects of the economic transformation. It provides a synthetic description of the financial condition of entities, groups of entities and economic mezo structures.

The logistic regression model was estimated for the needs of assessing the degree of financial security. This measure has two distinct characteristics:

- it allows for analysing differences in and dynamics of the financial condition of entities and groups of entities (components of the economic structure),
- it relativises the result of this analysis in relation to the threat of business failure.

The values of this measure range from 0% to 100%, with higher values indicating higher probability of maintaining financial security within the period of one year. It allows for a quantita-

tive description of changes to financial security in a dynamic approach as well as for comparisons of various types and groups of companies. The existing models offered in literatures do not have such characteristics. The values of the model's estimated efficiency measures confirm its high prediction potential, which qualifies the model for conducting empirical research (Kaczmarek, 2012a, pp. 136-149).

## 4. The scope and structure of court–filed bankruptcy cases in Poland

Failure/bankruptcy is a legal term for a company's crisis from the perspective of insolvency and recovery procedures in which insolvency (failure *sensu stricto*, bankruptcy filed in a court) is a key idea. In broad perspective, business failure is an economic phenomenon resulting from an entrepreneur's right to freely carry out business activities and the acceptance of business risk which can lead to the loss of foundations for independent corporate activities – a company's failure (failure *sensu largo*, economic distress). It can result from two types of factors (economic and financial), corresponding to the respective types of failure: economic distress and financial distress. Business failure as an economic condition is referred to by some authors as bankruptcy (to distinguish it from the Polish legal term), which makes it difficult to understand the concept in the context of international law. Moreover, the context of insolvency law is broader – it also includes recovery procedures.

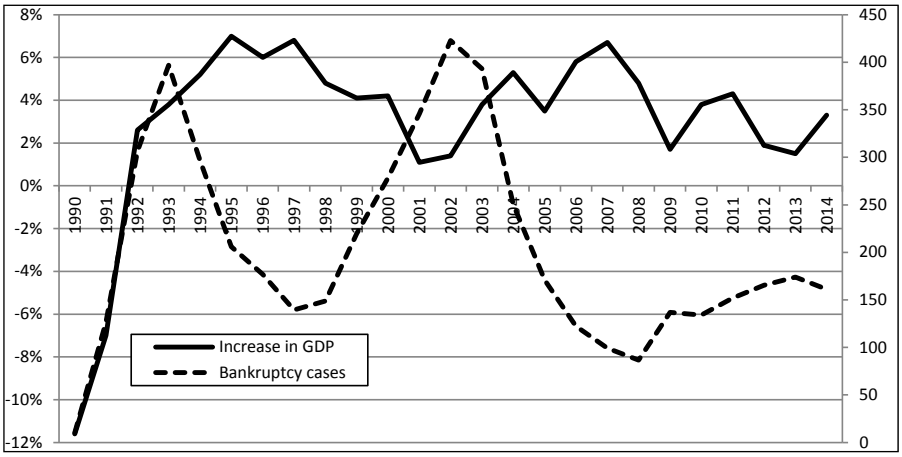
Business failures can also be considered in a macroeconomic dimension, as one of the symptoms of deteriorating macroeconomic conditions – it is seen as a barometer of economic soundness. The results of the conducted study point to a correlation between the current business cycle and the number of failing companies; this correlation is much stronger for advanced (stabilised) economies than for developing ones due to a number of economic distortions.

In Poland, the 1993-2008 period records the triple occurrence of the above phenomena (see Fig. 1): an increase in GDP – a decreased number of court-filed bankruptcy cases, a decrease in GDP – an increased number of bankruptcy cases (correlation coefficient $r = -0.71$, $P < 0.05$). The period of economic slowdown in Poland, caused by the 2008 global financial crisis, is characterised by the lower intensity of the previously observed phenomena.

The 2008 crisis started in the financial sector, which, by its very nature avoiding risk, transferred the crisis to the company sector by restricting its lending activities. It hindered corporate growth, while a decrease in consumer and mortgage loans reduced household demand. The beginning of 2008 was marked by the first indications of the deterioration in companies' condition in Poland. A considerable decrease was recorded in sales revenues, the value of assets and, in particular, investment activities. Companies' financial results were unsatisfactory, many of them running a deficit. The number of companies and their staff decreased.

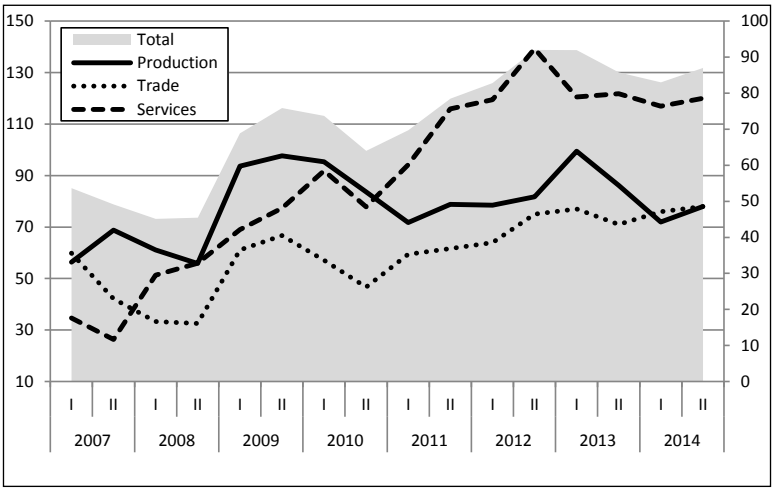
The number of business failures increased – this trend started in 2007, accelerating rapidly as of 2009 (see Fig. 2). The number of failure-related settlements increased, accompanied by an increasing number of company liquidations – restructuring processes were implemented in unfavourable business conditions.

Figure 1. GDP growth and percentage of court-filed bankruptcy cases in Poland in 1990-2014




Notes: GDP (%) (left axis); percentage of court-filed bankruptcy cases per 10,000 companies (right axis).
Source: author's own research based on: www.stat.gov.pl; www.coface.pl; www.pontinfo.com.pl.

Figure 2. The percentage of court-filed bankruptcy cases in Poland in 2007-2014




Notes: Per 10,000 companies, figures for six-month periods.
Source: same as Figure 1.

An analysis of the concentration values[2] of court-filed bankruptcies indicates that it is at above average levels in production companies up to the end of 2010, while trading companies record lower than average values in the entire analysed period. Service companies are characterised by a steady increase, reaching above average levels as of 2009.

[2] This measure is a relative assessment of the concentration of failing companies in a specific group of entities in relation to the total number of entities – members of the analysed group, and in relation to all companies in the national economy. Values greater than one indicate higher than average concentrations in a given group.

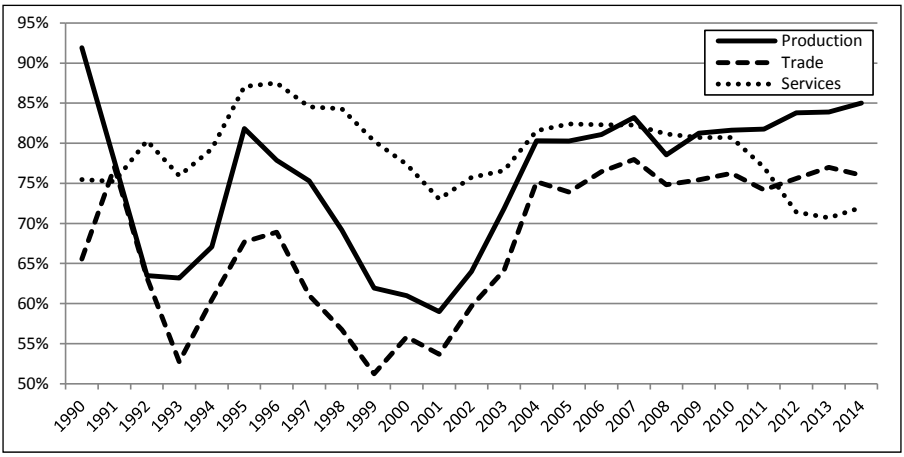
The concentration values of court–filed bankruptcies are related to companies' core activities. Relatively low fluctuations and the absence of increasing trends are recorded by trading activities, with peak values occurring in 2009 and 2013. Increased values are recorded in production activities (the highest levels in 2009-2010, and another negative trend in the first half of 2013). The highest concentration values are recorded in the service sector (a visible increase starting in the middle of 2008). Because of the high share of the construction sector, concentration values reach record levels as of 2010.

## 5. The degree of financial security in production sector

The estimated model – similarly to the above analysis of corporate failures – can be applied in assessing the degree of financial security in the economy's institutional sector (divided into production, trading and service activities). A key role in this sector is played by production activities, accounting for nearly 62% of value added, hence its significance in the conducted study.

The beginning of the Polish systemic transformation (1990-1993) is marked by a rapid decrease in the financial security of production activities, including industrial and trading companies (unlike the service sector). The subsequent years are characterised by short-term improvements in companies' financial condition. The year 1997 marks the beginning of a rapid downturn in all types of activities. A breakthrough process started in 2002 (the pre-accession period and accession to the EU in 2004), characterised by relatively stable business conditions. Deterioration in economic conditions was recorded in 2008 (the financial crisis). The negative trend prevailed in the subsequent years in the service sector (see Fig. 3).

Figure 3. The degree of financial security – production, trading and service companies in Poland in 1990-2014 (%)



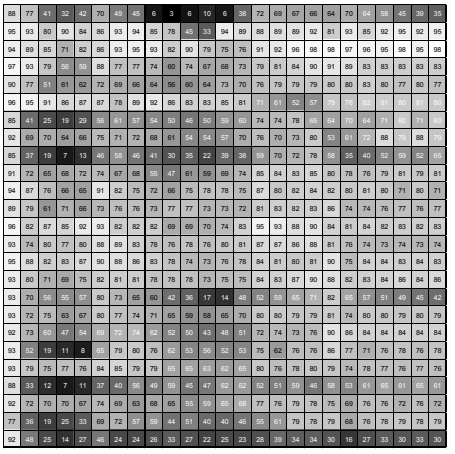

Source: same as Figure 1.

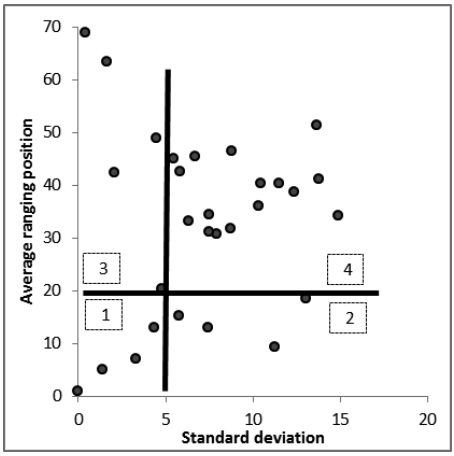
An in-depth analysis of PKD (the Polish Classification of Economic Activities) production sections (34 out of 69 economic sections) includes an assessment of their ranging position. The assessment is negative – the changes that occur retain the economy's production mezo struc-

ture. Attention should be given to a small number of changes to the highest and lowest ranging positions. It can be concluded that PKD sections with the highest and lowest degree of financial security tend to retain their respective positions (Kaczmarek 2012b, pp. 182-191).

The identification of PKD production sections with high financial security values is based on a synthetic measure comprising the assessment of two categories – average ranging positions and their changeability expressed by standard deviation (see Fig. 4).

Figure 4. PKD production sections by ranging position based on financial security and ranging position changeability in 1990-2014






Source: same as Figure 1.

Production PKD sections characterised by a relatively high and stable degree of financial security include the following:

- metal ore mining,
- manufacture of basic pharmaceuticals,
- generation and supply of electricity, earth gas, water vapour, hot water, etc.,
- oil and earth gas mining,
- manufacture of chemicals,
- manufacture and processing of coke and petroleum refined products,
- manufacture of paper and related products.

PKD sections with the lowest degree of financial security and high changeability are as follows:

- manufacture of textiles,
- manufacture of electrical equipment,
- coal and brown coal mining,
- manufacture of computers, electronics and optical devices,
- manufacture of transport equipment.

In conclusion, PKD sections which occupy high ranging positions in the economy's mezo structure and which are characterised by large concentrations and stable positions are represented by traditional business activities.

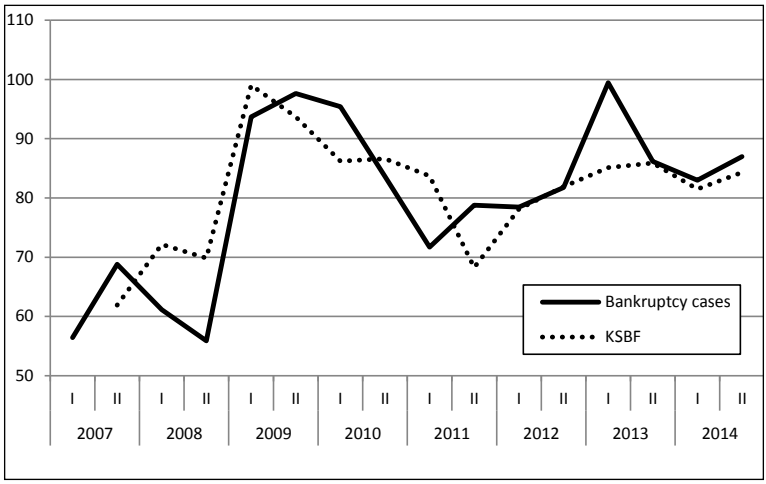
## 6. Conclusion

Correlations between measures related to business failures in their economic and legal dimensions cannot be identified without distinguishing the content that these measures represent. A comparative analysis of financial security and court-filed bankruptcy cases indicates that the two categories are characterised by similar long-term (1990-2014, all companies) and mid-term values (2007-2014, production companies).

It is another argument in favour of the estimated financial security model. The assessment of correlations is based on the correlation time series tests which indicate that there is a strong and statistically significant correlation ($r = -0.79$, $P < 0.05$) between financial security and the number of court–filed bankruptcy cases (for all companies, 1990-2014).

The calculated time series allow for determining a calibration equation for the two measures based on the linear quantile regression model (production companies, $r = -0.78$, $P < 0.05$). The calculated parameters create a linear equation for the median of bankruptcy cases to financial security. It allows for a comparative analysis of companies with the use of the financial security measure scaled in units corresponding to the number of bankruptcy cases (it means, with the use of calibrated financial security measure – KSBF) (see Fig. 5).

Figure 5. The court-filed bankruptcy cases and calibrated financial security measure (KSBF) in production companies in 2007-2014




Notes: KSBF and bankruptcy cases per 10,000 companies.
Source: same as Figure 1.

The conclusions and effects of the paper from the perspective of empirical research, are as follows:

- existence of a strong and statistically significant correlation between financial security and bankruptcy cases at company level in longer periods of time (1990-2014) and in the economy's mezo structure in mid-term (2007-2014);
- correlations between financial security and bankruptcy cases confirm a positive assessment of the effectiveness of the estimated model for assessing the degree of corporate financial security;
- a negative assessment given to changes to the Polish economy's production mezo structure in 1990-2014 in terms of the ranging positions (financial security measure) of PKD sections;
- the production mezo structure is characterised by slight changes to the highest and lowest ranging positions of PKD sections;
- PKD sections with the lowest and highest financial security values demonstrate relative stability in terms of retaining their positions, traditional business activities rank highest among PKD sections.

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Chapter 18

# The Effectiveness of State Support for Agricultural Producers in Ukraine and the EU

*Tetiana Melnyk, Olga Golovachova*

## 1. Introduction and problem definition

Under conditions of globalized challenges the efficiency of agricultural enterprises cannot be ensured without strong government support. The national policy in the field of agricultural industry support should not only be effective from the point of view of indicators of economic and social efficiency, but it should also stimulate the formation of Ukraine as an agrarian state. Therefore, at present, an efficient policy of support of agricultural industry is an increasingly important tool of influence on development of subjects of economy.

Despite a negative balance of foreign trade over the last 10 years, on the whole, the balance of trade in agricultural goods remains positive and increases on an annual basis. For example, in 2001-2013, the export of products of agricultural sector steadily exceeded their import, on the average by USD 4.7 bln. per year. Also, high rates of annual increase in both positive balance of trade (from USD 1.3 bln. in 2001 to USD 8.8 bln. in 2013), and in the share of agricultural products in the structure of commodity export (from 13% in 2007 to 27% in 2013) and import of Ukraine (from 6.8% in 2007 to 10.6% in 2013) are observed. At the same time, over the last 20 years, the gross output of agricultural industry decreased by 31.1%, including in the plant growing sector – by 11.8%, in animal husbandries – by 47.2%; there was a considerable decrease in livestock (cattle – by 5.1 times, cows – by 3.2 times, pigs – by 2.4 times) and poultry that led to a decreased production of animal husbandry goods (for example, beef – by 4.6 times) (Zhalilo, 2011). Besides that, the cost of fixed assets in agricultural industry decreased by 88.9% over the last 20 years, and the share of the gross value added of agricultural industry decreased from 22.5% in 1990 to 8.2% in 2010. The agricultural industry of Ukraine has one of the greatest potentials for development on a global scale, however, the availability of such potential does not mean its automatic realization, and the existing problems in the sector indicate that Ukraine needs an accurate and weighed agrarian policy with involvement of a mechanism of efficient state support of the branch.

The leading position of the EU in agricultural production and world agricultural trade is largely provided by the special conditions of the agricultural sector of the EU and its powerful state support. Ukraine implements the project for a free trade area with the EU and defines agribusiness among the priorities of national economic development, which is fully justified in view of the existing potential as well as the possibility of its realization.

## 2. Analysis of recent publications and researches

Problems of development of state regulation and financing of agricultural-food sector are investigated by many domestic researchers, such as O.M. Mohylnyi, T.O. Ostashko, T.I. Iavorska, V.V. Kulyk, I. Burakovskii, Ya.A. Zhalilo and others. A considerable attention in their works is given to assessment of efficiency of the policy of state support and its influence on development of agricultural sector in Ukraine. However, in our opinion, the world experience in the area of provision of state support has been studied insufficiently; it requires the conduct of a complex research of the mechanism of state support of agricultural industry in Ukraine compared to countries being the basic competitors of Ukraine on the world market of agricultural products and definition of priorities of the state regulatory policy in this area.

## 3. Objectives of the article

The objectives of this article are: to investigate peculiarities of the Ukrainian policy for support of agricultural industry compared to the policy of EU and to substantiate the ways for increasing the efficiency of state support of agricultural sector in Ukraine.

## 4. Statement of the basic material

Formation of efficient regulatory mechanisms in the agrarian sector of economy provides for determination of clear purposes, substantiation and use of a system of corresponding criteria. Recently, the main content of agrarian foreign trade policy of most economically developed countries is the state support of the agrarian sector by means of various subsidies, dotations and privileges. In some countries, the state financial investments into the agricultural industry exceed the market value of its products in 1.5-2.0 times. The state support of agricultural and food industries contributed to a substantial growth of foodstuffs production in countries being at present their greatest exporters – the USA, Canada, and EU countries (Mogilny, 2005). However, the total cost of the agri-food policies in the national budget cannot serve as a quantitative characteristic of support in the sector. World practice, in particular the OECD, uses the indicators that allow to assess the level of state regulation of agriculture and the effectiveness of state support for producers.

The Organization for Economic Cooperation and Development assesses the efficiency of state support with a breakdown into recipients of transfers (producer, consumer or sector on the whole). In the methodology they use indicator of Producer Support Estimate (PSE) that includes the cost of price support, direct (budgetary payments) and indirect (tax and credit privileges) forms of support to producers and indemnification of production cost. The OECD's quantity indicator is the percentage of PSE to the gross national product (Total Support Estimate, TSE). The indicator of support of producers reflects the annual volume of monetary transfers to farmers as a result of performance of support measures that: a) preserve the difference between the internal price and the price at the border of a certain country (support of market prices); b) provide for payments to farmers on the basis of such criteria as quantity of produced marketable products, volume of resources being used, livestock, area of the cultivated land or receipts and incomes obtained by farmers.

OECD monitors, on the annual basis, the agrarian policy not only of its member states but also of intensively developing economies. In view of the fact that conditions and basic macroeconom-

ic parameters of the world market are influenced by the level and efficiency of the state support of agricultural-food sector, we consider it expedient to investigate the tendency of development of Ukraine and European Union.

The level of total support (TSE %) is characterized by its share in the gross national product of the country and in the gross value added (GVA) of the agricultural industry in the country's gross national product. Table 1 shows the dynamics of change of indicators of total support and its level. Nominal indicators of total support of agricultural industry of the studied countries tended to growth over the analyzed period, despite certain fluctuations in certain years.

Table 1 shows the dynamics of change of indicators of total support and its level. Nominal indicators of total support of agricultural industry of the studied countries tended to growth over the analyzed period, despite certain fluctuations in certain years. The level of Total Support Estimate (TSE) (as percentage of the gross domestic product) in the EU tended to decrease from 1.2% in 2002 to 0.7% in 2013 and was 0.9% on average during the analyzed period.

In Ukraine, the level of TSE fluctuated within the range of 0.5-3.2%. It is worth to notice that the level of TSE in the gross national product of a country does not allow for the share of agricultural industry in the national economy. We used the indicator of share of Total Support Estimate in the gross value added of agricultural industry for more objective description of Total Support Estimate level. As we see, despite a considerable share of the gross value added of agricultural industry in the economy of Ukraine, the share of sector support in GVA of the agricultural industry is lower compared with the countries of the EU. It was 14% on average in Ukraine, while in the EU – 53.5%. All this indicates that the policy of agricultural support in Ukraine is characterized by lack of uniformity, instability and low efficiency in the implementation of relevant budget programs.

Table 1. Dynamics of indicators of total support of agricultural producers and its level

| Year | EU | | | Ukraine | | | |
|---|---|---|---|---|---|---|---|
| | | percentage of | | | | percentage of | |
| | bln USD | GNP | GVA of the agriculture | bln UAH | bln USD | GNP | GVA of the agriculture |
| 2000 | 97.5 | 1.2 | 52.4 | 0.9 | 0.2 | 0.5 | 3.0 |
| 2001 | 91.9 | 1.1 | 49.1 | 4.4 | 0.8 | 2.1 | 13.0 |
| 2002 | 104.7 | 1.2 | 53.5 | 1.1 | 0.2 | 0.5 | 3.4 |
| 2003 | 125.5 | 1.2 | 55.1 | 2.2 | 0.4 | 0.8 | 13.3 |
| 2004 | 155.7 | 1.2 | 56.7 | 4.7 | 0.9 | 1.4 | 11.4 |
| 2005 | 144.3 | 1.1 | 58.8 | 14.2 | 2.8 | 3.2 | 30.8 |
| 2006 | 142.2 | 1.0 | 57.5 | 15.3 | 3.0 | 2.8 | 30.1 |
| 2007 | 142.2 | 0.8 | 46.5 | 8.6 | 1.7 | 1.2 | 16.0 |
| 2008 | 152.7 | 0.8 | 49.2 | 14.6 | 2.8 | 1.5 | 19.5 |
| 2009 | 135.1 | 0.8 | 51.4 | 26.4 | 3.4 | 2.9 | 35.0 |
| 2010 | 116.2 | 0.7 | 42.2 | 20.3 | 2.6 | 1.9 | 22.7 |
| 2011 | 115.8 | 0.7 | 42.5 | -8.4 | -1.1 | -0.6 | -6.52 |
| 2012 | 123.4 | 0.7 | 48.1 | 10.1 | 1.3 | 0.7 | 7.8 |

Source: calculated using the relevant data of the Organization for Economic Cooperation and Development (OECD).

Producer Support Estimate (PSE) is a relative indicator of assessment of support of agricultural industry that allows for the information concerning direct subsidies, taxes and price regulation characterizing the level of support of producers. For comparison of directions of the policy for support of producers in different countries, there is used the PSE % (relation of PSE in terms of value to the amount of the total gain of producers of agricultural goods of the internal prices and budgetary transfers to producers). The bigger is the PSE % value, the larger part of producers' incomes is formed at the expense of state regulation. The dynamics of level of support of producers in the EU and Ukraine is given in Table 2.

Over the analyzed years, the level of support of producers of agricultural goods in the EU reduced gradually from 32.74% to 19.04%, in particular the potentially most production and trade distorting forms of support, which now represent less than a quarter of support to producers. The level of price distortions has been significantly reduced. Nearly half of producer support is granted with no requirement to produce. The share of payments targeted to environmentally and animal friendly practices has also increased (OECD, 2012).

In Ukraine, producers remained without support every year, it has been variable and from 2000 through 2012 the support decreased to 1.32%. An aggregate modest level of support disguises taxation of export sectors and protection of import sectors, most support is provided in ways that are production and trade distorting.

Table 2. Dynamics of the factor of assessment of support of producers PSE %, 2000-2012

| Year | EU | Ukraine |
|---|---|---|
| 2000 | 32.74 | 0.91 |
| 2001 | 30.17 | 6.39 |
| 2002 | 33.76 | 0.31 |
| 2003 | 33.64 | 0.44 |
| 2004 | 32.62 | 2.99 |
| 2005 | 30.37 | 11.19 |
| 2006 | 28.96 | 11.25 |
| 2007 | 23.46 | 3.6 |
| 2008 | 22.03 | 4.65 |
| 2009 | 23.34 | 10.41 |
| 2010 | 19.75 | 5.48 |
| 2011 | 18.00 | -4.37 |
| 2012 | 19.04 | 1.32 |

Source: calculated using the relevant data of the Organization for Economic Cooperation and Development (OECD).

The studied countries differ significantly in structure of total support. The mechanism of support of agricultural producers is unsatisfactory in Ukraine. The Ukrainian producers receive a considerable part of support due to excess of internal procurement prices over the world prices for similar products (Tab. 3).

Table 3. Average support of agricultural producers in 2002-2012

| Indicator | Ukraine | | EU | |
|---|---|---|---|---|
| | bln UAH | % | bln EUR | % |
| Total value of production (at farm gate) | 151,499.7 | | 303,936.4 | |
| Producer Support Estimate (PSE) | 5,120.6 | 100.0 | 92,224.6 | 100.0 |
| Including: | | | | |
| Market prices support (MPS) | -4,384.2 | -85.6 | 32,437.1 | 35.2 |
| Payments based on output | 1,745.2 | 34.1 | 2,317.9 | 2.5 |
| Payments based on input use | 5,559.1 | 108.6 | 10,476.2 | 11.4 |
| Payments based on current A/An/R/I, production required | 2,200.6 | 43.0 | 45,423.9 | 49.3 |
| Payments based on non-commodity criteria | 0.0 | 0.0 | 1,672.4 | 1.8 |
| Miscellaneous payments | 0.0 | 0.0 | -103.1 | -0.1 |
| Level of PSE (%) | 3.9 | | 26.1 | |

Source: calculated using the relevant data of the Organization for Economic Cooperation and Development (OECD).

During the 2002-2012 Market Price Support of agricultural products (MPS) on average in Ukraine was negative, meaning that global agricultural prices are higher than domestic prices. These results indicate that without budgetary payments state of agricultural producers would have deteriorated. For comparison: the share of price support in the EU was positive and made 35.2% producers' support. Market Price Support is formed, first of all, at the expense of export and import duties imposed for specific products, therefore it is considered as a measure distorting the market pricing to the greatest extent. Thus, government measures to impose duties and quotas on exports of oilseeds in 2007 and cereal crops in 2009-2010 led to falling incomes and agricultural competitiveness (http://stats.oecd.org).

Payments based on current A/An/R/I play an important role as a measure of state support: in 2008-2010, they accounted for 12.2% of the total PSE, and approximately 95% of them were allocated to animal husbandry products. However, actual payments were much smaller than planned in the budget. So, producers of beef, veal, pork and poultry received 10% of payments provided for in the budget in 2009, and in 2010 there was partially covered the debt for 2009 only. A similar situation was observed with payments per ton of such products as live sheep, wool, milk for baby food, honey and silkworm moth.

Payments based on input use, in particular privileges on VAT payment are a constituent element of support of agricultural producers in Ukraine. To-date, a special tax regime for agricultural enterprises functions in Ukraine within the scope of state support of agricultural sector. It provides that the amounts of VAT received from buyers in value terms for delivered agricultural goods (services) shall not be paid to the budget but shall be transferred to own special accounts of producers of agricultural goods and shall remain at their disposal. Besides that, agricultural enterprises shall receive compensation from processing enterprises for delivered meat in live weight and milk. A source of this indemnification is also the amount of VAT that is not paid to the state budget. It is necessary to notice that there is observed a disproportion between growth of tax subsidies granted to agricultural enterprises from VAT payments and growth of volume of production of agricultural goods. Since 2007, such privileges increase annually on the average by 40% while

the growth of volumes of production does not exceed 20% since 2007 (except for 2008 and 2010 which were very good years for the crops). Therefore, this mechanism is used inefficiently rather to attach the primary producers to their traditional zones of supply and to ensure an uninterrupted supply of raw materials than for other purposes.

Access of agricultural producers to financial resources is one of the key factors of agriculture's competitiveness. The development of small farms promotes self-employment that reduces social tensions in the country. At the same time state support should focus primarily on promoting investment and development, and state policy should have long-term purpose. For example Poland has allocated more than 72 billion euros in public investment support of farmers at the expense of the EU budget by 2013, while funding is provided through joint participation of business entities in investment projects and one-time cash payment to support young farmers is 50 thousand zloty (12 thousand euros) (Iavorska, 2011, pp. 166-172). This policy has led to increased efficiency in the agricultural sector in Poland, qualitative improvement of technical and economic parameters of agricultural production, which is manifested in the growth of physical output and gross value added per 1 ha (Kulyk, 2011, pp. 167-175).

In Ukrainian distribution mechanism of state support the priority in the distribution of subsidies and benefits to large agricultural enterprises is traced (for example, the 450 largest companies received 68.5% of the budget in 2010). There's a lack of funds for farmers and small-scale farms.

Unlike measures for support of producers which are directly aimed at increase of competitive ability of home producers on the internal and external markets, the general support of services influences the competitiveness indirectly (Tab. 4).

Table 4. Average expenses for support of services in agricultural industry, 2002-2012

| Indicator | Ukraine | | EU | |
|---|---|---|---|---|
| | bln UAH | % | bln EUR | % |
| General Services Support Estimate (GSSE) | 3,374.9 | 100.0 | 11,277.3 | 100.0 |
| Research and development | 346.6 | 10.3 | 2,000.9 | 17.7 |
| Agricultural schools | 1,101.5 | 32.6 | 1,359.1 | 12.1 |
| Inspection services | 827.2 | 24.5 | 567.2 | 5.0 |
| Infrastructure | 833.0 | 24.7 | 4,005.1 | 35.5 |
| Marketing and promotion | 46.5 | 1.4 | 2,895.4 | 25.7 |
| Public stockholding | 121.6 | 3.6 | 392.3 | 3.5 |
| Miscellaneous | 98.3 | 2.9 | 57.4 | 0.5 |
| Total Support Estimate of agricultural industry | 8,495.5 | | 105,829.3 | |
| Share of support of services in Total Support Estimate of agricultural industry (GSSE%) | 37.8 | | 10.7 | |

Source: calculated using the relevant data of the Organization for Economic Cooperation and Development (OECD).

Such measures are financed from the budget. Funds are allocated not to producers, but to research and educational institutions, phytosanitory and veterinary services, organizations dealing with rural development, consulting service, services and organizations for promotion of products of farmers to internal and external consumers, stores, etc. Thanks to such measures of support,

producers get access to new crops, breeds of animals, technologies, consulting services, commodity markets, products from reserve funds in unfavourable years, etc.

The share of general services in the Total Support Estimate of agricultural industry is very non-uniform in countries. It is on average 37.8% in Ukraine between 2002 and 2012, while in the EU – 10.7%. Not only the sums of expenses for general support measures, but also their structure differ essentially. In the EU marketing and promotion of products accounted for 25.7% of all such expenses on average that rapidly increased demand for agricultural industry products, in Ukraine – 1.4%. An underdevelopment of marketing networks which could provide an efficient promotion of products among all participants of the market with a fair price ratio considerably influences the formation and functioning of the agrarian market of Ukraine. However, state purchases accounted for a big part of the funds aimed at support of services in agricultural industry. Meanwhile in EU the smallest amount of funds were allocated to that item.

A distortion in the system of functioning of agrarian products markets is also caused by the mechanism of VAT compensation. Over many years, indebtedness for VAT compensation to exporters is permanently observed in Ukraine (Burakovskii, Movchan, 2011). Besides that, there is a necessity of differentiation of VAT rates with respect to foodstuff as it occurs in some countries. In particular, in Poland the lowered VAT rates of 8% and 5% are applied practically to all commodity nomenclature of foodstuffs, whereas the legislatively established rate is 23%. In Russia, a lowered rate of 10% is provided for specific foodstuffs while the legislatively established VAT rate is 18% (Ostashko, 2011).

The results of the research of agricultural producer's state support allowed to systematize the main areas of improvement and justify the steps, which, inter alia, include:

- promotion measures, i.e. advisory support for farmers; revitalization of research in the direction of resource saving and environmentally friendly technologies; support of the establishment of exporters' associations; support of the international exhibitions for introduction of new production technologies, increasing productivity and competitiveness;
- financial support measures aimed to accelerate the harmonization of Ukrainian and European standards worldwide; development of a mechanism of financial support through cheaper loans, etc.;
- measures of institutional support, including revitalization of the cooperative movement in rural areas; improving the institutional environment in the area of technical regulations, etc.;
- measures to protect the internal market – negotiations in a bilateral format with member countries of the WTO to modify tariff rates of import duties, the establishment of appropriate institutional environment for full use of emergency safeguard measures and so on.

## 5. Conclusion

The results of the analysis has enabled the conclusion that the state support of agriculture in Ukraine is inefficient, characterized by a lack of stability, sustainable growth and inconsistency to European practice. To improve the efficiency of farmers support Ukraine should gradually harmonize legislation with EU requirements, particularly in the field of standardization, certification, requirements for production and quality control methods; encourage the introduction of innovative technologies in agricultural production and research farms in small and medium agribusiness; support the development of the cooperative movement in rural areas; develop an effective mechanism for financial support through cheaper loans by the example of the EU.

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Chapter 19

# Tourism Destinations Management in the Context of Ukrainian Crisis

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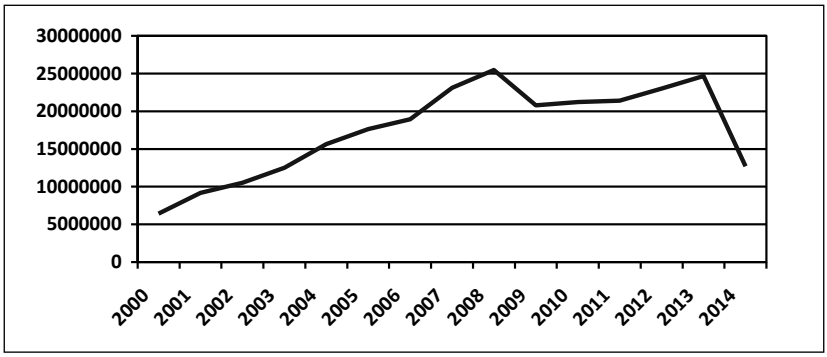
## 1. Introduction

Tourism as multisectoral and multifunctional phenomenon is characterized by the highest level of elasticity from the natural (ecological), economic, social and political changes in any country-potential destination. At the same time from the beginning of the XXI century and up to the present time the forecasting of the volume and the directions of tourism development is complicated because of uncertainty of outside environment.

## 2. The basic material

Shortly before the political and economic crisis of 2013-2014's the market positions of most Ukrainian tourism destinations could be characterized by stable or positive dynamics and gave hope for further development. Due to conducting the European Football Championship, Ukraine created newsworthy information that could provoke and, for some destinations, has provoked, the growth of tourist flows. Monitoring of global media and Internet sites had been demonstrating some encouraging features for Ukrainian tourism including the emergence of interest from potential target markets and improving of their tourism image. In 2012-2013 Ukraine and some its destinations were included in "must see" rankings of Lonely Planet, Trip Advisor, National Geographic, Insight vacations, The Globe and Mails, Globe Spots and others.

Figure 1. Dynamic of tourists flows to Ukraine (2000-2014, persons)




According to Travel & Tourism Competitiveness Index ranking (TTCI), in 2013 Ukraine ranked 36th in Europe and 76th overall, improving by nine positions in the world since 2011.

At the same time, several influential international grant-holder organizations had been showing the interest in Ukrainian tourism destinations. UN WTO and European Commission experts visited the country and defined the creation of an effective governance vertical, the formation of tourism development strategy, the modernization of national system of tourism statistics and the improving the system of vocational education as the strategic priorities.

In the almost complete lack of effective national government vertical, the local management systems on the platform of public-private partnerships have been formed in some destinations (Lviv, Kamyanets-Podilskiy, Berdyansk, Yaremche). Above all the newly created destination management organizations (DMO) assumed the responsibilities in promotion of destinations and minimal improvement of the tourism product in part of the communal infrastructure modernization, preservation of local attractions and more.

Protracted financial-economic and political crisis, 2013-2015 events ("Euromaidan", The Crimea Autonomic Republic annexation, military events in the East of Ukraine, terrorism acts in some cities) created the situation of essential reducing of tourist activity volume and essential loss of country tourist potential. The crisis that befell Ukraine has transformed national travel market. Now the crisis effects have both sectoral and spatial dimension.

Political instability, war and, consequently, the deterioration of the country's tourism image have resulted in a decline of the demand within some sectors of inbound tourism market, for example, MICE and urban. This has caused a drop in occupancy rate of most large and medium-size hotels, number of which at certain destinations has grown in recent years.

Tourism sector of all Ukrainian destinations lost the Russian market which share was near 60% of tourist flow. Certainly, this is reflected in the development of seaside and spa tourism, affected the occupancy rate of numerous accommodations in specialized small and medium resort destinations as Genichesk, Zatoka, Berdyansk, Truskavets, where tourism has become a leading sector of economy and the main source of local people well-being.

Now large areas came out from Ukrainian political influence and many destinations were excluded from the tourist circulation. This primarily concerns the Crimean destinations, which concentrated the significant share of recreant's flow of Ukraine. Similarly, we saw that before the crisis, Donetsk ranked 2nd position in Ukraine by volume of the business travelers but now this destination has received the special status that minimizes the tourists flow.

In consequence of hryvnia devaluation, the demand for outbound tours collapsed. At first sight it might be expected the changes in the Ukrainian tourist preferences from consumption of outbound to domestic product. Elimination of the Crimea destination from the national tourist market could increase the demand of tourists for the local destination in the Southern part of continental Ukraine (Mykholaiv, Kherson, Odessa regions) in the Black Sea zone. In reality, price increase by domestic producers in some tourism destinations jeopardizes this assumption.

Therefore, monitoring of the market expert's and researcher's opinions about the impact of the crisis on the Ukrainian tourism sector development shows huge differences in prognostic assessment. This situation is reinforced by a significant degree of uncertainty for the political and economic scenario in Ukraine.

At the same time, it must be remembered that Ukrainian destinations entered to the crisis with very different management and marketing capitals, especially in part of:

- availability of an effective organizational structure,
- tourist image and visitors perception,
- presence of loyal visitors.

Now it is clear that well-publicized destinations with established image and effective organizational structure that were built according to the European model better undergo the consequences of the crisis.

Indeed, most Ukrainian tourist destinations are formed on the pattern of simple market-oriented structures. The interaction between its stakeholders is very limited. In fact, this is a set of market subjects, each of which offers its own services for tourists. The destination`s proposal is sufficiently standardized and based on certain stereotypes of consumers behavior. In this case, there is no coordination between the independent, mostly small or medium-sized participants. Independently creating your product and conducting individual marketing activities they provide a viability of destinations. It is clear that within such formations we are not talking about serious manifestation of public-private partnerships and regulated development. Exactly these destinations primarily fall under impact of the crisis because are not able of rapid self-organization. However, recently within some Ukrainian destinations the integrative stakeholder initiatives were activated, which eventually led to the development of another type organizational structure, such as networked territorial associations based on the interaction of small and medium tourism businesses and coordinated through different types of relationships between separate legal entities.

The existence of the local producers of tourism services is to some extent interdependent because they cannot provide full service to tourists individually. However, the tasks of all participants of the process are not necessarily concerted, and therefore their coordination can take place through explicit or implicit agreements and without them. Newly formed stakeholders alliances of Kyiv, Lviv, Kamianets-Podolsk, Yaremche, some coastal and spa destinations based on implicit agreements and initiated by local authorities demonstrate better survival in current time of crisis.

The study of international experience shows that if stakeholders are inclined to collaboration through contracts, it minimizes all risks and formalizes cooperation. However, in Ukraine, we do not have destinations in which stakeholders interactions in the marketing field would base on explicit agreements and would take place through the mediation of DMO. This complicates the process of planning, organization and implementation of anti-crisis measures.

As will readily be observed that the destinations managed by the corporations or/and operating as a corporation are more resistant to crises and more ready to implement anti-crisis measures.

In such destinations all services provided by the companies in one or another way subordinated to private corporations. Actually, a corporation manages destinations and realizes full cycle marketing functions with a high degree of integration with other stakeholders. All destination`s stakeholders come into a dependence on key players. A rough analogy in Ukraine is to be found in Bukovel alpine destination, which develops as a clear hierarchical structure subordinated to one of the largest financial groups in Ukraine.

The destinations ability to resist to the crisis is defined also by such impotent factors as image and visitor's perception. Most of the Ukrainian tourist destinations don't have a stable image and never have been developing it. Existing image of some destinations was formed spontaneously; other destinations with sufficiently interesting tourist resources do not exist in the minds of potential visitors at all. Meanwhile, it should be mentioned that destination image is one aspect of tourism, which demands crisis management and recovery marketing, because it is often the first casualty of violence. Negative media coverage can influence potential visitor's attitude formation. As a result, the destination image becomes a crucial factor in travel choice and tourism marketing.

Now, visitor's perception of Ukrainian destinations on outbound markets is associated with media images of terrorist threat or political turmoil, regardless in what part of country destination is situated and to what extent it is involved in the conflict.

Thus, we have to consider matters of tourism destination's image creating in the context of recovery marketing and in the coordinate system "the power of the image before the crisis – the degree of the image damage during the crisis".

For the present, we merely state that, firstly, some Ukrainian cities and towns as Donetsk, Slovyanogorsk, Mariupol and many others are excluded from tourism activities for a long time and we can talk about their image only in the context of the distant prospect and also, the destination will have to rebuild it from scratch. Secondly, the destinations with politically motivated population, whose image is already associated with the manifestations of violence (Kyiv, Odessa, Kharkiv), will be the most difficult objects for marketers from position of image building. Third, it should be noted, that there are destinations, predominantly in Western Ukraine (Lviv, Ternopil, Vinnitsa), whose visitor's perception has greatly strengthened by a wave of patriotism on inbound markets. Exactly they may use this factor in creating a competitive tourism image.

Next factor of the destinations stability to the crisis is a presence of loyal visitors. This is applicable vastly to coastal (Berdyanck, Zatoka, Skadovsk), spa (Truskavets, Morshyn, Shayan, Myrgorod, Khmilnyk) and alpine (Bukovel, Slavske) destinations. The proposition is intuitively obvious from the fact that the visitor`s affection is formed on the basis of previous experience, user reviews from a sufficiently reliable sources, firm confidence in a certain quality. The Ukrainian tourist destinations have a huge potential of loyalty exactly on the inbound markets and the markets of nearest countries – Belarus and Moldova. Besides, there is a hope to return Russian tourists primarily to the spa and alpine destinations after crisis.

Henderson argues that the destination's ability to crises susceptibility depends on the presence specific niche products as well as the development of new forms of tourism such as sustainable tourism and ecotourism (Henderson, 2002; 2003). Unfortunately, only a few Ukrainian destinations, mainly in the Ukrainian Carpathians and the Middle Dnieper, can boast of niche tourism product.

Now, when the political and economic crisis has hit the tourism business and threatens to decrease the tourist flows, it is evident the difference in managerial behavior of Ukrainian tourist destinations. While the majority remains in a passive state, other try to use the elements of reac-

tive crisis management or, rather, reactive recovery marketing. And none of the Ukrainian destinations apply institutional mechanism to fight the crisis.

This assumption actualizes scientific search of parameters for tourism destination's management system, which would be able to function effectively in times of economic and political crisis. It must be emphasized that in the present circumstances this concerns only system of reactive crisis management that could eliminate the threats and stabilize the situation. As a rule, the system applies only after preventive management didn't provide the expected results. In Ukrainian realities, it is difficult to talk about any preventive management in tourism destinations. Actually, in the current situation, instead of the traditional triad of crisis management "preventive management – reactive management – rehabilitation management" Ukrainian destinations have to build a system of "reactive management – rehabilitation management – preventive management".

Thus, two main mechanisms of reactive crisis management can be applied to Ukrainian tourism destinations in the current situation: organizational (institutional) and marketing.

The lack of effective vertical management in tourism and a small share of managed tourism destinations in Ukraine require launching of mechanism of total or partial self-organization of stakeholders. The principle of self-organizing capacity should be the basis for management destination system. The implementation of this principle in practice should lead to forming of a destination management subject (DMO) from the environment of the destination and generally to the institutionalization of management. Scientific researches recognize a coordination of efforts and cooperation of stakeholders on the basis of public-private partnership as a component of mechanism of destination crisis management. Destination marketing in the wide sense is a major area for cooperation among stakeholders. DMO fulfills functions of marketing efforts coordination that could not be implemented separately by each stakeholder. Those functions include fast search of new markets and the development of crisis actions in old markets; crisis adaptation of destination tourism product; coordination of pricing policy; intensification of cooperation with tour operators involved in the distribution chains of destination; development of low cost tools and ways to promote tourism destinations product in the target markets, including active marketing in social media and viral marketing.

In the context of scientific-practical discussion as to quickly renewal character of demand for tourism and, accordingly, for tourist business on new qualitative institutional and marketing principles, one of the key places is occupied by the problem of theoretical foundation of conceptual principles, which define behavioral logics of customers and the logic of market relations evolution. Subscribing to the views of modern scientists concerning the importance of convergence in the system of economic relationships one should think about the formation of alternative to the classical model of competitive market, the model of market relationships – *convergence market*. Establishing this fact we pay attention to the "specific mechanisms of transactions of intangible values, first of all knowledge and information as the main manufacture resource of postindustrial epoch, values which are not subjected to the laws of rarity and limited usefulness that is competition" (Galchinskyy, 2014). Knowledge of motives of certain consumer segment behavior is based on behavioral theories, which under the condition of individualization of service must actively be used in the marketing activity of tourist enterprises (Pearce, 2008).

Problems and challenges faced by the tourism sphere_in current socio-economic situation in Ukraine can be solved by the tourist market members by developing for the nearest perspective programs of action (strategy) on the platform of public-private partnership.

The strategy (road map) must be oriented on the stimulation of inbound and outbound tourism in Ukraine. It may be realized in three stages, which covers the complex of measures of economic, juridical and administrative influence.

*On the first stage (2015)* it is envisaged:

- to make law based initiatives as to urgent measures to activate the development of inbound and outbound tourism by the way of VAT rate reduction for services in temporary accommodation to the middle-european to determinate purposeful character of tourist duty in certain destinations;
- to organize and finance measures in promoting tourist products and destinations of Ukraine on the world and domestic market (under the conditions of providing by the Government measures for the saving of budget funds in 2015) by means of combining efforts of all stakeholders of the market;
- to develop and realize complex of measures for the development of tourism on the local level by the local authority and self-government by the way of improving general and special (tourist) infrastructure.

*On the second stage (2016)* it is envisaged:

- to apply mechanisms of self-regulation in the sphere of tourism by means of introducing changes to the law of Ukraine "on tourism" and to bring the draft project of the law of Ukraine "On national tourist organization" to the legislative bodies of the country (Verkhovna Rada of Ukraine) with the aim;
- to improve normative field of function of subjects of tourist activity by means of developing the series of standards in providing tourist services which are harmonized to the norms of countries-members of EU and which will regulate problems of classification and category of tourist infrastructure objects, increasing their availability to disabled people;
- to develop professional standards on the problems of regimentation the competence of specialists in tourist service, especially in tourist accompanying (guides, active tourism instructors) by common efforts of public organizations, representatives of business structures (employers) and higher educational establishments which carry out such training, retraining and qualification improvement;
- to work out the strategy of tourism development up to 2014 with international experts participation.

*On the third stage (2017)* appropriate:

- institutional reconstruction in the sphere of tourism on the national and local levels by developing of independent central body of state executive power, national tourism organization, local tourism organizations;
- to introduce new national standards as to providing tourism services that are in harmony with the European ones.

## 3. Conclusion

Definition and identification of kind of changes in the tourist sphere of the country on the basis of theoretical-praxeological generalization of successful experience will allow in future developing methodological principles of crisis management of tourism destination's development, working out the normative-legal, economic and social-political mechanisms of flexible regional development on the qualitative new principles, which will stimulate the renewal of this perspective sector of economy for Ukraine.

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Chapter 20

# Vrnjacka Banja as a Tourist Brand or Tourist Region

*Danijela Durkalić*

## 1. Introduction

Due to increasing commitments and business activities, people usually found solution for rest and relaxation in travel or tourism activities. Tourism contributes to the development of culture, traditions and beliefs of people. To call some place tourist place it should, as a product, satisfy preferences of people. In order to satisfy the needs of tourist some destination must possess a natural, wealth, tradition, culture, and global tourism offer. To a certain destination has to offer tourists, must be sustainable tourist region, and must constantly work on improving and developing destination.

Building a brand in tourism is not an easy and simple process. It takes time and money in order to represent some destination as a brand. Therefore, this work presents a challenge for exploration, or determining whether a destination in Serbia can be a brand.

The subject of the research is to collect data about perceptions that the tourists have on one destination in Serbia – Vrnjacka Banja. The aim of the research is twofold. First, to explore the brand image of Vrnjacka Banja. Second, to establish positive and negative associations between tourists. The starting hypothesis is that the authenticity expressed through the frequency of visits, and amount more than 30%.

Work is organized in three parts. The first concerns the construction of a brand and its application in tourism. The following shows the basic geographic and economic information about Vrnjacka Banja. Then, next will show results of research in terms of the values that the tourists are given. The last part gives conclusions and implications that have been identified.

## 2. Branding services

Now we live in a world where everything is available, where almost no difference between the products. For example, different brands of drinks or sneakers have very similar characteristics. For which product will decide the customer at a given moment depends on preference, price or brand. Branding as a process in which companies allocate their offering from the competition,

is a process that requires a lot of time and effort. Right this relationship between customer and brand determines which product will be purchased. The benefits that the brand brings to the company are significant (Jobber, Fahy, 2006, p. 148):

- financial value of the company,
- positive effect on the perceptions and preferences of consumers,
- barriers to competition,
- high profits,
- sustainability.

Product branding can be seen as a easier, more tangible process than branding services. However, for services is somewhat different. As we know, the basic characteristics of services are indivisibility, intangibility, variability and transience. The seller of products may make supplies and later selling products. In services, the moment of sales is the moment of purchase. More specifically, it is crucial that the destination "buy customer", not the customer destination. That is why brand building in services is very difficult and long process.

The key to providing quality service is to understand the needs of customers. For this, it is crucial the promotion of destination and services. Adequate method of promotion can improve and increase the number of users of the service.

Compared to conventional products and services, branding tourist destinations is a process in which an active region for itself creates a competitive advantage and identity as better positioning on the domestic and foreign market (Bolfek, Jakičić, Lončarić, 2012, p. 365).

Modern tourism on the rise, as the number of tourists and number of tourist destinations. For consumers is available an increasing number of tourist destinations, so it is essential to develop a strategy for positioning a particular destination. The key point is the competitive positioning destination image that should be created among tourists. Creating the image of the destination is a multidimensional process that involves expectations, ideas and impressions that a person has about a destination (Ekinci, 2003, p. 21). It includes individual picture of a specific place, a picture of their friends and other global impressions. Taking this into account, we conclude that the image of destinations is in the function of many different factors, such as information from friends, media and tourism experiences.

Branding tourist destinations can be viewed from two perspectives, from the perspective of tourists and the market prospective. Seen from the perspective of the tourist, branding specific destination represents formed perception of a specific place that has remained in the memory of tourists. From the standpoint of the market, destination branding implies a set of marketing activities: (Quintal, Phau, Polczynski, 2014, p. 42).

- supporting the creation of the name, symbol or logo that identifies and differentiates a particular destination;
- consistently convey expectations and memorable experience that are associated with the destination;
- serve to reinforce emotional connection between the visitor and the destination;
- reduce the searching costs of the visitor for a specific destination and subjective risk.

So, the brand destination is specific in that it leaves the social, emotional and valuable identity of specific locations on a visitor. The successful destination branding implies a permanent connection between the destination and the tourists which satisfies all of their tourism needs. One of the important determinants of branding is to brand personality – branding people that charac-

terize a given destination (Ekinci, 2003, p. 22). It includes features and performance characteristics of the local population that are related to destination.

## 3. Geographic and economic position of Vrnjacka Banja

In the Republic of Serbia, significant parts of the tourist offer are the spas. The largest and most famous spa in the Republic of Serbia is Vrnjacka Banja. Vrnjacka Banja is one of the largest and most famous health resorts in Serbia and tourist center for recreation. It is located in Central Serbia, in Raska district, 200 km south of Belgrade. It is very well connected to all parts of Serbia, good local roads but also road and railway of Balkan roads: Belgrade – Sofia and Belgrade – Athens. The municipality is considered to be relatively developed municipalities in Serbia.

The base of economic development of the municipality of Vrnjacka Banja is tourism, the backbone of past, present and future economic development of the municipality and on that basis develop other industries. Today, the municipality operates in the field of agriculture, industry, handicrafts manufacturing, construction, transport, trade, banking, education, health and other economic activities.

Table 1. Comparative overview of the main characteristics of the Municipality, the District and the Republic of Serbia

| | **Area (km$^2$)** | **Share (%)** | **Population** | **Share (%)** | **Population density** |
|---|---|---|---|---|---|
| Vrnjacka Banja | 239.00 | 0.27% | 27,332 | 0.38% | 114.3 inhabitants/km$^2$ |
| Raska district | 3,918.00 | 4.43% | 300,102 | 4.22% | 76.6 inhabitants/km$^2$ |
| Serbia | 88,361.00 | - | 7,120,666 | - | 80.6 inhabitants/km$^2$ |

Source: Municipality of Vrnjacka Banja, Sustainable Development Strategy Vrnjacka Banja 2013-2023, p. 41.

In Serbia, spa tourism overlaps with the concept of health tourism, as the largest number of tourists visit spas for health treatment. The situation is such that the spa was a place for rest and treatment of the older people.

According to current statistics, the tourism sector participates with 2.5% of the gross national product and 5-6% of the total employment in the Republic of Serbia (Republic of Serbia, 2006, p. 2). Today, the introduction of the innovative aspects of rehabilitation and relaxation and different approaches spa treatments, spas were given a whole new meaning. Today spas represent a new culture of enjoyment.

Vrnjacka Banja is among the most popular places in the field of spa tourism. With this in mind, it is necessary to constantly improving and monitoring the development of this branch at the local and global level. To achieve this improvement, it is necessary to actively monitor and analyze trends of basic indicators of tourism development, such as: turnover in tourism, the degree of capacity utilization, the number of tourists and tourist nights.

Table 2. Number of tourists in 2013

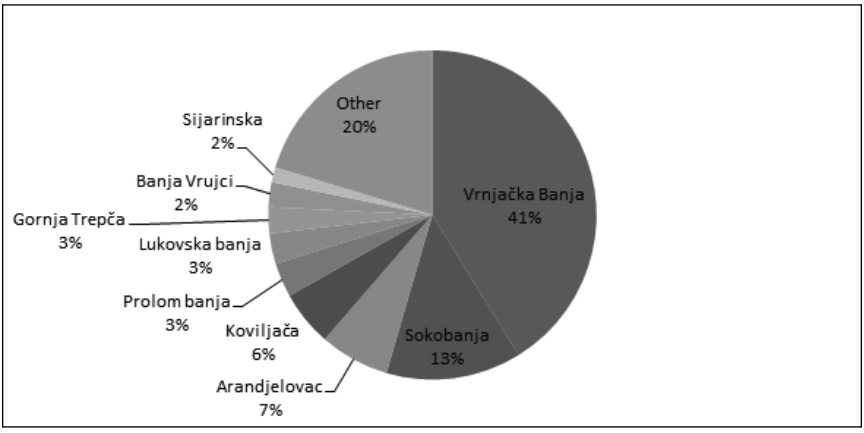
| | Number of tourists | | | Tourist nights | | |
|---|---|---|---|---|---|---|
| | **Total** | **Domestic** | **Foreign** | **Total** | **Domestic** | **Foreign** |
| Republic of Serbia | 2,192,435 | 1,270,667 | 921,768 | 6,567,460 | 4,579,067 | 1,988,393 |
| Raska district | 281,603 | 241,195 | 40,408 | 1,165,926 | 1,038,477 | 127,449 |
| Vrnjacka Banja | 158,900 | 137,822 | 21,078 | 611,699 | 548,469 | 63,230 |

Source: Republic of Serbia, 2014.

Observed annually for 2013, in the municipality of Vrnjačka Banja recorded a total of 158,900 visitors, and as part of that 137,822 domestic and 21,078 foreign. There has been total number of 611,699 nights of which 548,469 by domestic and 63,230 foreign tourists. After examining the statistics in 2013, recorded a total of 158,900 visitors and 611,699 overnight stays and it was done and a comparison of the total number of visitors and overnight stays in 2013, in the Republic of Serbia, Raska district and Municipality of Vrnjačka Banja. From these data it can be concluded that the tourist traffic in 2013 in the Municipality of Vrnjacka Banja amounted to 56% of tourist traffic of Raska district, and 7% of the total tourist traffic of the Republic of Serbia.

If we compare the tourist activity in 2013 in spas in Serbia, it can be seen that Vrnjačka Banja lead over other spas in Serbia, with 156,240 visitors in 2013. Right behind are Sokobanja with 50,629 visitors and spa in Arandjelovac with 26.050 visitors. Banja Koviljača is recorded 20,644 tourists, while Prolom hosted 12,831 tourists.

Figure 1. Share of different spas in the total tourist traffic in Serbia (2013)




Source: own work.

If we analyze the participation of individual spas in total tourist traffic in 2013, Vrnjačka Banja took the leading position, bearing in mind that 41% of tourist visitors of all spas in 2013 visited Vrnjacka Banja.

Partly as a result of complex constraints, and partly as a result of budget constraints of the public sector, programs for destination branding are limited, so they must be given more attention (Hankinson, 2005, p. 25).

As a conclusion of this research work the tourist market in Serbia, could be drawn by the fact that a significant problem in the evaluation of tourism are not registered tourist facilities. Bearing in mind that the rates in such facilities cannot keep up statistically, we identify the problem of unreal existing situation of tourist traffic. In this sense, there is such a big responsibility to the competent institutions and organizations (such as, for example Tourist Organization) to monitor rates and occupancy that are not included in official statistics. This number of tourists can be very significant for analysis and research.

## 4. Tourism brand vs. tourist region

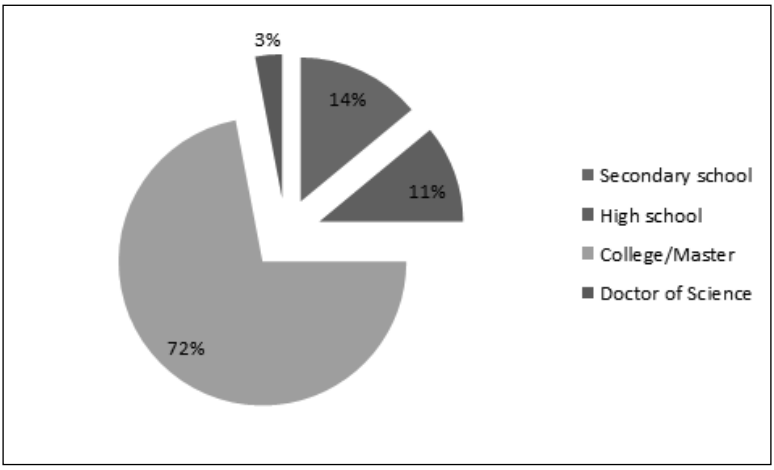
For most destinations, it is necessary to establish a public positioning and branding strategy. Tourist places are easily replaceable and the connection between the location and the tourists need to create a real brand image in the market (Pike, 2005, p. 258). The image of a particular destination, the number of visits and the frequency of visits differentiate tourist brand from tourist region. Tourist region is only place that has the potential for tourism activities, while tourism brand represent formed position of the destination in the tourism market.

The aim of the study was to assess the attitudes and estimates of tourist destination- Vrnjacka Banja, Serbia. The aim is also to realize the image that tourists as consumers had about Vrnjacka Banja. Based on this analysis, will receive the initial setting for destination branding and creating a unique attraction.

As the main method of data collection was used the test method. As a means for the used research methods was used questionnaire. Data collection was conducted through a questionnaire based on a random sample of 70 respondents in the Republic of Serbia in the period March–May 2015. The questionnaire consists of 11 questions that were related to the general features of the tourists, the frequency of visits, the reason for the visit and assessment of satisfaction of local tourist attractions.

Within the general characteristics of tourists questionnaires include issues related to gender, education and frequency of visits mentioned destination. Most of the respondents were female (63%), and 37% belong to the male population. As important information was emphasized education of surveyed tourists. Most of them are persons who have graduated from college or high school.

Figure 2. Educational characteristics of tourists




Source: own work.

The diagram shows that 14% of surveyed tourists completed secondary school and 11% of them high school. The share of highly educated tourists is 72% while only 3% of them are PhDs. A large number of highly educated tourists can demonstrate a high level of traffic destinations because a high education provides such standard of living.

In terms of frequency of visits destinations, 14% of respondents visited Vrnjacka Banja the first time. There is a greater number of those who visited destination two or more times (76%). In terms of frequency of visits destinations, 14% of respondents visited Vrnjacka Banja the first time in the survey. There is a greater number of those destination visited two or more times (76%). The share of tourists who have not yet visited destination is 10%. The very high attendance of tourists is a result of the favorable geographical position of destination. Destination is on the transit highway near major cities in Serbia.

The answers could also reveal the main reasons for the visit of tourists. As part of the questionnaire were offered several answers: work, rest, rehabilitation and recreation, friends and undefined option – other. From 90% of respondents who visited destination, the largest number of visitors came to the vacation (49%), which means that for the first this destination is a place to rest. In addition, as a significant reason for the visit is work (16%) and friends and family (15%). Bearing in mind that the destination has conference centers and meeting rooms, it is logical that a large number of tourists come because of work. For the rehabilitation and recreation come only 3% of respondents, and for other reasons (visit events, carnival and other events) comes to 16% of tourists. Bearing in mind that the destination has voluminous capacity for rehabilitation, the reason for the small number of tourists is the age of respondents, which included younger population, up to 35 years.

Table 3. The most common source of information about the destination

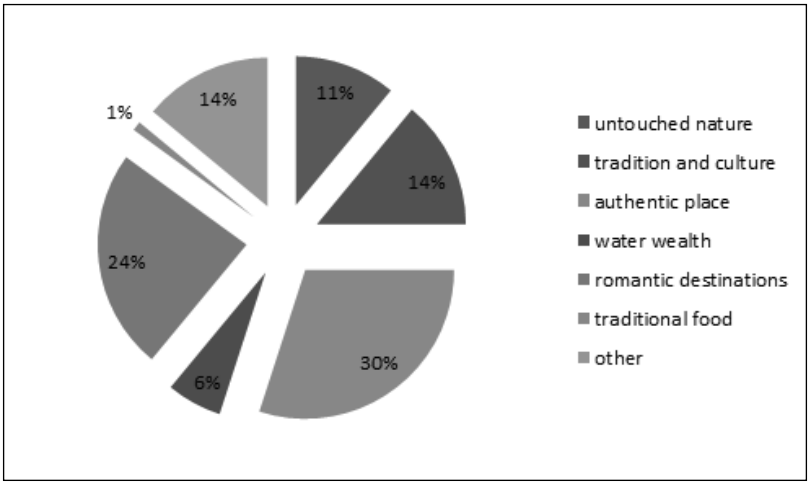
| The most common source of information about the destination | |
|---|---|
| Recommendation | 35% |
| Previous visits | 30% |
| Work | 20% |
| Travel agencies | 11% |
| Media | 4% |

Source: questionnaire.

The following data were related to the source of information that tourists get in different ways: recommendations, previous visits, media, travel agencies, work. The answers show that the guests came to the greatest extent on the basis of recommendations (35%). Followed by those in which the destination leave an impression and again they visited (30%). A somewhat smaller number of them received information at work (20%) and via travel agencies (11%) and the media (4%).

To form a particular brand, it is necessary to create an identity for the destination. It is an important aspect of branding destination, bearing in mind that the perception of tourists on the location. Data remind tourists to a particular location are very important because they give real insight and opinions about a particular place. In this sense, the results were analyzed in terms of tourist associations in Vrnjacka Banja, whereas the possible answers were: untouched nature, tradition and culture, authentic place, water wealth, romantic destination, traditional food, and "other".

Figure 3. Association of tourists to the destination



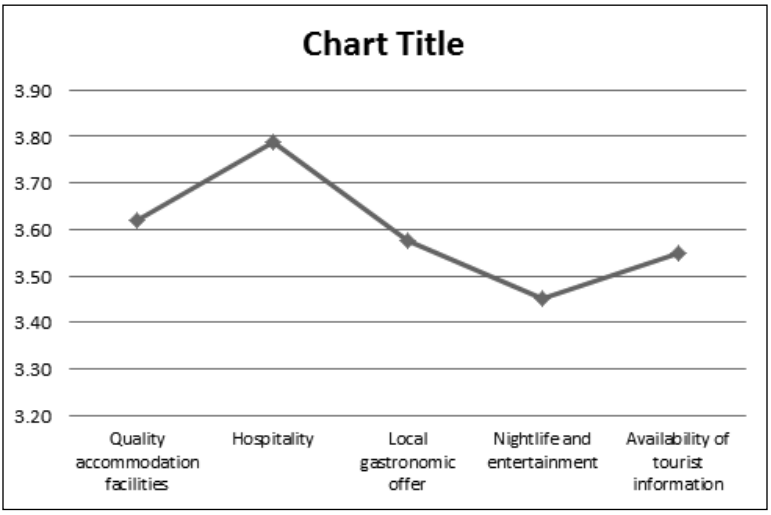

Source: own work.

Set of associations to a particular brand enables to develop a rich, clear brand identity. The research was aimed to determine the condition and benchmarks for Vrnjacka Banja as a brand destination. The results are shown in the diagram, and it can be seen that the largest number of tourists stated that this destination is the authentic place (30%). Due to the abundance of events, cultural and social events, this place represents a good romantic destination (24%). Association of tour-

ists to the region, rich tradition and culture is only 14%, much less the untouched nature (11%). Given that Vrnjačka Banja has seven mineral springs, 6% of respondents think that the Vrnjačka Banja associate to water wealth. As other options of up to 14% of the respondents gave the characteristics of the destination in the form of Love Fest and Carnival, which means that these events become part of a brand destination.

Finally, tourists were asked about assessments of individual destinations offer, in order to evaluate and suggest improvements offer. Evaluation was performed on a scale of 1-5, according to the following criteria: quality of accommodation, hospitality, local gastro offer, nightlife and entertainment, and availability of tourist information.

Figure 4. Average assessments of the overall tourism offer




Source: own work.

On the basis of the average values of which are tourists rated the overall tourist offer, it can be said that the total tourist offer has an average value above 3.5. At the highest level there is the hospitality of the local population (3.8), while the nightlife and entertainment at the lowest level (3.45). Local gastronomic offer is evaluated with of 3.6, and the availability of travel information to grade 3.5.

## 5. Conclusion

Tourism is a service activity that is rapidly changing. Tourists are constantly looking for new destinations and new regions and cultures who want to get to know. In all of this brand destination can offer something new and original that tourists will stay in the memory.

Based on the research, obtained the starting point of view of branding Vrnjacka Banja as an attractive and original destination:

- based on previous experience of tourists, 30% of them have returned again to Vrnjacka Banja;
- also, 30% of tourists considered Vrnjacka Banja for an authentic place.

Bearing in mind that the destination has voluminous capacity for rehabilitation, the reason for the small number of tourists who visit for this reason that the destination is age of respondents, which included younger population, up to 35 years. Regarding the reason for the visit, the expected figure was that most people come for business seminars, training sessions and meetings and for rehabilitation. However, research has shown that the Vrnjačka Banja primarily is a holiday destination and thereafter for business and visiting friends.

It may be noted that the destination is not only a tourist region, but also tourism brand or a positive going towards building a successful tourist brand.

Recommendations for future brand building go in order to stimulate the development hospitality services with traditional food and drinks, bearing in mind that only 1% of respondents claimed to have a destination reminds of the traditional food. This confirms the milestones that got the lowest average grade quality and the existence of local gastronomic offer of 3.5. As a brand for which most stands out and comes Carnival Love Fest, which indicates that we should support this event in the future.

Although there is no officially established benchmark values, it can be concluded that there is a high value reinstatement of tourists and traffic to destinations, which shows a tie with the hypothesis set at the beginning of the study. However, research has not extended to foreign tourists, but the above data can justify the epithet given to Vrnjacka Banja – Serbian Karlovy Vary.

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