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**THE PHENOMENON OF FOREIGN MIGRATIONS  
AND SELECTED ASPECTS OF THE DEVELOPMENT  
OF HUMAN CAPITAL**

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**Key words:** foreign migrations, talent management, human capital.

**A b s t r a c t**

Certain regions or countries attract and succeed in retaining the existing demographic potential. Others undergo stagnation or even regress, which in extreme situations can lead to depopulation. This issue is important, as it is the inhabitants of given territories that initiate and create certain activities, values and changes in their environment. Today, attracting, retaining, developing and maintaining employees present a particularly difficult challenge, with migrations making it even more difficult.

The paper addresses the issues of selected aspects of the development of human capital in the face of foreign migrations with Poland as an example. Human capital is shaped by multiple factors. It is a complex process. The aim of this paper is to show the effects of foreign migrations in the practice of human resource management. On the one hand, management theoreticians and practitioners emphasize an increasing importance in the use of human capital; on the other hand, its waste can be seen in many situations.

**ZJAWISKO MIGRACJI ZAGRANICZNYCH A WYBRANE ASPEKTY KSZTAŁTOWANIA  
KAPITAŁU LUDZKIEGO**

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**Słowa kluczowe:** migracje zagraniczne, zarządzanie talentami, kapitał ludzki.

### Abstrakt

Określone regiony bądź kraje przyciągają i potrafią zatrzymać istniejący potencjał demograficzny. Inne podlegają stagnacji lub nawet regresowi, co w skrajnych sytuacjach prowadzi wręcz do wyludnienia. Ten problem jest ważny, ponieważ to mieszkańcy danych terytoriów inicjują oraz kreują pewne działania, wartości i zmiany w swoim otoczeniu. Przyciąganie, zatrzymanie, rozwijanie i utrzymanie pracowników obecnie jest szczególnie trudnym wyzwaniem, a migracje sprawiają, że to wyzwanie jest jeszcze trudniejsze.

W artykule podjęto tematykę wybranych aspektów kształtowania kapitału ludzkiego w obliczu migracji zagranicznych na przykładzie Polski. Kapitał ludzki kształtuje wiele czynników. To złożony proces. Celem artykułu jest ukazanie skutków, jakie w praktyce zarządzania zasobami ludzkimi niosą migracje zagraniczne. Z jednej strony teoretycy i praktycy zarządzania podkreślają coraz większe znaczenie wykorzystania kapitału ludzkiego, a z drugiej w wielu sytuacjach obserwuje się jego marnotrawstwo.

## Introduction

Migrations are a form of satisfying needs that involves a change in the place of residence. They emerge and take place under the influence of phenomena and events that are referred to as migration factors (JĘDRZEJCZYK 2016, p. 67). According to D. JĘDRZEJCZYK (2016, p. 67): „(...) combinations of migration factors are the driving force for relocations through people’s psyche being impacted by such information that shapes the ideas and convictions about the need to change the destination and migration route”. The authors highlighted in their paper the impact of Poland’s accession to the European Union (EU) in terms of taking decisions about foreign migrations. The paper addresses the issues of selected aspects of the development of human capital in the face of foreign migrations with Poland as an example. Human capital is shaped by multiple factors. It is a complex process. The aim of this paper is to show the effects of foreign migrations in the practice of human resource management. To achieve the formulated aim, literature analysis, source materials and statistical data presented in tables have been used.

Foreign migrations of population are defined as population relocations involving a change of the country of residence. The EU Regulation (EC) no. 862/2007 of the European Parliament (EP) and Council of 11 July 2007 contains a definition of migration that refers to it as a planned period of residing in another country for at least 12 months (Rocznik Demograficzny 2015, p. 415). Within the meaning of this definition, immigration is defined as “an arrival in a country of a person who has previously been a resident of another country with an intention to stay in it for a period of at least 12 months” (Rocznik Demograficzny 2015, p. 415). Emigration, in turn, is the “leaving of a country by its resident with an intention to stay abroad for a period of at least 12 months” (Rocznik Demograficzny 2015, p. 415).

Migrations of this type that involve a change of the country of residence for a period of at least 12 months are referred to as foreign long-term migrations (Rocznik Demograficzny 2015, p. 415).

Foreign migrations can be both a chance and a threat in terms of the development of human capital. By viewing employees in this way, attention can be focused on the key objectives of people management. These objectives include the acquisition and retention by an organisation of skilled, committed and properly motivated employees that are desired by the organisation (BARON, ARMSTRONG 2008, p. 196, 197). Appropriate management of human resources and effective use of the potential in them can transform them into the most valuable asset of a company – human capital (KRÓL 2008b, p. 119). Creation of human capital is a difficult challenge. Both an organisation and an employee play a part in it. An organisation may for that purpose train employees, for example, or relocate those employed and implement work restructuring. It may also define its motivation system, organisational culture and physical working conditions, and provide medical care. The role of employees in this respect involves their participation in training courses and self-education, as well as their physical and psychological well-being (KRÓL 2008a, p. 424). The state and society also make a crucial contribution to the development of individual human capital through the creation of a system of general and vocational education, the health system and national culture. An important role in this aspect is also played by the family (by providing support of various kinds, e.g. in the development of skills) and an individual himself/herself, e.g. through their engagement (KRÓL 2008b, p. 113). In summary, varied and complex factors contribute to the creation of human capital. On the one hand, it is of key importance to strengthen human capital both in individual organisations and regions; on the other hand however, this capital can be easily lost or its value can be reduced.

### **Intensity and directions of foreign migrations in the period 1999–2014**

Migrations are a response to ongoing economic and socio-political processes as well as specific activities in a given territory. Residents of specific territories initiate and create specific activities, values, and changes in their environment, being subject at the same time to an impact from outside. As a result, some regions or countries attract and are able to retain the existing demographic potential, while others undergo stagnation or even regress, which in extreme situations can lead to depopulation (*Krajobrazy migracyjne Polski* 2012, p. 184, 185). Migrations can be used to shape a favourable distribution of the

labour force, among other things. However, when their scale and intensity become huge, they cause a range of negative effects (ZDROJEWSKI 2000, p. 34).

The processes of foreign migrations saw significant changes at the end of the 20<sup>th</sup> century and at the beginning of the 21<sup>st</sup> century. The European Union's policy constituted a driver of migrations in Europe, including Poland. Poles gained full access to the labour markets of selected countries of the European Union on the first of May 2004. The subsequent years saw further EU countries removing barriers to employees from Poland. Freedom of settlement and the possibility of working in EU countries resulted in the mass emigration of young Poles. On the one hand, this phenomenon was caused by difficulties in the labour market in certain areas and sectors. On the other hand, it was prompted by the desire for higher earnings, strong demand for the work performed by foreigners and more generous social security in Western European countries (*Przemiany demograficzne w Polsce...* 2016, p. 88).

Table 1 presents the scale of foreign migrations in Poland (in thousand) in the period 1999–2014. Net migration is the difference between migration departures and arrivals (JELONEK, SOJA 2013, p. 185).

Table 1  
International migration in Poland (in thousands)

Years	International migration			Total net migration
	immigration	emigration	net	
1999	7.5	21.5	-14.0	-14.0
2000	7.3	27.0	-19.7	-19.7
2001	6.6	23.3	-16.7	-16.7
2002	6.6	24.5	-17.9	-17.9
2003	7.0	20.8	-13.8	-13.8
2004	9.5	18.9	-9.4	-9.4
2005	9.3	22.2	-12.9	-12.9
2006	10.8	46.9	-36.1	-36.0
2007	15.0	35.5	-20.5	-20.5
2008	15.3	30.1	-14.9	-14.9
2009	17.4	18.6	-1.2	-1.2
2010	15.2	17.4	-2.1	-2.1
2011	15.5	19.9	-4.3	-4.3
2012	14.6	21.2	-6.6	-6.6
2013	12.2	32.1	-19.9	-19.9
2014	12.3	28.1	-15.8	-15.8

Source: based on Rocznik Demograficzny 2015, p. 30, 31.



In the period under consideration, negative net foreign migration reached its peak in 2006 (-36.0). Over the final years of the period considered, a drop in immigration was observed (from 15.2 thousand in 2010 to 12.3 thousand in 2014). It was quite different from the situation connected with emigration, which recorded an increase (from 17.4 thousand in 2010 to 28.1 thousand in 2014). The net foreign migration stood at -19.9 thousand in 2013 and at -15.8 in 2014 respectively, and was the largest after 2007. Negative net migration is a concern; especially given its significant growth in the most recent years.

The following countries remain the main destinations of Polish temporary emigration: The United Kingdom, Germany, The United States, Ireland, Holland and Italy (*Podstawowe informacje...* 2015, p. 15). The year 2014 was the third year in a row in which a decrease in population took place after an earlier increase in the period 2008–2011. Nevertheless, the speed of population decrease in 2014 was -0,03%, which means that per each 10 thousand members of the Polish population, the number of inhabitants was reduced by 3 persons (in 2013, it was -0,1%, i.e. it was reduced by 10 persons, respectively). It is necessary to emphasize that the total population of the country is characterized by a natural mobility and emigration abroad (*Podstawowe informacje...* 2015, p. 1).

Foreign migrations, as a socio-economic phenomenon, are a permanent element of the modern history of Poland. The choice of the emigration country is determined by living conditions in the host country, and the attitude towards immigrants shown by residents of the host country, historical considerations, location of the country and information about the experiences of loved ones. The main reason for going abroad is the desire to take up a job, and it is estimated that around 80% of temporary emigrants from Poland stay abroad for at least 12 months. For the vast majority, this was the purpose of emigrations between May 2004 and the end of 2014. Although the vast majority of Polish emigrants stay abroad because of work, there is also an increase in the percentage of their dependants (family members) (*Informacja o rozmiarach i kierunkach...* 2015, p. 1–4).

Emigration has many positive aspects, e.g. OLEKSYN (2014, p. 543):

- mastering a foreign language,
- learning about other countries and cultures,
- acquiring skills and experience,
- learning mobility.

However, it also results in many negative changes in the demographic structure of population and shortages of labour force. If emigration involves population at the peak of their working age, the population age structure becomes distorted. This leads, for instance, to a decrease in population growth, and as a result the society ages faster (JELONEK, SOJA 2013, p. 90, 91). The

situation where there is a shortage of employees is not advantageous for a country. In such circumstances, it is difficult for entrepreneurs to create a team of employees who will meet their requirements. The society, in turn, has problems with access to the results of the work of professional groups, of which the labour market is short.

According to the findings of the report *Shortages of talents'* published by ManpowerGroup, 45% of employers in Poland struggle to find employees with competences that are necessary for a specific post. In the global ranking, covering 43 countries worldwide, Poland occupied a position in the top half. The scale of this phenomenon reached the highest level over the last 6 years, exceeding the global percentage, which is 40%. At the top of professional groups suffering from the biggest shortages of talents are qualified blue-collar employees. This professional group includes, among others, mechanics, electricians, plumbers, welders, carpenters, cooks, printers, and masons. The second place is occupied by drivers, with engineers occupying the third position. They are followed by: production/machinery operators, unqualified blue-collar workers, technicians, restaurant and hotel workers, IT department employees, doctors and medical staff, as well as sales department managers (*Rozgrzyźć niedobór talentów* 2016, p. 1, 2).

Human capital is not a constant value. It can change depending on processes that affect an individual, and migration is one of them. Migrant people possess a certain human capital that includes, among other things, education, professional qualifications, skills with human contacts, values and standards (*Společne skutki...* 2014, p. 32). A professional path depends to a large degree on human capital possessed by an individual, thus the opening of EU labour markets to Poles theoretically created the following opportunities (*Společne skutki...* 2014, p. 34):

- using abroad the qualifications acquired in Poland,
- using the capital gained abroad in a professional career after returning to Poland.

The authors of the report *Social effects of post-accession migrations of the population of Poland* stress that Poles, when they make a decision about migration, are fairly well-equipped in terms of education and professional qualifications. However, high education acquired in Poland, which is an important element of human capital, is not always relevant in another country. A migrant qualified under the Polish education system does not always have qualifications that are transferable to a foreign labour market (*Společne skutki...* 2014, p. 34).

Human capital can be increased, but it may also depreciate. Depreciation means physical and economic (moral) usage. Physical usage is the partial or complete loss of the acquired knowledge and qualifications. Economic depreci-

ation, in turn, occurs when education and skills become obsolete, and are no longer useful (KRYŃSKA, KWIATKOWSKI 2013, p. 148). Economic migrations are very important for developed countries, as workers from abroad (CASTLES, MILLER 2011, p. 297, 298):

- provide additional labour force in periods of shortages resulting from economic and demographic changes,
- perform specific types of work which domestic workers for various reasons do not want to do,
- have an impact on the maintenance of flexibility in the labour market, stimulating investments and economic growth.

According to the report *Social effects of post-accession migrations of the population of Poland*, the impact of post-accession migration also covers standards, values and behaviours which are an effect of migration. Sometimes, people with migration experiences are initiators of social changes in local communities (*Spoleczne skutki...* 2014, p. 40).

The use of human capital in the context of migration involves, among other things (*Spoleczne skutki...* 2014, p. 35):

- undertaking economic activity after returning,
- actual use of the qualifications and skills acquired abroad at the workplace and beyond,
- functioning in the local community.

This paper concerns foreign migrations based on data from Poland, but it is worth highlighting that the problem of foreign migrations does not only concern Poland. Never before have so many different nationalities, as well as professions, migrated on this scale and with this frequency. This is mainly due to the increasing integration of countries. There are however some risks to globalisation. One of them is a lack of the sense of belonging. A globalised life runs beyond borders, which for most people marked a certain community. Countries which for centuries were ethnically homogeneous are transforming into multinational countries (KUBITSKY 2012, p. 19).

Summing up, the intensity of foreign migrations is a reaction of migrants to economic and socio-political changes. The net migration rate is a concern, and it is fundamental to take actions to reduce emigration. At the same time, there is a need for a greater focus on an effective use of the potential of immigrants. This is still an important and contemporary topic due to the need to develop human capital, which is of key importance for modern organisations. Migrations can bring numerous benefits, both to individuals and the countries they affect. On the other hand, migration may bring many negative changes. However, in order to make the most of the potential of those deciding to migrate abroad, it is worth paying attention to the importance of the management of talents.

## **Management of talents and foreign migrations**

Knowledge, skills and capabilities of individual employees comprise a value. Therefore, it is of key importance to attract, retain, develop and maintain human capital represented by such employees (ARMSTRONG 2011, p. 76). These tasks are difficult challenges for an organisation. This paper does not tackle all factors that impact the scale of this difficulty. The authors address two aspects. The first refers to selected circumstances impacting the decisions made by organisations in the area of human resource management. The second concerns the problem of an organisation acquiring desired employees.

Migrations generate various challenges, including challenges to those managing organisations. Z. Janowska stresses that economic, political and demographic transformations bring serious social consequences which impact the processes of performing work. These consequences include a reduction of labour costs, which as a rule involve employment reduction. In such a situation, human potential is not used. Care for an employee loses to the overriding idea of profit. According to Z. Janowska, the reality in the labour market is at odds with the standards of human resource management and a certain contradiction can be observed. On the one hand, there is an increasingly widespread emphasis, among other things, on the importance of developing an employee's commitment, use of talents, and balance between work and private life. On the other hand, organisations have become dysfunctionally more flexible, and employee rights are not respected as a result (JANOWSKA 2015, p. 42, 43). Varied forms of employment refer both to domestic workers and migrants. S. Castles and M.J. Miller stress however that the most uncertain posts are occupied by people who are in the least advantageous situation: unregistered employees, female immigrants, as well as ethnic and racial minorities (CASTLES, MILLER 2011, p. 298).

Emigration and immigration of employees are among factors impacting the volume and structure of labour supply (PAWLAK 2011, p. 66). It is therefore important that the labour market in Poland encourages employees to stay in the country, as well as encouraging emigrants to return. This is because we must bear in mind that emigrants may in many cases not return to the country, especially the young workers who have started families abroad. The basic changes that need to be made in order to stop labour migration include: offering jobs with potentially good pay, professional development and work promotions in the country. An incentive for staying in the home country may be the facilitation of the process of running a business activity and support for the development of entrepreneurship. Labour emigration can also be halted by taking actions to stop professional deactivation in the group of older employees; especially those in good psychophysical condition and with high

qualifications (OLEKSYN 2014, p. 543–545). It is worth stressing that in terms of migration, a fundamental role is played by social policy. It monitors its structure, conditions and consequences. It makes sure that employee rights are protected and respected, and promotes integration (*Polityka społeczna* 2013, p. 312).

It is also important that the potential of immigrants is properly used. In particular, the problem today is a waste of qualifications. It may refer to both the youth and people in adulthood, as well as culturally diversified employees and people suffering from social exclusion. Z. Janowska stresses that there is a need for a wide scientific and public discussion, backed up by interdisciplinary studies, to stop the increasing waste of human capital (JANOWSKA 2015, p. 42, 43). Organisations that are able to provide favourable working conditions attract talented employees. Such conditions include, among other things, autonomy, creation and development possibility, attractive remuneration and employment prestige. If organisations want to have the best people in the labour market, they need to make sure they are perceived as an attractive employer. Naturally, this does not mean that little known organisations do not have any chances to attract the best employees. However, if it is important for them to have good staff, they should have something attractive to offer. Nevertheless, it is worth stressing that the management of talent is not only about attracting and then retaining gifted people. It is important that they are tested in practice and assigned appropriate roles. It is also particularly important to create a wide range of activity possibilities and focus their efforts on the achievement of desired results (OLEKSYN 2014, p. 201–203). A. Baron and M. Armstrong stress that every employee of an organisation has some talent, therefore the process of talent management should not be limited to selected people (BARON, ARMSTRONG 2008, p. 124). Quiet heroes who make sure that an organisation is highly efficient are ordinary, competent employees who perform their work at a sufficiently high level all of the time (BARON, ARMSTRONG 2008, p. 124, behind: DELONG, VIJAYARAGHAVEN 2003). Meanwhile, many situations result in a waste of human capital.

Summing up, a serious problem in many organisations in Poland today is difficulty in gaining employees. New solutions to this problem are continuously searched for. The authors of the report “Shortages of talents” point out that employers may tackle such problems by performing the following actions (*Niedobór talentów* 2015, p. 5):

- developing new practices in the area of human resource management,
- encouraging employees to manage their own careers, and to care about the culture of science in their organisations,
- exploring unused resources of new talent (e.g. attracting employees from other regions),
- shaping a unique value proposition for employees.

## Conclusion

Migrations are one of the most important factors of the socio-economic development of a country, its individual regions, cities and villages, as well as specific organisations. The level of knowledge, skills, entrepreneurship, creativity and health status impact the position and role of human capital. These features, as well as other desired properties of human capital, are shaped by demographic investments (investments in human beings). The quality of human resources of a given territory is thus an effect of long-term demographic transformations which are affected by numerous factors (*Przemiany demograficzne Pomorza...* 2012, p. 19).

The aim of this paper was to present the effects of foreign migrations in the practice of human resource management. They may represent both a chance and risk in the development of human capital. They teach mobility and new skills, as well as help acquire new qualifications. Skilful use of human capital, in turn, is reflected in many areas of socio-economic life. However, foreign migrations may also lead to the depreciation of human capital, which may be lost forever. It is thus important to take actions to reduce the scale of labour migration. At the same time, it is worth appreciating actions that are aimed at fully using the potential of employees. In the case of potential emigrants/emigrants, such an approach may motivate people to change their decision about emigration. In the case of immigrants, it may represent a chance for strengthening human capital.

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**INFLUENCE OF INTEGRATION PROCESSES  
ON MODERN FORMS OF A CLUSTERING  
OF ECONOMY**

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**Key words:** economic integration, concepts and schools of integration, clusters of enterprises, territorial marketing, international competitiveness, investments, public-private partnership.

**A b s t r a c t**

In this article the authors analyze the theoretical aspects of the economy under the conditions of modern processes of integration. The authors describe the existing schools and concepts of integration. Modern studies focus on the evolution of integration processes, which has largely affected the key elements of the world economic mechanism.

There are features and advantages of clusters in the context of strengthening regional integration. The factors of the regional economy, which contribute to the increased efficiency of clusters and the territory as a whole at the micro and macro levels, are determined. Also, components of the strategy of cluster development are grounded.

## WPLYW PROCESÓW INTEGRACYJNYCH NA NOWOCZESNE FORMY KLASTERYZACJI GOSPODARKI

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**Słowa kluczowe:** ekonomia integracji, koncepcje szkoły integracji, klastry przedsiębiorstw, marketing terytorialny, konkurencyjność międzynarodowa, inwestycje, partnerstwo publiczno-prywatne.

### Abstrakt

W artykule autorzy przeprowadzili analizę teoretycznych aspektów gospodarki w warunkach istniejących, współczesnych procesów integracji. Autorzy scharakteryzowali koncepcje integracji w kontekście teorii różnych szkół. Badania skoncentrowano na rozwoju procesów integracyjnych, które w znacznym stopniu odnoszą się do elementów ekonomicznego mechanizmu światowego.

W artykule ukazano cechy i zalety klastrów w kontekście wzmocnienia integracji regionalnej. Przedstawiono i omówiono czynniki gospodarki w aspekcie regionalnym, które przyczyniają się do wzrostu efektywności klastrów i terytorium jako całości w skali mikro i makro. Określono również oraz uzasadniono elementy strategii rozwoju klastra.

## Introduction

In the second half of the 20<sup>th</sup> century, the processes of economic integration started to actively develop in the developed countries. The scale of economic development in bordering countries, where the domestic product grew higher than the national market average as did the social division of labour, further enabled economic integration.

Social division of labour is an objective process of productive force development that is associated with the separation of jobs, specialization of production units and the exchange of activity outputs between them. Social division of labour determines its subsequent integration, and the relationships between individual profiled parts are known as clusters.

Clusters in the information economy play the role of a bridge between public and private capital, fundamental research and technological innovation. In a market economy, the social sphere and the environment remain out of the focus of big business, so that in most industries there is a tendency to pump resources out of business. In such circumstances, the state does not have leverage on the private business development strategy. Therefore the search for reasons to build relationships within the public-private partnership is a relevant aspect of regional development. In this context, the clusters enable high efficiency of industrial and socio-economic development of the region.

Currently the cluster development theory is widely discussed in the framework of the Organization for Economic Cooperation and Development (OECD), the World Trade Organization (WTO), the EU and the US. Clusters are seen as a key tool for attracting FDI, the development of the fifth and sixth technological structures within the national innovation strategy, improving the international competitiveness of countries. For example, the EU formed a pan-European model to stimulate the growth of clusters by means of national and regional funding and increasing co-operation between them.

Ideas about the benefits of a clustered business organization emerged in the late XIX century in Alfred Marshall's work "Principles of Economics", which first noted the strategic effect as a consequence of the merger and the increasing specialization of commercial structures.

E. DAHMEN (1950) on the example of Swedish corporations showed the innovative dynamics of their development through mutual support within clusters ("blocks of development"). L.G. METSON (1987) investigated the intracuster interaction. M. PORTER (1993) compared the competitiveness of clusters and countries. M. ENRIGHT (1995) and S. ROSENFELD (1996) developed a system to classify clusters (WELFORD 1995).

### **Theoretical aspects of integration of regional processes**

Economic integration is the process of combining elements of national economies, and, at present, the highest level of internationalization of economic life. One result of internationalization is the structure of the world economy, with its markets for land, goods and services, capital, labour, monetary, financial and credit systems.

Regional economic relations are inextricably linked to the processes of internationalization, since they provide the basis for industrial specialization of regions and the need for integration with other regions, especially the neighboring ones (BILCZAK et al. 2015, BILCHAK 2012).

There are a lot of economic schools and concepts of regional integration that create a very complicated system. A closer look shows that the system has undergone a certain evolution.

The science of economics deals with objective transformations through the prism of its own scope of research to consider economic relations through the economic mechanism of production factor operation and development. The economic mechanism is a system of methods and instruments for regulating the process of social reproduction based on economic laws that are general and specific to the formation.

The modern day economic mechanism has three principal regulatory elements. In this study each of them represents a different mainstream direction of economic thought. The key element of the mechanism is the natural market regulation of social reproduction that in the 17<sup>th</sup>–19<sup>th</sup> centuries contributed to the classical bourgeois political economy with its ideas of free trade and a deeper faith in the omnipotence of the market.

Monopoly regulation associated with the deviations in the development of the global economic mechanism is another element thereof. It has a purposeful impact on the market for the benefit of one or more of its agents. This modification of the capitalist economic mechanism triggered the emergence and development of various *monopolistic competition* theories (E. Chamberlin, R. Triffin etc.), *imperfect competition* (J. Robinson) theory, the theory of *oligopoly* (A. Kaplan, J. Clarke), the *fields and poles* of economic growth (F. Perroux), and the *economic system*, which states that modern capitalism contains, in essence, two systems, the market and planned, which counterweigh each other (J.K. Galbraith).

The third major element of the capitalist economic mechanism is state regulation of certain aspects of social reproduction in the national economic system, or interstate regulation on an international scale. Such regulation is target-oriented and is therefore opposed to spontaneous markets. However, the last two elements are not only in cooperation with each other but can also stand against each other. This can be expressed, for example, in antitrust regulations by the state.

Expansion of government intervention in economic processes (especially after the crisis of 1929–1933) is embodied in various theoretical concepts of government regulation of the economy (W. Sombart, J. Maynard Keynes, A. Hansen, S. Harris et al.). In the 1920s the German economist and social scientist Werner Sombart (1863–1941) developed a theory of the mixed economy according to which the developed economies as a result of economies of scale and economic activities of the state evolved from a system of private enterprise in a mixed economy consisting of private and public sectors which mutually complement each other. After World War II, a strong supporter of

this concept was the American economist Alvin Hansen, a representative of Keynesianism (1887–1975) who believed that the control of the modern economy of developed countries is exercised by public and private institutions in order to improve the social welfare of the people and that the economic and social activities of the state can eliminate the contradictions of capitalism, ensure crisis-free development of the economy, and sustain high growth rates.

These “stages of evolution” can be traced in the development of the theory of international regional integration, the mechanism of which serves as the international version of the national economic regulatory mechanism.

There are several points to be made about the mechanism of regional integration. First, it began to develop even in the existence of all three elements of the economic mechanism within sovereign states. Therefore, when projected on the regional scene, these elements were not transferred one after another but all at once. The transfer process that took place leaned towards a market economy, which played a major role in the integration mechanism, as well as the process of purposeful development of the inter-regional, cross-border economic co-operation related to the initial stage of the weakening of the state regulation of foreign economic relations of the member countries.

Consequently, the market school acted as the first school to theorize regional integration. Its representatives were among the first who tried to provide a theoretical explanation of the regional integration. Those include the American economist Ludwig von Mises, the Swiss economist Wilhelm Röpke, and the French economist Jacques Rueff.

These scholars (and some other representatives of this school) have been consistent supporters of the basic principle of economic liberalism, i.e. the recognition of the market as the best regulator of the economy, which cannot be replaced by any “artificial” economic regulation mechanism by the state. Moreover, according to liberal economists, government intervention in economic processes can cause nothing but a violation of the normal functioning of the economic system.

The idea of a disconcerting role of state regulation in economic processes is transferred by representatives of that school to the area of foreign trade. As early as 1934, a Swedish economist G. Cassel, whose ideas had a great influence on the contemporary theory of international trade, claimed that all the economic woes in the capitalist world stemmed from protectionism (CASSEL 1934).

This position is most clearly expressed in the works of W. Röpke who stated, “One thing is clear, i. e. excessive government intervention by misleading the market economy from the way prescribed by the mechanisms of competition and pricing, the pile of commandments and prohibitions, blunting initiatives, the official pricing and limitation of the key economic freedoms

should lead to errors, bottlenecks, sub-optimal action and all kinds of distortions. At first, all this is still relatively easy to overcome but with the deepened state intervention it would eventually end up with the overall chaos" (RÖPKE 1971).

In the views of market school economists, regional integration's key focus is on creating such international economic space, which would restore the violated rights of the self-sustaining market mechanism, the elemental forces of which are optimally adjusted to the economic life of the bordering countries.

Thus, full integration, according to the representatives of that school, is the achievement of a single market space between several countries where there is full freedom for competition and natural market forces.

Another school theorizing regional integration was the market-institution school based on the principles of neoliberalism. The representatives of this school were Jean Weiler, Maurice Allais, Bela Balassa, Hans Kramer and Klaus Meyer who considered regional economic integration both as a process and as a state of affairs. As a process, regional integration includes measures designed to eliminate discrimination between businesses belonging to different national states; considered as the state of the economy, it can be represented as the absence of various forms of discrimination between national economies (ALLAIS 1972, BALASSA 1962, MEYER 1966).

By the absence of discrimination, representatives of the market-institutional school meant the absence of any restrictive measures on the part of the governments that suppressed the freedom of action of private business in the integrable region, including market monopolization freedom. In other words, the need to harmonize the economic policies of the countries involved in integration is only a supporting element to create optimal conditions and ensure functioning of the market mechanism.

The scientific concepts and conclusions of G. Kramer, B. Balassa, K. Meyer and others have been fully confirmed by modern theoretical studies that are convincingly supported by the example of Western Europe (BALASSA 1962, KRAMER 1969, MEYER 1966). At the end of the 20th and beginning of the 21st century, Europe has seen three interconnected regional integration processes. The first concerns the winding down of borders within the European Union (EU) and transferring them to the external borders of the states involved in the integration. Secondly, there is a convergence of intellectual, cultural, political, trade and economic contacts, both within the integration itself and states on the other side of the external EU borders. Thirdly, economic integration had a positive impact on the processes of clustering.

## **Role of clusters in the context of solidifying regional integration**

The need to create clusters in the modern economy arises without doubt, which is proven by the works of leading scientists in this field. The aim of this paper is to reveal the features and benefits of clusters in the context of strengthening regional integration. Results: a cluster is a group of geographically localized enterprises which are directed toward the satisfaction of consumer demand and the increase of the region's competitiveness in the global market.

The directions of clustering activity can take various forms depending on the scope of activities: from cities to regions. This may bring together a number of countries. Depending on the industry and the coverage of distribution channels, the interaction may bring together a cluster of public authorities, local governments and research institutions.

Accordingly, in both developed and developing countries the economic efficiency of the clusters is different due to the varying degrees of integration of its participants.

Factors that contribute to the increased efficiency of clusters include:

- production of final or intermediate products (extraction and processing of raw materials, semi-finished products, machinery and installations);
- involvement of highly specialized manufacturers of equipment and rendering of business services of a specific character in a cluster;
- the presence in the region of financial institutions and the availability of funds;
- interaction with industry related products and activities;
- feedback from consumers, the extensive distribution network, established distribution channels;
- availability of technologies and industries for recycling and processing waste and by-products;
- development of corresponding types of infrastructure (market, production, transport);
- a level of regional training in general and specialized education, as well as professional development services;
- regional and sectoral research centers which ensure the flow of information, conducting research, consulting and technical support;
- centers of product standardization and certification as well as other government agencies that may be part of the cluster, thereby increasing its importance in terms of public-private partnerships;
- strategic alliances and other forms of public cooperation in industrial and commercial areas of the cluster, which support the work of its members in the associative form.

Consideration of the economy from the perspective of clusters has several advantages compared to the traditional grouping according to different sectors or types of production.

Firstly, the clustering does not contradict the theory of competition, according to which each member of the cluster acquires its own competitive advantages which are not in conflict with the sectoral approach in which intra-industry competition is ignored or acquires the character of monopolistic collusion.

Secondly, within the cluster production (commercial) communication reaches a higher degree of efficiency due to the speed and timeliness of information flow about the technological features, the demands of consumers, successful marketing solutions, and distressed counterparts. Also, individual adaptation is highly expressed in clusters, which manifests itself in minimizing competition when targeting specific segments and niches of the market. Eventually, due to these particular features clusters significantly improve the internal productivity, efficiency of attraction and use of innovations, among others in the context of local regional development, as well as an increase in the international competitiveness of the region.

Thirdly, the common terms of regional development and international competition, threats and opportunities for growth allow cluster participants to form a similar development strategy based on cooperation actions and to ensure cooperation between the companies inside and outside the cluster, with government agencies and other institutions of market infrastructure. Such interaction has a positive impact on the cluster members due to the shared infrastructure and results of public and private investment in the relevant region.

Fourth, the selection of clusters in the industry structure enables the reduction of corruption, including industry lobbying, preferential subsidies and unfair decreases of the tax burden. There is no misallocation of investment and targeted funding, which may distort the existing market structure.

Fifth, the lack of direct competition of cluster members with each other does not weaken it towards external competitors, reducing the intensity of production and business activities; companies are not afraid to weaken each other and strengthen competitors.

Ultimately, industry development based on cluster theory can increase the flow of capital and technology, direct investment, which in addition to financial resources introduces new technologies and intellectual resources, management skills, and world-renowned brands into the region. Regional competition stimulates the growth of the international competitiveness of the cluster in contrast to a sectoral approach, which distorts the competitive relationship.



There are two main types of clusters:

- “horizontally integrated” – formed by combining small and medium-sized enterprises (Italian model);
- “vertically integrated” – formed by combining small and medium-sized enterprises around large industrial structures (Scandinavian model).

Industrial and commercial ties have a stimulating effect on the development of different types of innovation and the introduction of more efficient technologies, and can significantly improve economic performance. This contributes to the intensification of information exchange and the promotion of new products to distributors and to end users. The increasing interdependence of the cluster members reveals new possibilities of competitive advantage. Clustering enables participating companies to escape from inertia through the development of partnerships and the interests of each other, with a focus on internal problems. This significantly improves their competitiveness and has a positive impact on their progressive development.

Thus, the cluster is a community of closely related firms (both economically and geographically) with an adjacent profile, which facilitates the overall development and growth of each other’s competitiveness. Mainly it is an informal group of large leading companies with many small and medium enterprises, the creators of technology oriented to similar customer segments within a single chain of product promotion, focused on a limited area and carrying out joint activities in the production and supply of a certain type of products and services. The role of big business in the process of cluster formation is to attract small and medium-sized enterprises to establish production on the basis of close cooperation and subcontracting relationships with active business and information interaction. This contributes to the development of all cluster members and provides them a competitive advantage compared to other separate entities that do not have such strong relationships.

The development of clusters enables national economies to develop and maintain their competitive advantage, focusing on competition with the countries that are socio-economically and technologically developed. Cluster members invest in specialized research, the development of related technologies, information, infrastructure and human resources, which results in a synergistic effect and enables small businesses to survive in the increasing competition of the global market. Within a state, clusters serve as points of growth for the domestic market and provide promotion of their goods and services to international markets. This enhances the international competitiveness of a country as a whole through a number of inherent advantages of the cluster form of interaction among large, medium and small businesses in all areas of business relations. As a point of economic growth, clusters attract major investments, which are closely watched by the government and local administrations.

Clusters have increased economic and innovative potential. This is due to the transfer of technologies and products with a high value for the target market, as well as the availability of other competitive advantages with respect to related companies, which boosts the quality of semi-finished products and thus improves competitiveness. Increased competition among the cluster member companies in all types of markets (both internal and external) leads to a substantial expansion. Through close collaboration, the firms in a cluster adopt the same business idea, which provides them with a privileged position in the domestic and foreign markets. This includes, for example, an increase in the use of knowledge, or the creation of new networks of cooperation within clusters aiming at improving competitiveness and developing new market niches.

The cluster approach is of particular importance for small businesses. Some experts see it as an effective way for small forms of enterprises to survive in the global economy (BILCHAK et al. 2009).

In the context of regional integration, competitive advantages of clusters depend on the information flow vector, the degree of freedom in the exchange thereof, and the readiness to jointly implement the collective decisions that match the interests of the cluster.

In an information economy, the regional structure of a cluster is particularly crucial. Not all clusters are capable of realizing a competitive advantage based on the concentration of activities and resources. Thus, cluster associations in emerging economies comprise fewer companies compared with clusters formed in economically developed countries, and they are characterized by a different social structure, even though they are still regarded as one of the most important ways of socio-economic development.

The development strategy for high-tech clusters involves the implementation of new approaches in different sectors of the economy: science and technology, education and training / retraining, export promotion and investment mobilization. The level of socio-economic development of a region is strongly influenced by the local and national authorities, although the regional component of a cluster is always dominant. In some cases, the influence of governments crosses national boundaries when the cluster covers a number of neighboring countries and they form a coherent regional policy.

At the microeconomic level of regional integration, the cluster theory shows that the choice of location should be based on the level of income and expenses as well as the overall capacity of the cluster in terms of system effectiveness (synergy).

The degree of success of the cluster regional integration strategy depends on the interaction of several factors:

- acknowledgement of the clusters' progressive role in the development of the regional economy and recognition of clusters as subjects of economic relations;
- formalization of state policy towards clusters (initiation procedure, laws and regulations);
- the concept of long-term vision and the role of clusters (strategy, programs, motivation, control, place in the strategy of socio-economic and technological development of the region);
- state support of cluster initiatives (especially at the stage of cluster formation);
- active use of government contractual work as the primary instrument of cluster support and the formation of strategic directions for its development in the context of the development of new technologies;
- development on a scientific and educational basis;
- innovative market infrastructure (business incubators, technology and science parks, venture investment institutions, offshore centers and other special economic zones);
- active marketing policy of the state and regional authorities, public (international) organizations aimed at the presentation and promotion of clusters in the global market;
- free access to strategic and marketing information for cluster member companies.

It has been proven that clusters are one of the most effective ways of regional development, which overcome a number of disadvantages in the information economy.

Firstly, the information economy cannot provide a high efficiency for industry, which developing countries need in terms of social and productive infrastructure development, fundamental research, applied research, and pilot production.

Secondly, the capabilities of a centrally planned economy with respect to the formation of clusters and scientific / production associations are much higher than the willingness of businesses to bear the costs of large-scale organizational R&D; not to mention its implementation in production. On the contrary, within a cluster a set of small and medium-sized enterprises are able to take on innovative development in the “utility room or garage”, as it was during the time of the formation of high-tech clusters in the US and the EU, and to ensure the formation of new high-tech industries in developing countries.

In today's world of high technology, clusters play an essential role. Owing to the development of new clusters and public support for existing ones, technologically developed countries are constantly improving their interna-

tional competitiveness and the overall standard of living of their population. There is a trend of moving production to lesser developed countries with the exception of clusterized production. The latter demonstrates operational efficiency that exceeds the economic advantages from moving production abroad. Examples of this are Silicon Valley and Detroit in the US, telecommunications in Finland, Portuguese wine, and the fashion industry in Italy.

Clusterization contributes to:

- developing effective ways of interaction between government and business, focusing on the establishment of public-private partnerships;
- enhancing of the multiplier effect, which manifests itself in an increase in turnover of investments, in the growth of profitability and competitiveness of the region;
- transformation of science and education from subsidized social services into high-yielding activities;
- increased integration of regional cluster formations in the global system of world partnership;
- strengthening the region's independence from economic fluctuations beyond;
- promotion of the development of small and medium-sized businesses in the region;
- an increased number of cluster member enterprises, the increase in employment in the region, the growth of wages and deductions to the budgets of different levels;
- an increase in the purchasing power of the population and in the capacity of regional commodity markets, improvement in the investment attractiveness of regions;
- formation of economic prerequisites for the transition from the policy of average investment in industry, to a policy of supporting and promoting the regions that could be classified as "engines of growth" and will be able to show stable dynamics of regional development due to targeted investments in the formation of clusters;
- manifestation of economies of scale and economies of agglomeration, which promote the development of regions that – as "engines of growth" – create impulses for the development of neighboring regions.

At the heart of regional clusterization is a modernization process based on innovation. Structurally, it covers the technical, technological, organizational, managerial and institutional innovations. Consequently, the clusters may have a different focus – innovational, industrial, recreational, financial, agricultural, telecommunications, construction, or fishing; as well as being supplemented by active logistics and marketing activities.

Thus, one of the main factors ensuring the effective development of industry can be a cluster approach as a basis for regional integration.

## Conclusions

The influence of the integration processes, which leave their mark on the basic elements of branch economy, including the formation of clusters is of huge interest to modern science. An important factor which promotes effective clustering is combining its participants into associative groups.

Advantages of cluster formation as a key element of reforming industrial policy are manifold. There is a growing concentration of scientific and industrial potential inherent in a planned economy, while the intracluster competition is maintained, supplemented by the international division of labor, specialization of enterprises in the region, and the establishment of cooperative ties substantially increasing the international competitiveness of regions that are specific to the market economy. It is the presented combination that reflects the specificity of the cluster approach.

As a result of cluster policy, a clear vision of the strengths and weaknesses of industrial development is formed. The productivity of partnership dialogue increases, and the regional economy is diversified. All this leads to an increase in the number of taxpayers, and as a consequence of the increased tax base there is a reduction of dependence on the budgets of individual business groups.

The cluster approach encourages the development of business by promoting a more efficient use of human resources and infrastructure areas. This is done by providing access to the research and recommendations of research centers, which results in lower costs and enables access to new markets.

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## THE ACCOUNTING PRINCIPLES AND FINANCIAL REPORTING RULES IN POLISH AND SPANISH REGULATIONS

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**Key words:** accounting principles in Polish and Spanish regulations, financial statements in Polish and Spanish entities, research and publication of financial statements in Poland and Spain.

### A b s t r a c t

The purpose of the research was to identify differences and similarities in the basic provisions of Polish and Spanish legal acts regulating the accounting principles, elements of reporting and conditions of examination and publication of financial statements of entities.

The Polish Accounting Act lists eight overarching accounting policies, while the Spanish General Accounting Plan describes the same content, however, contained in only six principles. In both countries there are three main elements of the financial statement: Balance Sheet, Income Statement and Additional Information, for all companies with full accounting, and two additional items: Cash flow and Statement of changes in equity for entities whose reports are subject to mandatory examination and disclosure.

The obligation to audit accounts for entities that meet two of the three conditions are the same in both countries, but the total balance sheet value and sales revenue in the preceding year, expressed in euros, in Spain are 12,3% higher than in Poland.

### ZASADY RACHUNKOWOŚCI ORAZ REGULY SPRAWOZDAWCZOŚCI FINANSOWEJ WEDŁUG POLSKICH I HISZPAŃSKICH REGULACJI

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**Słowa kluczowe:** zasady rachunkowości w polskich i hiszpańskich regulacjach, elementy sprawozdania finansowego w polskich i hiszpańskich jednostkach, badanie i ogłaszanie sprawozdań finansowych w Polsce i w Hiszpanii.

### Abstrakt

Celem badań była identyfikacja różnic i podobieństw w zapisach podstawowych polskich i hiszpańskich aktów prawnych regulujących zasady rachunkowości, elementy sprawozdawczości oraz warunki badania i ogłaszania sprawozdań finansowych podmiotów.

Polska ustawa o rachunkowości wyszczególnia osiem nadrzędnych zasad rachunkowości, natomiast hiszpański generalny plan rachunkowości opisuje te same treści, zawarte jednak w sześciu zasadach. W obydwu krajach występują trzy podstawowe elementy sprawozdania finansowego: bilans, rachunek zysków i strat oraz informacje dodatkowe – dla wszystkich firm z pełną księgowością, a także dwa elementy dodatkowe: przepływ środków pieniężnych oraz zestawienie zmian w kapitale własnym – dla jednostek, których sprawozdania są obowiązkowo badane i ogłaszane.

Obowiązek badania sprawozdań dotyczy podmiotów spełniających dwa z trzech warunków, które w obydwu krajach są takie same, ale graniczne wartości sumy bilansowej oraz przychodów ze sprzedaży w poprzednim roku, wyrażone w jednostkach euro, w Hiszpanii są o 12,3% wyższe niż w Polsce.

## Introduction

The accounting principles and financial reporting rules are regulated in the Polish law in the following acts:

- The Accounting Act of September 29, 1994;
- regulations and announcements given by the Minister of Finance;
- resolutions of the Accounting Standards Committee in the form of National Accounting Standards;
- International Accounting Standards.

Under Spanish law, the accounting principles and financial reporting rules are regulated in the General Accounting Plan approved in December 2007, mandatory for all companies as of January 1, 2008. Generally accepted accounting principles are considered to be those set out in the following:

- The European Union regulations on consolidated accounts, in the cases foreseen for their implementation;
- The Commercial Code and other prevailing legislation;
- The General Accounting Plan and sector-specific adaptations;
- The obligatory rules approved by the Institute of Accounting and Auditing of Accounts in the development of the General Accounting Plan and its complementary norms;
- other specifically applicable Spanish legislation.

This article compares the content of the accounting principles, elements of the entity's financial statements and the conditions of obligatory examination and publication of financial statements of entities according to Polish and Spanish regulations.



## **The financial reporting rules in Poland**

### **The Accounting Act of 29 September 1994**

The most important legal act regulating accounting in Poland is the Accounting Act of 29. September 1994. The Act specifies entities which are obliged to maintain books of account. They include in particular:

- commercial partnerships and companies (including organizations) and civil partnerships,

- natural persons, civil partnerships established by natural persons, general partnerships established by natural persons and professional partnerships, if their net revenue from the sales of goods for resale, finished goods and financial transactions for the prior financial year amount to at least 2,000,000 Euros (in Polish zloty),

- foreign persons, branches of a company, foreign entrepreneur representation (in the meaning of The Freedom of Economic Activity Act provisions).

In such an event, the said persons or partners shall be required to notify the tax office about income tax matters before the beginning of the financial year. That amount shall be translated into the Polish currency at an average rate of exchange announced by the National Bank of Poland, as of September 30<sup>th</sup> of the year preceding the given financial year. In that case, persons or partners are obliged to notify this fact before the beginning of the financial year to the relevant Tax Office.

The Accounting Act determines the basic rules regarding in particular: maintaining books of accounts, preparation of financial statements, auditing and the publication of financial statements. Generally, the regulations of the Act shall apply to entities whose registered office or place of executive management is located within the territory of Poland. When certain issues are not covered by the Act, parties may apply National Accounting Standards issued by the Accounting Standards Committee. In the absence of relevant regulations in National Accounting Standards, International Accounting Standards may be used (MICHNIEWICZ 2016).

Books of accounts shall be kept in the Polish language. In practice, this means that all descriptions of transactions, account names, and reports automatically created by the computer system (balance sheet, trial balance, profit and loss account) should be prepared in Polish. Nevertheless the computer system used for keeping the books of accounts may be managed in any foreign language. Simultaneously, books of accounts shall be kept in the Polish currency. This means that business transactions expressed in foreign currencies shall be booked in a manner that allows the amount of the transaction to be expressed in both the Polish currency and a foreign

currency. It should be emphasized that Polish tax regulations provide specific provisions with respect to the calculation of foreign exchange differences as well as the valuation of the transactions conducted in a foreign currency. In practice, transactions expressed in foreign currency should be entered into the system in a manner enabling their settlement both for tax purposes (mainly corporate income tax and VAT) and accounting purposes as well.

### **National Accounting Standards**

In matters not covered by the Act, entities can (this is their right, not an obligation) use the National Accounting Standards and statements of a similar nature given by the Committee of Accounting Standards. However, in the absence of regulations in the NAS, the entities may apply IAS. So far, the following NAS have been issued by the Committee of Accounting Standards: Cash Flow, Income Taxes, Unfinished Building Services, Impairment of Assets, Leasing, rental and tenancy, Provisions, accrued expenses, contingent liabilities, Changes in accounting principles (policy), estimation of values, correction of errors, events after the balance sheet date – booking and presentation, Real estate activity, Directors’ report, Public-private partnership agreements.

Additionally, the Committee of National Accounting Standards has issued several statements regarding:

- accounting for rights (permissions) to emit air pollution,
- assessment of the cost of manufacturing for the purpose of balance sheet valuation,
- accounting for the property rights of certificates of origin for electricity produced from renewable resources,
- some of the principles regarding bookkeeping.

Entities required to maintain books of account and prepare financial statements according to the Act, also have the ability:

- in areas where the Act provides for variant solutions;
- as well as on the issues described in other regulations;
- to adopt solutions tailored to their specific individual requirements and needs (depending on activity, legal form, size).

Although the interpretations in the form of the NAS and the statements adopted by the Committee of National Accounting Standards are recommendations only, in practice they should be considered as the process of establishing accounting policy. Accounting policy should be recorded in written form and updated by the entity manager. Application of the accounting policies in

accordance with the Act helps to ensure the proper quality of financial settlements (true and fair presentation of assets, financial situation and results of the entity).

### **Adoption and application of International Accounting Standards**

Foreign entities have the option of applying for International Accounting Standards (IAS). Note, however, that the option of applying for IAS is dependent upon the fulfillment of certain conditions. IAS can be used in particular by:

- issuers of securities admitted to or issuers of securities intending to apply for admission to or issuers of securities pending admission to trading on one of the regulated markets of the European Economic Area,
- entities being members of a capital group, in which a parent company prepares consolidated financial statements under IAS,
- branches of a company, if the entrepreneur prepares financial statements in accordance with IAS.

A decision with respect to the preparation of financial statements in accordance with IAS shall be taken by an approving body. Annual financial statements prepared in accordance with IAS are subject to annual audits. Entities which do not apply IAS for matters not regulated by the Act or domestic standards may apply IAS (MICHNIEWICZ 2016).

### **Financial statement**

The financial report shall be prepared as of the day of closing the books, which means in particular:

- on the last day of each financial year,
- on the last day of the entity/s operations,
- on the date which precedes a change in legal status or the date of demerger, merger, or a division of entities.

Financial statements include: a balance sheet, a profit and loss account, and notes to the financial statements. Financial statements which are subject to annual audits also include: a cash flow statement, and a statement of changes in equity.

Examination of the financial statements by the auditor is mandatory for:

- joint stock companies,
- other entities which in the prior financial year for which the financial statement was prepared, met at least two of the following conditions:

\* the average annual number of employees, by full-time equivalents, reached or exceeded a level of 50 persons,

\* total assets as at the end of the financial year reached or exceeded the Polish currency equivalent of 2,500,000 euros,

\* net sales of products and goods for resale, plus income on financial transactions for the financial year reached or exceeded the Polish currency equivalent of 5,000,000 euros.

Annual financial statements shall be prepared within three months of the balance sheet date. In the case of some entities, an annual report shall be prepared together with the annual financial statements. Financial statements and an annual report shall be prepared in the Polish language and the Polish currency.

## **The financial reporting rules in Spain**

### **Compulsory accounting in companies**

In accordance with the Commercial Code, section III of Accounting for Entrepreneurs; section one of article 25 states that every entrepreneur must keep an orderly accounting, appropriate to the activity of his company that allows a chronological follow-up of all his operations. It will be maintained directly by employers or by duly authorized persons.

Through the aforementioned Code of Commerce, official books of obligatory compliance are indicated. These are:

a) book of Inventory and annual accounts (art. 28 Bcc.). It will open with the initial detailed balance of the company, and will include quarterly Sum and Balance Checks, i.e. 4 per year. The inventory of year-end closing and the Annual Accounts are described as follows. The Annual Accounts are composed of a Balance Sheet, the Profit and Loss Account, a statement that reflects changes in equity for the year, a statement of cash flows and the report;

b) daily paper (art. 28 Bcc.). This book will record day by day all the operations related to the activity of the company. However, the joint annotation of the totals of operations for periods not exceeding the quarter, provided that their detail appears in other books or records, shall be valid;

c) book of minutes (art. 26 Cco). The mercantile companies will also carry a book or book of records, which will include, at least, all the agreements taken by the General and Special Boards and other collegiate bodies;

d) book registration of partners in limited liability companies or book registration of registered shares in public limited companies since in this type of company the shares can be registered or bearer.

All books that must be carried by entrepreneurs will be legalized electronically in the Mercantile Register after completion by electronic means and within four months of the closing date of the exercise (art.18 entrepreneurship law).

The official books are deposited and kept by the entrepreneurs, who must keep them for six years from the last book entry (art. 30 Cco.). The probative value of the books of employers and other documents will be considered by the Courts of Justice.

Another aspect to emphasize is with regard to the confidentiality of accounting. In the case of compulsory books, the accounting record of business is secret (art. 32).

A different question is with regard to the main accounting document such as the Annual Accounts. In addition to those cited in the Inventory and Annual Accounts book, art. 34 Cco, there are further regulations. It says that at the end of the year, the entrepreneur must produce the Annual Accounts of his company that will include the balance sheet, the profit and loss account, a statement that reflects the changes in net equity for the year, as well as a statement of cash flows and memory. These documents form a unity.

The annual accounts should be formulated expressing the values in euros. The provisions of this section shall also apply to cases in which any natural or legal person formulates and publishes annual accounts.

The Annual Accounts shall be formulated within a maximum term of three months as of the end of the fiscal year, together with the management report and the proposed application of the result (art. 253 LSC).

### **Regulatory Spanish Legislation**

The accounting reform inspired by international financial reporting standards was incorporated by Law 16/2007, 4 July 2007, on reform and adaptation of commercial legislation in accounting matters for international harmonization based on European Union regulations. Its basic and fundamental regulatory development has been authorized by Royal Decree 1514/2007 and by Royal Decree 1515/2007 of November 16, approving the General Accounting Plan for Small and Medium Enterprises and the specific accounting criteria for Microenterprises (SME plan, hereinafter).

Pursuant to Article 2 of Royal Decree 1515/2007, all companies, regardless of their legal form, individual or corporate, may apply this General Accounting Plan for SMEs for two consecutive financial years. At the closing date of each term, at least two of the following circumstances must apply:

- a) the total of the asset items does not exceed two million eight hundred and fifty thousand euros;
- b) the net amount of its annual turnover does not exceed five million seven hundred thousand euros;
- c) the average number of workers employed during the year does not exceed fifty.

The accounting plan approved by Royal Decree 1514/2007, even if the above limits are not exceeded, will be applied voluntarily.

The entry into force of the new General Chart of Accounts is included in RD 1514/2007 in its sixth final disposition, which states: "This standard shall enter into force on January 1, 2008 and shall be applicable in the terms set forth in this Royal Decree, for the years beginning after that date".

For its part, RD 1515/2007 similarly states in its third final provision: "This standard shall enter into force on January 1, 2008 and shall be applicable under the terms set forth in this Royal Decree, for the years beginning on or after that date".

#### **Faithful image concept.**

Faithful representation is the fundamental objective of the preparation of the annual accounts of a company. Firms must aspire to these standards in order that these accounts show the true image of the equity, the financial situation and the results of the enterprise.

The concept of a faithful representation was incorporated into the financial – accounting vocabulary and our commercial legislation, following Spain's entry into the EEC (now the European Union) in 1986. In this area, the term was introduced through the IV Annual Accounts, promulgated in 1978.

Article 34 of the Commercial Code states:

1. The annual accounts must be clearly drafted and show a true and fair view of the assets, financial situation and results of the company, in accordance with the legal provisions. For this purpose, the accounting of transactions will take into account their economic reality and not only their legal form.

2. When the application of the legal provisions is not enough to show the true image, necessary additional information will be provided in the memory to achieve that result.

3. In exceptional cases, if the application of a legal provision in accounting is incompatible with the true and fair view of the annual accounts, such a provision shall not apply. In such cases, the report should indicate this lack of application, be sufficiently motivated and explain its influence on the assets, financial situation and results of the company.

According to the introduction of the General Accounting Plan of 1990, the General Accounting Plan prior to that of 2007, the faithful image is the

consequence of a systematic and regular application of accounting principles, which are understood as the mechanism capable of expressing the economic reality of the transactions carried out.

### **International Financial Reporting Standards (IFRS)**

International Financial Reporting Standards (IFRS) are financial accounting standards adopted by the London-based IASB – International Accounting Standards Board. They constitute International Standards or international standards in the development of accounting activity and provide an accounting manual of worth, which is acceptable throughout the world. IFRSs are used in many parts of the world, including the European Union. Since March 28, 2008, some 75 countries have required the use of, or part of, IFRSs. Many other countries have decided to adopt the standards in the future either through their direct application or through their adaptation to the national laws of individual countries.

In July 2009, the IASB published a version of the International Financial Reporting Standards for Small and Medium Enterprises. It corresponds to a simplified version.

Companies listed on the stock exchange must establish in their consolidated accounts, in accordance with European Union regulations, the International Financial Reporting Standards.

### **Annual Accounts, included in the General Accounting Plan**

#### **Referent to the documents comprising the annual accounts**

The annual accounts contain the balance sheet, the income statement, the statement of changes in equity, the statement of cash flows and the notes thereto. These documents form a single unit and should be prepared in compliance with the Commercial Code, the revised Companies Act, the Limited Liability Companies Act and this General Accounting Plan, with particular reference to the Accounting Framework, in order to present fairly the equity, financial position and results of the company.

The statement of cash flows shall not be obligatory when the balance sheet, statement of changes in equity and the notes thereto can be prepared in abbreviated format.

And referent to preparation of annual accounts:

1. The annual accounts shall be prepared every twelve months, except in cases where the company has been recently incorporated, has changed its financial year end or is being dissolved.

2. The annual accounts shall be drawn up within three months of the balance sheet date by the owner or the directors, who shall be responsible for the veracity of the content. The annual accounts shall bear the date on which they were drawn up and shall be signed by the owner, all equity holders with unlimited liability for corporate debt, or all directors of the company. If any of the aforementioned is unable to sign, the reason shall be expressly indicated in each of the unsigned documents.

3. The balance sheet, income statement, statement of changes in equity, statement of cash flows and the notes thereto shall each be clearly identified by indicating the name of the statement, the name of the reporting entity and the period to which it refers.

4. The annual accounts shall be expressed in euros. Nonetheless, figures may be expressed in thousands or millions of euros where this is advisable due to their magnitude, in which case the level of rounding in presentation should be disclosed in the annual accounts.

### **Accounting principles according to the Polish Accounting Act**

In Chapter 1 “General provisions” in Polish Accounting Act we have the following principles of accounting:

1. True and fair view principle – Entities are required to apply the adopted accounting principles (policies), truly and fairly presenting their financial position and financial result. Events, including business transactions, are recognised in the books of accounts and presented in the financial statements in accordance with their economic substance (art. 4, paragraph 1).

2. Simplifications principle – Within its adopted accounting principles (policies) an entity may apply simplifications, provided that it has no significant negative impact on the fulfilment of the obligation specified in Paragraph 1 of Accounting Act (art. 4, paragraph 4).

3. Consistency principle – The adopted accounting principles (policies) must be applied on a consistent basis assuring that the classification of business transactions, measurement of assets, liabilities and equity, including the amortization or depreciation charges, determination of the financial result, and preparation of the financial statements are carried out in the same way in consecutive financial years so that the information resulting therefrom for the consecutive financial years is comparable (art. 5, paragraph 1).

4. Continuation principle – Adopted accounting principles (policies) are applied on the assumption that an entity will continue as a going concern in the foreseeable future, without material curtailing of the scope of its operations, without being put into receivership or declared bankrupt, unless it is in contradiction with the actual or legal status. While assessing the entity’s



ability to continue as a going concern, the entity's manager takes into account all information available as of the date of preparing the financial statements relating to the foreseeable future, covering a period not shorter than 12 months from the balance sheet date (art. 5, paragraph 2).

5. Commensurability principle – In order to ensure the matching of the income and related costs, assets or liabilities and equity of a given reporting period shall include costs or income which relate to the future periods as well as costs relating to this reporting period, which have not been incurred yet (art. 6, paragraph 2).

6. Prudence principle – Individual items of assets, liabilities and equity shall be measured at the actual prices (costs) paid (incurred) for their acquisition (manufacture), taking into account the prudence principle. In particular, the following should be recognised in the income statement, irrespective of their amounts:

- decreases in the useful or commercial value of an item of assets, including depreciation or amortization charges,
- provisions for any risk known to the entity, impending losses and the outcome of other events (art. 7, paragraph 1).

7. Compensation principle – The value of individual items of assets, liabilities and equity, income and related costs, as well as extraordinary gains and losses, shall be determined separately. Different types of assets, liabilities and equity, income and related costs, as well as extraordinary gains and losses shall not be offset against each other (art. 7, paragraph 1).

8. Comparability principle – In order to give a true and fair presentation of its situation, an entity may, as of the first day of a financial year and irrespective of the decision date, replace the accounting solutions applied so far with others allowed by the Act. Changes in the accounting solutions applied so far require a disclosure, in the notes to the financial statements, of the impact of those changes on the financial statements required by other legal regulations, if these financial statements have been prepared for the period in which the above solutions were changed. In such a case, in its financial statements for the financial year in which the changes were made, the entity should specify the reasons for such changes, quantify their impact on the financial result, and ensure comparability of the financial statement data for the financial year preceding the financial year in which the changes were made (art. 8, paragraph 2).

### **Accounting principles according to the Spanish General Accounting Plan**

Companies shall apply the following principles in their accounting and, in particular, for the recognition and measurement of components of the annual accounts:

1. Going concern – Unless there is evidence to the contrary, it shall be presumed that the company will continue in operation in the foreseeable future. Therefore, the aim when applying the accounting principles and criteria is not to determine the value of the company's net equity with a view to disposing of part or the entire business of the company, or the amount that would be obtained in the event of liquidation.

2. Accrual – The effects of transactions and other economic events shall be recognised when they occur. The related expenses and income shall be recognised in the annual accounts for the reporting period to which they relate, irrespective of the payment or collection date.

3. Consistency – Once a criterion has been selected from amongst the available options, this should be maintained over time and applied consistently to other similar transactions, events and conditions, insofar as the circumstances that gave rise to its selection remain unchanged. Should the grounds for the original choice of a criterion change, a different policy could be applied and details of this situation should be disclosed in the notes, indicating the quantitative and qualitative effect of the variation on the annual accounts.

4. Prudence – Prudent criteria should be applied when estimates and measurements are made in conditions of uncertainty. However, prudence when measuring assets and liabilities is not justified if the fair presentation of the annual accounts is affected.

Notwithstanding article 38 bis of the Commercial Code, only profits obtained before the end of the reporting period shall be recognised. However, all risks arising during the current or prior reporting periods should be taken into consideration as soon as they become known, even if they only come to light between the balance sheet date and the date the annual accounts are officially drawn up by the directors. In such cases, details shall be duly disclosed in the notes to the annual accounts, as well as in other documents comprising the annual accounts when a liability or an expense has been incurred. In exceptional circumstances, should the risks come to light between the date the annual accounts are officially drawn up by the directors and their final approval by the shareholders, and should such risks have a significant impact on fair presentation, the annual accounts must be redrafted.

5. Offsetting – Assets and liabilities, as well as income and expenses, shall not be offset unless expressly permitted by a standard. The components of the

annual accounts shall be measured separately. An example is when the same person acts as supplier and customer at the same time. When an entity acts as a customer it will be treated as a customer and when an entity acts as a supplier it will be treated as a supplier.

6. Materiality – Strict application of certain accounting principles and criteria may be waived when the quantitative or qualitative materiality of the variation arising as a result is of little significance and, therefore, does not affect fair presentation. When items or amounts are not material, these may be aggregated with other items of a similar nature or function.

Where accounting principles conflict, the criteria that best ensure fair presentation of the equity, financial position and results of the company should prevail.

## Conclusions

The Polish Accounting Act describes eight principles of accounting, while the Spanish General Accounting Plan specifies six principles of accounting.

Three of these principles are identical and refer to the same area. These are the: Consistency principle, Prudence principle and Continuation principle (Going concern).

The rest of the rules similarly apply, but they have different names. Poland has the Commensurability principle but Spain has the Accrual principle. The Materiality principle in The General Accounting Plan contains two Polish principles: the True and fair view principle and the Simplification principle. The last principle of Offsetting in the Spanish General Accounting Plan contains two Polish principles: the Compensation principle and the Comparability principle.

Table 1

Accounting principles in Poland and Spain

Poland	Spain
True and fair view principle	Materiality
Simplification principle	
Consistency principle	Consistency
Continua principle	Going concern
Commensurability principle	Accrual
Prudence principle	Prudence
Compensation principle	Offsetting
Comparability principle	

Source: Self-study based on The Accounting Act of 29 September 1994, Spanish General Accounting Plan.

Table 2

## The financial reporting rules in Poland and Spain

Regulations	
Poland	<ul style="list-style-type: none"> <li>– The Accounting Act of 29 September 1994</li> <li>– National Accounting Standards</li> <li>– International Accounting Standards</li> </ul>
Spain	<ul style="list-style-type: none"> <li>– The General Accounting Plan, December 2007</li> <li>– National Accounting Standards</li> <li>– International Accounting Standards</li> </ul>
Elements of financial statements	
Poland	<ul style="list-style-type: none"> <li>– Balance sheet</li> <li>– Profit and loss account</li> <li>– Notes to the financial statements</li> </ul> <p>Financial statements which are subject to annual audits also include:</p> <ul style="list-style-type: none"> <li>– Cash flow statement</li> <li>– Statement of changes in equity</li> </ul>
Spain	<ul style="list-style-type: none"> <li>– Balance sheet</li> <li>– Income statement</li> <li>– Statement of changes in equity (shall not be obligatory when the balance sheet can be prepared in an abbreviated format)</li> <li>– Statement of cash flows (shall not be obligatory when the balance sheet can be prepared in an abbreviated format)</li> <li>– Notes thereto</li> </ul>
Audit of financial statements	
Poland	<ul style="list-style-type: none"> <li>– Joint stock companies</li> <li>– Other entities which in the prior financial year for which the financial statement was prepared, met at least two of the following conditions: <ul style="list-style-type: none"> <li>* The average annual number of employees, by full-time equivalents, reached or exceeded a level of 50 persons</li> <li>* Total assets as at the end of the financial year reached or exceeded the Polish currency equivalent of 2 500 000 euros</li> <li>* Net sales of products and goods for resale, plus income on financial transactions for the financial year reached or exceeded the Polish currency equivalent of 5 000 000 euros</li> </ul> </li> </ul>
Spain	<p>The annual accounts and, where appropriate, the management report shall be reviewed by an auditor</p> <p>Except for this obligation, companies that meet, during two consecutive financial years, at the closing date of each term, at least two of the following circumstances:</p> <ul style="list-style-type: none"> <li>* That the total of the asset items does not exceed two million eight hundred and fifty thousand euros</li> <li>* That the net amount of its annual turnover does not exceed five million seven hundred thousand euros</li> <li>* That the average number of workers employed during the year does not exceed fifty</li> </ul> <p>And in addition, there are other circumstances that do not correspond to its size, that the company is required to audit in Spain</p>

Source: Self-study based on MICHNIEWICZ (2016), The Accounting Act of 29 September 1994, Spanish General Accounting Plan.

The conditions of auditing financial statements in both countries are different. In Poland, most entities, except joint stock companies, which in the prior financial year for which the financial statement was prepared, met at least two of three conditions, the management report shall be reviewed by an auditor. In Spain, the management report shall be reviewed by an auditor when companies meet at least two of three conditions, during two consecutive financial years, at the closing date.

One of these conditions is the same in both countries (the average annual number of employees, by full-time equivalents, reached or exceeded a level of 50 persons). Two other conditions have different amounts. The total of the asset items in Poland is 2,500,000 euros and in Spain it is 2,850,000 euros. The net amount of its annual turnover in Poland is 5,000,000 euros and in Spain it is 5,700,000 euros.

The elementary documents of the financial statements are the same (Balance sheet, Profit and loss account or Income statement and Notes to the financial statements or Notes thereto). The other two documents have the same names (Statement of cash flows and Statement of changes in equity), but in Poland it is not obligatory to prepare them, when an entity does not need to make an annual audit. In Spain, it is not obligatory when the balance sheet can be prepared in an abbreviated format.

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## **METHODS OF INCREASING LABOUR PRODUCTIVITY IN SERVICE ENTERPRISE\***

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**Key words:** labour productivity, services, service enterprise, labour market, efficiency.

### **A b s t r a c t**

In the era of innovation resulting from intense competition on a global scale, a modern enterprise, especially a service one, needs to keep pace with the changing market conditions. One of the requirements, under the process of “technologization” of economic activities that determines the survival and development of an enterprise, is the ability to increase the level of labour productivity. Identifying the determinants of labour productivity in the enterprise, to a large extent, affects the building of its competitive position and market advantage. As service companies are exposed to substantial uncertainty and risk, they are particularly focused on finding ways to rationalize costs and increase efficiency.

The aim of this article is to present the methods of increasing labour productivity in a modern service enterprise. The research methods undertaken include an analysis of secondary sources as well as a case study of a specific service enterprise.

### **METODY ZWIĘKSZANIA WYDAJNOŚCI PRACY W PRZEDSIĘBIORSTWIE USŁUGOWYM**

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**Słowa kluczowe:** wydajność pracy, usługi, rynek pracy, efektywność, przedsiębiorstwo usługowe.

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## A b s t r a k t

W dobie innowacji wymuszanych przez intensywną konkurencję w wymiarze globalnym współczesne przedsiębiorstwo, zwłaszcza usługowe, musi na bieżąco dostosowywać swoje działania do zmieniających się warunków rynkowych. Jednym z wymogów w warunkach „technologizacji” działalności gospodarczych, warunkujących przetrwanie i rozwój przedsiębiorstw, jest umiejętność podwyższania poziomu wydajności pracy. Określenie determinant wydajności pracy w danym przedsiębiorstwie w znacznym stopniu oddziałuje na budowanie jego pozycji konkurencyjnej i przewagi rynkowej. Przedsiębiorstwa, ponieważ są narażone na znaczną niepewność i ryzyko, w szczególnym stopniu są zmuszone do poszukiwania sposobów racjonalizacji kosztów i zwiększania efektywności. Celem artykułu jest identyfikacja metod zwiększania wydajności pracy we współczesnym przedsiębiorstwie usługowym. Obraną metodą badawczą jest analiza źródeł wtórnych, a także studium przypadku konkretnego przedsiębiorstwa usługowego.

## Introduction

One of the crucial fields of economic study is to learn how firms turn inputs into outputs in order to analyse productivity – the efficiency with which the conversion occurs. Every enterprise is oriented to maximize profits through effective activity based on human labour as well as mechanized capital. Nowadays, in the face of the development of modern technologies and mechanization as well as decreasing labour resources due to demographic trends, the human factor is an extremely valuable business resource. Shortages in the labour force may substantially limit the growth of an enterprise (ROLLNIK-SADOWSKA 2015, p. 324, 325).

Increasing labour productivity is one of the crucial areas of creating a competitive advantage for the enterprise. It is especially important for the Central and Eastern European (CEE) post-communist countries which still fall behind in terms of labour productivity as compared to Western Europe<sup>1</sup>.

Market services are more productive than other sectors (MARTINO 2015, p. 195) and an analysis of service enterprises allows for an investigation of the reasons for such significant productivity.

This paper presents a discussion concerning identifying methods which make it possible to obtain a relatively high productivity of human labour in a service enterprise.

The paper is divided into three parts. The first part includes a theoretical approach to labour productivity. The second and third chapters contain the

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<sup>1</sup> In 2015, in Central and Eastern European countries, despite the gradual increase of labour productivity, the indicator per hour worked (calculated as real output per unit of labour input (measured by the total number of hours worked)) was still lower than the EU-28 average. It reached 82.5% of the EU-28 average in Slovakia, 81.3% in Slovenia, 79.7% in the Czech Republic, 74.3% in Poland, 72.1% in Lithuania, 70.7% in Estonia, 69.1% in Hungary, 69.0% in Croatia, 64.6% in Latvia, 59.2% in Romania, 43.6% in Bulgaria, <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tesem160&plugin=1> (access: 18.07.2016).



basis of methodological and empirical considerations concerning the labour productivity of a service enterprise.

The aim of this article is to highlight the methods of increasing labour productivity in a modern service enterprise. The research methods used an analysis of secondary sources as well as a case study of a specific service enterprise in one of the CEE countries – Poland.

### **Labour productivity – a theoretical approach**

Productivity is efficiency in production: how much output is obtained from a given set of inputs. As such, it is typically expressed as an output-input ratio.

Single-factor productivity measures reflect units of output produced per unit of a particular input. Labour productivity is the most common measure of this type, though occasionally capital or even material productivity measures are used (SYVERSON 2011, p. 329).

Labour productivity is the ratio of labour costs to the level of generated profit (FILIPOWICZ 2013, p. 35). Šmid defines the concept of productivity as the relationship between the degree of engagement of the element in the manufacturing process and its physical size, and the value (ŠMID 2012, p. 215). However, according to TYLLINGER (1926, p. 14), work can be efficient if it is voluntary and focused on results. Labour productivity can be measured by some other indicators. Natural units, i.e. the amount of the goods produced per unit of time, may be applied to a homogeneous output. Diverse production entails calculation of efficiency with the use of a formula, making it possible to compare the performance of companies producing a diverse range of products:

$$\text{labour productivity} = \frac{\text{value of global output per unit of time}}{\text{number of employees} \times \text{number of time units}}$$

For the numerator, the standard approach has been to use revenues (deflated to a real value for a common year using a price deflator series) to measure output.

In the case of the denominator and measuring inputs, some issues arise. For labour, there is the choice of whether to use the number of employees, employee-hours, or some quality-adjusted labour measure (the wage bill is often used in this last role, based on the notion that wages capture marginal products of heterogeneous labour units) (SYVERSON 2011, p. 330, 331).

The term “efficiency” is strongly related with labour productivity. It is also expressed by the following concepts: economic efficiency, favourability, effectiveness or proficiency. Economic efficiency means the ratio between output (the achieved useful result) and input (resource usage), in which the output is higher than the input. Favourability is a feature of the action, assessed positively due to a predominance of acquisitions in the difference between acquisitions and losses. Effectiveness is understood to be positively assessed if the compatibility of the result matches with the objective. Proficiency is meant to be the virtues of individual good work, i.e. effectiveness, favourability, or economic efficiency (JASIŃSKI 1999, p. 243).

Armstrong presented some assumptions, determining the productivity indicators (AMSTRONG 2011, p. 191, 192):

- a) the indicator should reflect the results not the effort that was made,
- b) the results need to be controlled by an employee,
- c) the measure should be objective and observable,
- d) the measured data should be easily accessible,
- e) if possible, existing indicators should be used or adapted.

Productivity is a function of external and internal factors (SIGALA 2004, p. 39–60). One can also determine the following external factors – seasonal fluctuations and business cycles. By their nature, these environmental elements are also the most closely tied to government policy.

The internal factors of productivity are connected with the organization of a production process in a given enterprise as well as with the applied management methods. One of the crucial internal factors strongly determining productivity is the level of wages. In the microeconomic dimension, wages are closely related to marginal productivities. Microeconomic theory also implies that labour demand would increase if productivity per unit of labour input increased (at given wages), because a further extension of production would increase a firm’s profits (MEAGER, SPECKESSER 2011, p. 3). Following that theory, restraining wage increases below the rate of productivity growth will increase employment levels. Research findings from labour economists have also proven that there are not only influences at the level of wage on productivity, but there are also crucial productivity effects of incentive pay (LAZEAR 2000, p. 1346–1359).

### **Peculiarities of service enterprise resources**

Service companies, due to the specific nature of their activities, must focus their efforts on staff as they maintain (mainly direct) relations with customers. Such relations are significantly important nowadays as service enterprises

compete mainly at the level of customer relations. Moreover, all actions taken with regard to staff management, as well as their satisfaction and commitment to work, are reflected in customer satisfaction, which is the value of service companies (SKĄPSKA, SAMUL 2015, p. 277).

The main clues with regards to the activities of service companies in the market are consumer demands for service providers who are forced to provide high quality service. In the classical model of service quality, five essential dimensions have been determined through which consumers perceive and evaluate the quality of services. They are: reliability, commitment, confidence, empathy and material elements. Therefore, customers expect appropriate behaviour from staff as material confirmation of service quality. Expectations connected with services may relate to their technical quality (quality score) and functional quality (the quality of service process and interpersonal relations) (GRÖNROOS 2007, p. 73–75).

Nowadays, service activity is not enough to work as a factor in the provision of services, understood as the labour force in the mechanical sense. Under market conditions, there is a need to preserve specific characteristics such as: direct contact between the service contractor and their recipient or supplying the employee in knowledge, appropriate to the type of service, which represents the specificity of the process of creating services, as opposed to the production of material goods (SKĄPSKA, SAMUL 2015, p. 283).

The process of service delivery, in contrast to the production process, is long and has a complex waveform with an intangible nature. The intellectual capital of staff plays an important role in the process of service delivery. The service provider's core capability is the ability to transform information into useful knowledge. An essential component of the economic process is "service personalization", but the distance between the service recipient and the service provider has been inevitably shrinking. Its main point is a digital message with the use of modern technologies that have transformed the consumer into e-consumer, and services into e-services. Improvements in the way of providing services (thanks to the Internet) refer to multidimensional electronic communication, which changes the relationship from direct to digital (SKĄPSKA 2016).

Changing patterns of self-realization, attitudes toward work and increasing the level of education within society have been forcing employers to engender in employees a sense of mission. In services, employees together with their competence and readiness for change are an important link in the process of implementing innovations that affect productivity. Employee creativity plays a significant role in creating innovation. It allows one to properly analyse the situation of an organization in the service market. As a result, there is a tendency to bring new solutions to improve the competitive position and thus

improve the image of service innovativeness in a country (SKĄPSKA 2014, p. 151).

All companies need highly skilled, experienced and motivated employees to gain a competitive advantage, but human capital is even more important in the service sector, which is labour-intensive work (KIAN TO, HURMELINNA-LAUKKANE 2010, p. 305–325). Keh and Pang compared the methods of service delivery in terms of cost and time savings for access and use of services as well as the range of choices with regards to the place and time of service supply. They concluded that a separation of production and consumption is more advantageous, but this mode of supply is not without risk concerning the important problem of information asymmetry (KEH, PANG 2010, p. 56, 57). This means that there is a discrepancy between what the vendor knows, and what it should know in order to fully satisfy its customers (PAGILACCI, KĘDZIOR 2006, p. 3).

A modern service enterprise that wishes to strengthen their relationship with a customer, and thus achieve the benefits, introduces services that accompany machines and devices. The opportunity to collect and update information about customers becomes important. Their satisfaction, expectations, strategies, competitive behaviour, the size and the age of a machinery park and future investment decisions emerge during the extensive and continual customer contact connected with the use of the services associated with the product (HOMBURG et al. 2000, p. 6). It is an effective instrument for equalizing fluctuations in demand for investment goods.

### **Methods of increasing labour productivity**

During the twentieth century, workers were seen as an insignificant element in an organization. This was mainly due to a lack of alignment and preparation to perform a certain type of profession. Therefore, methods that could contribute to raising productivity were not aimed directly at competence and personal development of employees (WYRWICKA 2010, p. 9).

Outstanding results concerning productivity were primarily shaped by a rational organization of work. Firstly, there were isolated obligations incumbent on each employee and the relationship between individuals in the organization in order to organise work properly. An important aspect was health and safety at work (BLINOWSKI 1955, p. 27–29). Shapiro claimed that specialization was the source of labour productivity as well as the distribution and harmonization of labour which allowed an employee to largely automate some repetitive work, which then could be performed much faster than a new employee was able to do being in the same position (SHAPIRO 1951, p. 25).

Shapiro did not foresee that an employee could become bored by repetitive work. In this case, the employee could fall into a rut, and thus instead of increasing labour productivity they could lower it significantly. This problem was noted by Blinowski, who claimed that it was necessary to introduce some kind of diversity at work which, to a large extent, would solve the problem.

Higher productivity is also affected by innovation. Among some important incentives that lie at the root of innovative behaviour, one may primarily feature financial instruments, e.g. government procurement of innovation services, but also the development of infrastructure to facilitate the transfer of technology through, among others, entrepreneurship centres. Moreover, it is also important to conduct scientific research towards investment in human capital (SKĄPSKA 2014, p. 158).

### **Evaluation of labour productivity in a service enterprise – a case study**

The analyzed company is part of a global group, which employs more than 5,000 employees. It represents the betting sector. The researched enterprise can be considered as one of the most popular and largest companies operating in that industry in the Polish market. The main activity of the company is organising mutual betting. The researched group of respondents was formed by employees of one of the bookmakers. They represented a non-probability sample – a purposive sample, as they were selected deliberately. The study was directed at people receiving mutual bets, so-called “collectors”. The research was realised by CAWI – Computer Assisted Web Interview. An online survey was sent to respondents via the Internet. The questionnaire was attached to the selected group of employees by one of the social networking sites.

The researched group consisted of 46 people. Most of the employees were women – 67%. Men accounted for only 33% of the study population. The greater part of the study group were young people under 26 years of age. Respondents in the range from 27 to 35 years of age made up 35% of all respondents, while workers above the age of 35 accounted for only 4%.

Analyzing education, one may state that the majority of respondents had a secondary education (54%). Higher education and vocational training had a similar number of respondents, and it was about 20%. The distribution of seniority in the researched group can be described as balanced. The largest group were people who had worked in the company from 3 to 5 years, another equally large group were people with little work experience, i.e. a year or less, which was as much as 30%.

The main objective of the research was identification of factors which have the greatest impact on labour productivity in the selected service enterprise. In addition, the analysis examined the level of employee work satisfaction and indicated the aspects that greatly affected the growth and the decline in labour productivity in the analyzed company.

More than half of the respondents claimed that they were unhappy working for the analysed enterprise, and was as much as 56%. However, 43% of respondents were fully satisfied with the realisation of their professional duties. Such a large proportion of workers who are dissatisfied with their professional activity encourages a search for the reasons of such a state.

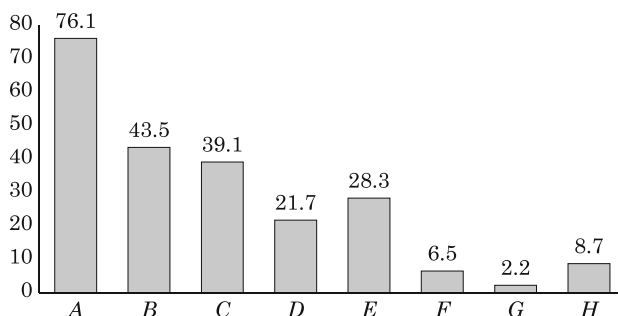
The vast majority of respondents considered their work to be rather not diversified (74%). A lack of diversity at work is a bad phenomenon, especially when it comes to companies in the service industry where workers are closest to the customer. The best way to increase diversity and prevent a sense of monotony at work is to give employees more responsibility in decision-making.

Most workers (65%) thought that their salary was too low compared to the duties entrusted to employees. At the same time, 35% of respondents regarded their remuneration as being set at an appropriate level and adequate to the tasks assigned to them.

The vast majority of respondents agreed with the statement that work performance was affected by proper motivation. Only 11% of respondents gave a different answer. The company's success largely depends on the people working in the organization, and effective incentive systems play a key role. Only 35% of respondents claimed that a supervisor motivated the employees in an appropriate way. Thus, it was clear that the managers had created insufficient conditions for efficient work.

The most popular form of motivation (Fig. 1) was wage incentives, i.e. bonuses (76.1%) and salary increases (43.5%). The next position out of wage motivators was occupied respectively by: praise (39.1%), tickets to the cinema and theatre (28.3%) and prizes (21.7%). A small percentage of respondents indicated integration trips (2.2%) and additional leave (6.5%) as incentives used by their company. An additional form of motivation, determined by respondents was vouchers to various stores (8.7%).

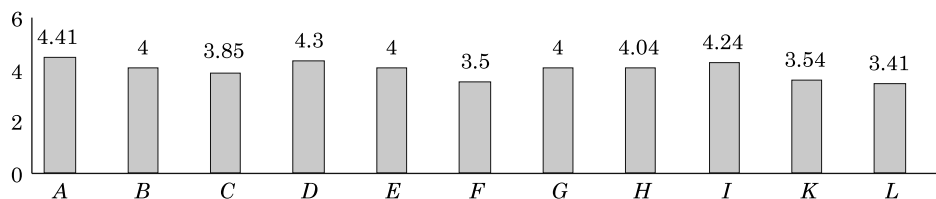
According to the respondents, labour efficiency is mainly affected by the level of remuneration, workplace equipment and employment stability. Lower priority was given to: work with promotion possibilities, the atmosphere among the employees, the bonus system, health and safety conditions. Less appreciated aspects also included good relations with a manager, training and professional development, flexible working hours and approbation of a supervisor (Fig. 2).



A – bonuses, B – salary increase, C – praise, D – tickets to the cinema and theatre, E – prizes, F – trips, G – additional leave, H – vouchers to various stores

Fig. 1. Types of motivation used by analysed company

Source: own study based on conducted research.



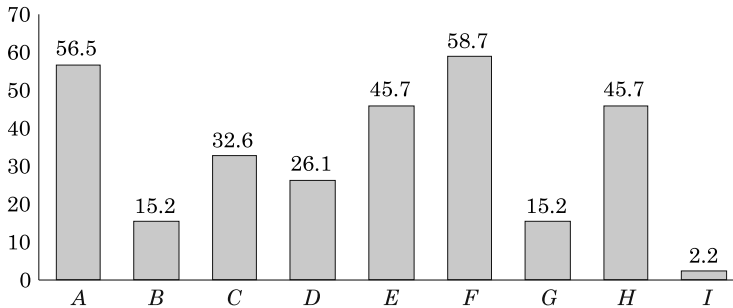
A – level of remuneration, B – atmosphere among the employees, C – good relations with manager, D – workplace equipment, E – bonus system, F – training and professional development, G – occupational health and safety, H – work with promotion possibilities, I – employment stability, J – flexible working hours, K – approbation of a supervisor, L – others

Fig. 2. The average assessment of influence of selected aspects on productivity growth

Source: own study based on conducted research.

According to the opinion of respondents, very low wages were the most demotivating for the employees of a company – 58.7% of respondents (Fig. 3). Once again, the financial incentives were out of the most crucial factors for the labour effectiveness in the analysed service enterprise. Equally often, respondents pointed to the lack of development prospects, since 56.5% of respondents gave such an answer. Further down on the list was no pay-rise and the duty of working on holidays. Both factors reached the same results at 45.7%. Afterwards, respondents indicated a sequence: poor communication (32.6%), the monotony of work (26.1%), strained relations between employees and the lack of clearly defined breaks (15.2%).

The vast majority of respondents (89%) knew of a loyalty system for the staff in the company. Only 11% of employees were not familiar with that issue. Perhaps this is due to the fact that a large percentage of the surveyed employees had worked in the company for less than a year (30%) and they were not sufficiently familiar with the operation of the company. Although the



A – lack of development prospects, B – strained relations between employees, C – poor communication, D – monotony of work, E – no rise, F – low wages, G – lack of clearly defined breaks, H – duty to work on holidays, I – others

Fig. 3. Aspects that demotivate employees to work

Source: own study based on conducted research.

company's loyalty program was noticed by the staff, the majority of employees believed that it was not clear enough (57%).

The dominant number of employees participating in the survey rated the atmosphere in the workplace as satisfactory or rather satisfactory. A small percentage of respondents felt that the atmosphere was inadequate (7%). Good relations, both among employees and in a supervisor-subordinate role, not only contributed to the improvement of performance but they also improved the well-being of employees, thus increasing their willingness and eagerness to work.

The research findings show that the enterprise's employees have the possibility of proposing improvements to their work. That answer was marked by as many as 78% of respondents. Only 22% of employees felt that there was no such possibility. There may have been a problem with the implementation of the proposed improvements. Only 2% of respondents believed that they were empowered to implement them. The largest portion of employees indicated the answer "occasionally", which was as many as 46% of respondents.

With regard to safety in the workplace, the majority of respondents stated that they felt safe. A large percentage of the respondents admitted that they did not feel safe at work, which was as many as 33% of respondents. The causes of this phenomenon were suggested by respondents and included: no alarm, no protective glass separating the employee from the customer, a lack of monitoring, poor protection of cash – no security against theft or burglary, the presence of large amounts of cash – threat of attack, problems with "difficult" customers, the lack of permanent protection, the need for large cash deposits in the bank, bank institutions that were far away from the place of work, late closing time of the office, workplaces that were often poorly lit, an inconvenient location away from a street, and faulty wiring.



Almost half of the respondents considered the workplace to be poorly designed (46%). Moreover, 20% of respondents indicated that equipment within the workplace was of a very low standard.

As shown by these conducted studies, employees often used the time allocated to work on activities not related to their job duties. The largest proportion of respondents admitted that they did them occasionally (44%), while 30% of respondents did them often.

Even though the level of motivation incentives was not enough and there was insufficient satisfaction with the workplace, the majority of respondents admitted that they had no plans to change their jobs. However, 39% of respondents admitted that they had been considering other jobs. Respondents gave several reasons that contributed to this endeavour. These included:

- a) wages too low in relation to seniority,
- b) the lack of opportunities for promotion and career development,
- c) the need to work on holidays and Sundays,
- d) the lack of an employment contract,
- e) fear of being attacked while performing professional duties,
- f) the need to work with large amounts of cash.

The methods and means applied by the analyzed company that contributed to the increase of work efficiency were as follows: financial motivators like bonuses, pay-rises, prizes, tickets to the cinema, theatre, etc., vouchers to various shops. At the same time there were also non-wage motivators such as praise from a supervisor, extra vacation, and integration trips.

## **Conclusions**

Labour productivity in a service enterprise is related to the development of a suitable motivation system for employees. Job satisfaction surveys can be considered to be one of the tools which allows for the identification of factors of increasing labour productivity.

The analysis of the results of this survey conducted in one of the service enterprises (selected as a case study in this paper) indicates that the major problems in terms of increasing work efficiency are low salary as well as work monotony.

The importance of financial factors was strongly emphasized by participants of the study, as they claimed that very low wages are the most demotivating for efficient work. At the same time, respondents regarded their salaries as being too low as compared to their duties. Moreover, they assessed that their level of remuneration (together with workplace equipment and employment stability) influenced labour efficiency the most.

In the era of gradual creation of the employee labour market (also in the CEE countries), the improvement of financial conditions of work will be a crucial element for the acquisition of a labour force in service companies.

At the same time, this analysed case study proved that assuring work diversity is a crucial element of increasing labour efficiency. The respondents stated that a lack of diversity at work reduces their work satisfaction.

A demotivated, bored employee may discourage a client to re-use the offerings of the enterprise. Managers should solve the problem by giving employees, among others, more freedom in decision-making. As a result, employees will feel independent and improve their self-esteem. Managers should also engage employees in the process of decision making by encouraging them to suggest improvements as well as implement their ideas in the enterprise activity.

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**REGIONAL ECONOMY COMPETITIVENESS  
AS A DETERMINANT OF THE HUMAN CAPITAL  
LEVEL OF EXEMPLIFIED  
BY THE WARMIŃSKO-MAZURSKIE VOIVODESHIP**

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Key words: human capital, economic growth, competitiveness.

**A b s t r a c t**

The Warmińsko-Mazurskie Voivodeship belongs to the group of voivodeships with a low level of economic growth in Poland. When considering the importance of human capital in the process of economic growth stimulation, it should be emphasised that the low level of human capital is one of the obstacles preventing the acceleration of economic growth and improvement in the region.

The purpose of the presented analyses was to find the reasons for the low level of human capital in the Warmińsko-Mazurskie Voivodeship. The results, prove that the level of human capital in the regions of Warmia, Mazury and Powiśle results from low competitiveness as regards to higher education, and the low competitiveness potential of the regional economy. In a consequence, the labor market is in an unfavorable situation which leads to the outflow of the most skilled and best-educated parts of the labor force.

**KONKURENCYJNOŚĆ GOSPODARKI REGIONALNEJ JAKO DETERMINANTA  
POZIOMU KAPITAŁU LUDZKIEGO NA PRZYKŁADZIE  
WOJEWÓDZTWA WARMIŃSKO-MAZURSKIEGO**

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Słowa kluczowe: kapitał ludzki, wzrost gospodarczy, konkurencyjność.

### Abstrakt

Województwo warmińsko-mazurskie należy do województw o najniższym poziomie wzrostu gospodarczego w Polsce. Biorąc pod uwagę znaczenie kapitału ludzkiego w stymulowaniu wzrostu gospodarczego, można założyć, że jego niski poziom stanowi jedną z barier ograniczających możliwość zdynamizowania procesów wzrostu i rozwoju gospodarczego w omawianym regionie.

Celem analiz, których wyniki zaprezentowano w pracy, jest wskazanie wybranych determinant niskiego poziomu kapitału ludzkiego w województwie warmińsko-mazurskim. Uzyskane wyniki pozwalają na stwierdzenie, że wśród najważniejszych uwarunkowań tego stanu należy wskazać relatywnie niski poziom konkurencyjności województwa w zakresie kształtowania kapitału ludzkiego oraz niski poziom konkurencyjności gospodarki województwa, którego bezpośrednim skutkiem jest względnie niekorzystna sytuacja na regionalnym rynku pracy, co prowadzi do odpływu najbardziej wykwalifikowanej i najlepiej wykształconej części zasobów siły roboczej.

## Introduction

An analysis of the available literature pertaining to the correlations between the level of human capital and the level and dynamics of economic growth shows that the differences observed at the level of economic growth in particular regions may be, at least partially, determined by disparities of human capital resources and their quality. The regions with the highest level of human capital are usually characterised by higher economic level and growth rate (cf. HERBST 2007, FLEISCHER et al. 2012, ŚWITALA 2007, HERBST 2012, GOLEJEWSKA 2013, SHI 2014). Additionally, stimulation of production processes by human capital seems to intensify with time and with the achievement of the higher level of growth (MUJAHID et al. 2014, p. 183). The above theses have strong theoretical grounds and are well documented in results of empirical research (BRONZINI, PISELI 2009, p. 187); therefore, they can be considered as stylised facts in economics.

Human capital plays a significant role, especially in poorly developed regions and areas. It contributes to collective actions, accelerates knowledge and innovation generation and diffusion processes, and stimulates development of network connections among economic entities. Human capital development is also accompanied by increased trust among local and regional economic entities, self-government units and social organisations (KUKLIŃSKI 2003, p. 9). Therefore, it is also vital for the development of social capital, which contributes to the acceleration of economic development processes by increasing the level of economic activity and streamlining the operation of public institutions (SORENSEN 2012, p. 875).

The starting point for the presented analyses were the results of a study conducted by Merło, Bogdański and Michalak. The authors stated that the level of human capital in the Warmińsko-Mazurskie Voivodeship was the

lowest in the country in between 2009 and 2013 in comparison to other voivodeships. Furthermore, in the analysed period, the researchers observed that the rates reflecting the above-mentioned level were continuously plummeting (MERŁO et al. 2015). The Warmińsko-Mazurskie Voivodeship is also a voivodeship with the lowest level of economic growth in Poland. When considering the importance of human capital in the process of economic growth stimulation, it should be emphasised that the low level of human capital is one of the obstacles preventing the acceleration of economic growth and improvement in the region.

Therefore, a question emerges which factors and processes underlay the adverse changes in the formation of human capital in the voivodeship. Efficiency of regional policy aimed at reduction of the development gap between the Warmińsko-Mazurskie Voivodeship and other voivodeships in the country calls for specification of determinants of the existing disparities. Therefore, the purpose of the analyses, the results of which are presented in the study, is to show the causes of the low level of human capital in the analysed voivodeship.

## **Research Methodology**

The study comprises two research hypotheses. Both refer to factors influencing the human capital level in the Warmińsko-Mazurskie Voivodeship. The first hypotheses stipulates that the relatively low level of human capital results from the low competitiveness of the voivodeship as far as the fostering of human capital is concerned. The second hypotheses assumes that the deteriorating level of human capital in the region is caused by the human resources' drain due to the low level of competitiveness, and hence the relatively difficult situation in the labour market.

To verify these hypotheses it was necessary to divide the research process into several stages. At the first stage, the researchers defined the potential of the Warmińsko-Mazurskie Voivodeship in terms of fostering human capital. To this end, a component of the Regional Competitiveness Index (RCI) was distinguished and calculated in the area of higher education and continuing education. The RCI is a composite indicator created by Annoni, Dijkstre and Kozovska for the purpose of international comparisons of the competitiveness of regional economies. Its assumptions and methodology of calculation are based on the Global Competitiveness Index (GCI) elaborated by the World Economic Forum. It describes regional competitiveness via three specific sub-indexes (basic requirements, efficiency enhancers and innovation and sophistication factors) using 80 explanatory variables. The RCI calculation

methodology is described in detail in the following publications: ANNONI, DIJKSTRA (2013) and ANNONI, KOZOVSKA (2010).

To describe regional competitiveness in terms of fostering human capital, the following explanatory variables were used:

- population aged 25–64 with higher education – as a percentage of the total population in this age group;
- professional development – participation of people aged 25–64 in professional development and training courses as a percentage of people aged 25–64;
- access to higher education institutions – number of people living within a maximum distance of 60 minutes from a higher education institution as a percentage in total population.

To gain an insight into the educational potential of the analysed voivodeship, information on a number of students at the University of Warmia and Mazury in Olsztyn (as the largest university in the region) and their structures on account of territorial origin were taken into account. At this stage of the research, the Online Candidate Enrolment System used at the University in Olsztyn was the source of information. Additionally, at this stage the researchers also used data obtained from a diagnostic survey using the direct survey technique. The study was conducted during the academic year 2013/2014 and covered 1,340 students from the Faculty of Economics at the University of Warmia and Mazury in Olsztyn, representing the supply side in the labour market in the analysed region.

Verification of the second research hypothesis required calculation of the RCI value as a composite measure of the competitiveness level. Additionally, the values of particular RCI components, i.e. values of indices in the basic requirement group, the efficiency enhancers' group and group of innovation and sophistication factors were also calculated. Owing to this, it was possible to indicate which dimension of regional competitiveness contributed to the total competitiveness level of the analysed region in the greatest extent.

Due to the limited access to source data, the time range of the study pertains to the year 2013. However, when considering the specific nature of factors fostering the level of competitiveness of regional economies, both in global terms and as regards to competitiveness in higher education, it may be assumed that it remained on a relatively stable level over a period of several years.

The source data were derived from an online statistical database – EURO-STAT.



## **Human Capital Versus Competitiveness of the Warmińsko-Mazurskie Voivodeship in of the Area of Higher Education**

In general terms, human capital may be defined as all predispositions, knowledge, skills and capabilities, as well as health that may be used in the production process (ZIEJEWSKI 2011, p. 138). The assessment of human capital in regional terms may be horizontal, by way of comparing selected categories characterising its quality, or by using some aggregated ratios (WIERZBICKA 2017, p. 332). One of the measures used for that purpose is the Human Capital Resources Index (WAŚNIEWSKA 2007, p. 252, MOSSAKOWSKA 2008, p. 11). It involves the measurement of four variables:

- professional activity rate – the share of professionally active people in the total population aged at least 15;
- employment rate – the share of the working population in the total population aged at least 15; the rate is used to evaluate the mobilisation of the labour force;
- entrepreneurial activity rate – the number of entities registered in the REGON database compared to the number of inhabitants over 17 years of age who are engaged in professional activity in the region; it is assumed that a higher level of entrepreneurial activity results in a larger number of entities registered in the region;
- educational level – the percentage of working population with tertiary education level; it is assumed that the quality of human capital improves with the increase of the educational level of a given person.

As indicated by the results of a research conducted by Merło, Bogdański and Michalak between 2009 and 2014, the level of human capital measured by the Human Capital Resources Index varied in Poland. In the case of the analysed voivodeship, its values were the lowest in the country, and, what is more, constant deterioration thereof could be observed in the analysed period (Tab. 1).

The low values of the Human Capital Resources Index resulted from the fact that in the analysed period the region was characterised by the lowest employment rate and professional activity rate in the country, as well as second lowest level of education (MERŁO et al. 2015). Assuming that the observed trends continue over time, they will cause further social and economic marginalisation of the region.

In an attempt to determine the causes of the described process, the researchers defined the potential of the Warmińsko-Mazurskie Voivodeship in terms of fostering human capital. An approximate measurement of such potential is regional competitiveness in terms of higher education and continuing education, which constitute the RCI components.

Table 1

Values of Human Capital Resources Index in years 2009–2013

Voivodeship	2009	2010	2011	2012	2013
Mazowieckie	0.89	0.91	0.89	0.89	0.91
Wielkopolskie	0.47	0.65	0.56	0.53	0.58
Pomorskie	0.39	0.56	0.52	0.53	0.51
Małopolskie	0.38	0.43	0.45	0.42	0.42
Dolnośląskie	0.33	0.38	0.37	0.37	0.40
Łódzkie	0.33	0.44	0.42	0.33	0.37
Zachodniopomorskie	0.34	0.33	0.33	0.36	0.36
Lubelskie	0.32	0.37	0.37	0.34	0.35
Podlaskie	0.34	0.30	0.37	0.37	0.35
Lubuskie	0.23	0.36	0.35	0.26	0.29
Kujawsko-Pomorskie	0.25	0.26	0.27	0.31	0.29
Śląskie	0.28	0.27	0.33	0.30	0.28
Świętokrzyskie	0.34	0.39	0.34	0.32	0.27
Opolskie	0.21	0.26	0.27	0.29	0.26
Podkarpackie	0.36	0.39	0.30	0.26	0.24
Warmińsko-Mazurskie	0.19	0.22	0.17	0.08	0.08

Source: MERŁO et al. (2015, p. 29).

The competitiveness of the Warmińsko-Mazurskie Voivodeship in this respect is at a very low level (Fig. 1). Similarly, as in the case of the Human Capital Resources Index, the RCI value in terms of higher education and continuing education in the analysed region was the lowest in the country. The lowest accessibility to higher education institutions and a relatively low percentage of people enrolling in continuing education programs contributed to the low value.

Apart from several smaller colleges, only one university operates in the region – i.e. the University of Warmia and Mazury in Olsztyn – where over 83%<sup>1</sup> of all students in the region pursue their educational programs. Thence, the small number of higher education institutions is one of the main factors limiting the possibility of improving the educational level of the region's population. Furthermore, while considering low economic growth and the overall low affluence of the population connected therewith, it should be remembered that the youth from small towns and less prosperous families may not always be able to afford to move to larger cities to study and any potential

<sup>1</sup> According to the data from the Local Data Bank of the Polish Central Statistical Office (GUS), 32.5k people studied in the Warmińsko-Mazurskie Voivodeship in 2013. In the same period, the number of students at the University of Warmia and Mazury was nearly 27k.

distance between the place of residence and a university (or, more precisely, the travel time, which is related not only to the distance, but also to the infrastructure) is too great for daily commuting.

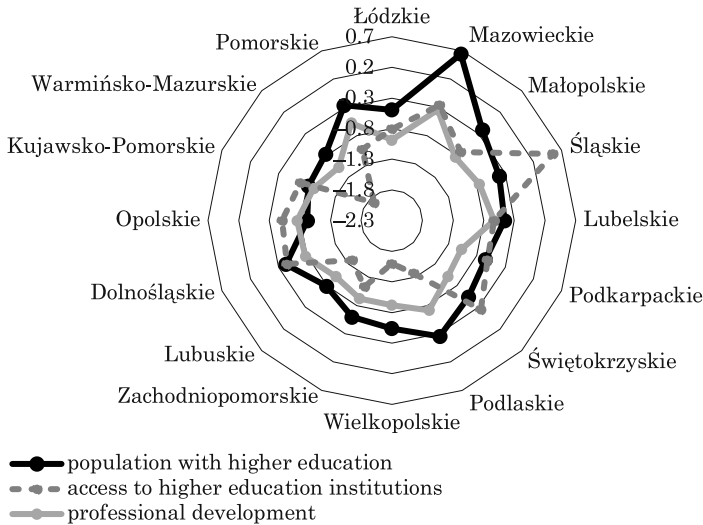


Fig. 1. Components of RCI index in terms of higher and continuing education  
Source: MERŁO, MICHAŁAK (2015).

Furthermore, the analysis of data from the Online Candidate Enrolment System allows for a conclusion that the educational, academic and cultural offer of the University of Warmia and Mazury, as the largest higher education institution in the region is sufficiently appealing to attract approx. 10k new students each year. When analysing the structure of student data in terms of their places of origin, it can be observed that nearly 37% of students come from other voivodeships, e.g. from the Northern poviats in Mazowieckie and western parts of Podlaskie Voivodeship i.e. areas with large and recognised academic centres – i.e. Warsaw and Białystok. This testifies to high competitiveness of the University of Warmia and Mazury in Olsztyn, as well as the city itself as regards the level of human capital in the region.

However, the high efficiency of the University of Warmia and Mazury in attracting students from the region of Warmia, Mazury and Powiśle, as well as the neighbouring voivodeships does not translate to the high quality of human capital. Therefore, it seems that one of the reasons for such a low level of human capital in the region of Warmia, Mazury and Powiśle may be the drain of the most qualified and most educated labour force to other voivodeships.

## **Regional Economy Competitiveness As a Determinant of the Human Capital Level**

When analysing the impact of activities undertaken to improve the human capital level in the region, it is important to determine the percentage of graduates (primarily university graduates) who stay in the region after the completion of their studies. It should also be remembered that the economic growth rate and the situation in the labour market are the main determinants influencing the decisions of university graduates and the labour force in general whether to stay in the region or not. If the region is relatively well developed and it is relatively easy to find employment there, the percentage of graduates starting their professional careers in the region is higher (ROSKOWSKA 2009).

The results of the surveys conducted among students of the Faculty of Economics at the University of Warmia and Mazury allow for the ascertainment that the drain of university graduates is an important factor compromising the level of human capital in the Warmińsko-Mazurskie Voivodeship. Only 35.3% of the respondents were determined to stay in this Voivodeship after their graduation (18.7% of students planned to stay in Olsztyn, whereas 16.6% of them planned to move to other towns in the voivodeship). Simultaneously, 30% of the students expressed their intention to emigrate (27.4%) or move to another city outside the voivodeship (2.6%). Therefore, it is justified to assume that the main reason for graduates' leaving the Warmińsko-Mazurskie Voivodeship is the unfavourable situation in the regional labour market.

The analysis of the results of the Olsztyn study conducted by Herbst in 2009 led to similar conclusions. The percentage of graduates who decided to stay in the capital city of Warmia is 30.1%, which is low when compared to other academic centres in Poland. Similarly, the percentage of graduates who came to Olsztyn from different regions and decided to stay after their graduation is also relatively low (16.3%). This means that the impact of the university in Olsztyn on the development of human capital in the city – even though noticeable – is lower than in the case of other academic centres and notwithstanding the fact that the overall situation in the labour market in Olsztyn is definitely the best within the entire Warmińsko-Mazurskie Voivodeship and very good in relation to the national average. The main directions of migration of the students from the University of Warmia and Mazury are metropolises, mainly capital cities in Mazowieckie, Pomorskie and Wielkopolskie Voivodeships, and thus areas characterised by a relatively favourable situation in the labour market (HERBST 2009).

The above statements show that Warmia, Mazury and Powiśle are characterised by a strong “depletion” tendency of human resources, which is also

referred to as the brain drain. To reverse this trend, it is necessary to create favourable conditions for the conduct and development of business activity within the area of the voivodeship, which could ultimately increase investments and gradually improve the situation in the labour market. However, the main obstacle is the low level of competitiveness of the regional economy.

The RCI values, as indices for measuring the competitiveness of regional economies in Poland, were diversified. Above all, Mazowieckie, Śląskie, Małopolskie and Dolnośląskie Voivodeships recorded the highest scores. In the Warmińsko-Mazurskie Voivodeship, the RCI value was the lowest in the country in 2013 (Tab. 2).

Table 2  
Ranking of Polish voivodeships by the RCI value

Voivodeship	RCI value	Place in the RCI ranking	% of EU regions with lower RCI values
Mazowieckie	-0.18	147	44.0
Śląskie	-0.41	175	33.3
Małopolskie	-0.47	184	29.8
Dolnośląskie	-0.54	190	27.5
Pomorskie	-0.58	194	26.0
Opolskie	-0.58	196	25.2
Łódzkie	-0.58	197	24.9
Lubelskie	-0.67	204	22.2
Lubuskie	-0.70	206	21.4
Zachodniopomorskie	-0.71	207	21.0
Wielkopolskie	-0.73	209	20.3
Podlaskie	-0.73	211	19.5
Świętokrzyskie	-0.73	212	19.1
Podkarpackie	-0.74	214	18.3
Kujawsko-Pomorskie	-0.74	215	18.0
Warmińsko-Mazurskie	-0.87	230	12.2

Source: own calculations on the basis of ANNONI, DEKSTRA (2013).

In the case of the analysed voivodeship, the low value of the RCI resulted from the adverse shape of variables describing three dimensions of regional competitiveness (Fig. 2).

Despite the fact that the greatest disparities between the analysed voivodeship and other Polish regions occur within the “efficiency area” and “innovation area”, in the case of poorly developed regions, such as the Warmińsko-Mazurskie Voivodeship, the basis for competitiveness of such

areas are basic factors. Therefore, any activities aimed at improving the competitiveness level of the voivodeship and, in the longer perspective, its economic growth rate should be concentrated on factors enhancing this exact area of regional competitiveness.

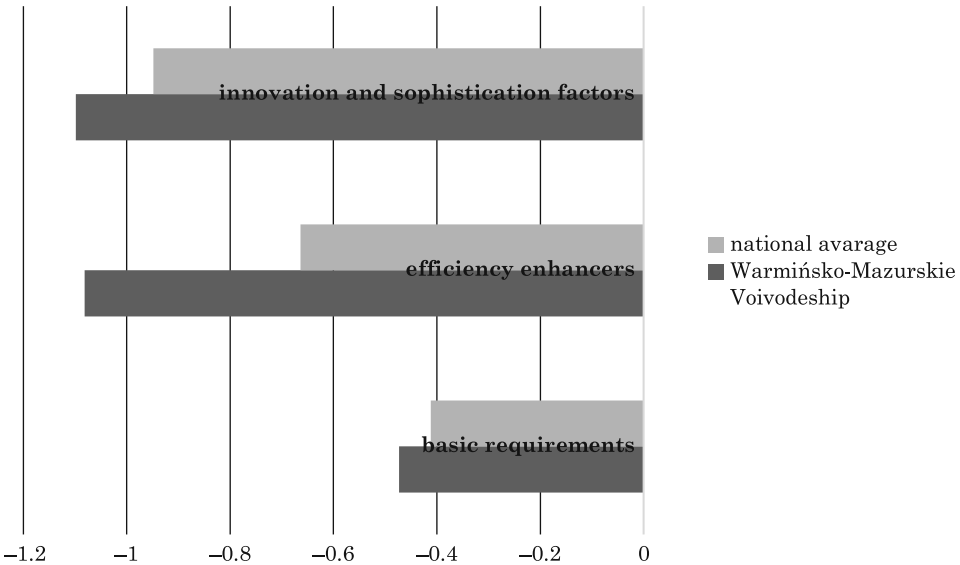


Fig. 2. Areas of competitiveness by RCI values in the Warmińsko-Mazurskie Voivodeship  
Source: own calculation on the basis of ANNONI, DLJKSTRA (2013).

Within its framework, areas that require particular attention are pillars related to the level of health of the regional community, as well as the level of development and infrastructure quality (Fig. 3).

The level of road, rail and air infrastructure in the Warmińsko-Mazurskie Voivodeship is the worst in the whole country, and definitely requires more financing to increase the voivodeship's chances for faster development and enhanced competitiveness when compared to other Polish regions. Thanks to this, it would be possible to keep more qualified workers in the voivodeship, increase human capital, and, in the longer perspective, enhance the development potential of the analysed region.

## Summary and Conclusions

Human capital is considered one of the key factors of economic growth. Its importance results from the fact that the level of human capital is determined by the rate of accumulation as well as creation of knowledge and technology

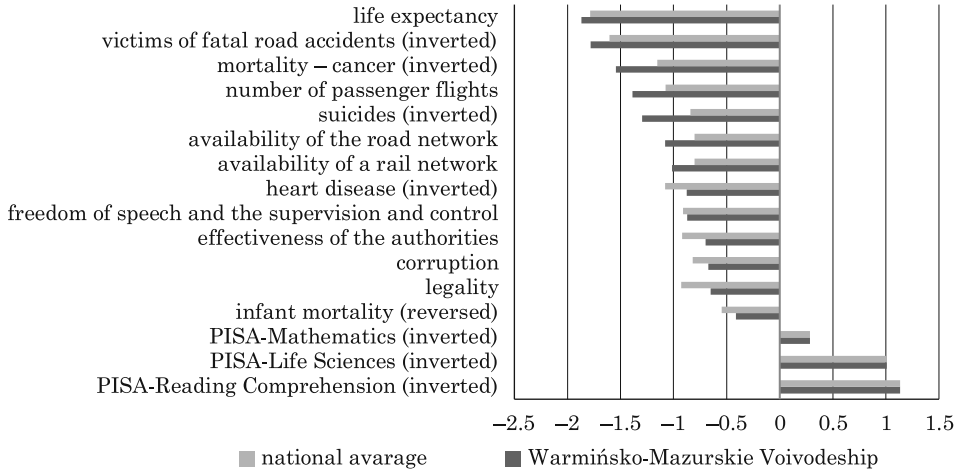


Fig. 3. Ranking of factors determining the RCI in the area of basic requirements in the Warmińsko-Mazurskie Voivodeship (regional level), (smallest to the largest)  
Source: own calculations on the basis of ANNONI, DŁKSTRA (2013).

which, in turn, affects the efficiency of use of other production factors and the economic growth rate. Therefore, the low level of human capital offers slight chances for quick and stable economic growth and, in consequence, may be the cause of the divergence process.

The purpose of the presented analyses was to find the reasons for the low level of human capital in the Warmińsko-Mazurskie Voivodeship, which is also the least developed voivodeship in the country. The results prove that the level of human capital in the regions of Warmia, Mazury and Powiśle results from low competitiveness as regards higher education, and the low competitiveness potential of the regional economy.

The in-depth analysis of partial RCIs and data on the economic growth rate in the Warmińsko-Mazurskie Voivodeship allows for a conclusion that this is a region at the first and lowest stage of development. Competitiveness in the regions of this type relies on basic factors. Above all, the level of economic, technical and transport infrastructure, as well as quality of the institutions, health care and primary and secondary education determine the competitiveness of such units. Investments in such areas should be a priority in terms of public intervention, so that they can increase, in the longer perspective, the competitiveness of the regional economy and, in effect, the economic growth rate.

Apart from the above-mentioned research objective, analyses aimed at realising two tasks were also conducted. The first task is of a cognitive nature and is related to the indication of factors that hinder the development of

human capital in peripheral areas, including the Warmińsko-Mazurskie Voivodeship. Taking into account the fact that human capital is one of the vital factors determining economic growth, the achievement of the above goal also allowed for identification of basic development limitations in Warmia, Mazury and Powiśle.

The second task involves application. The results of the aforementioned analyses may constitute grounds for initiating a discussion on the goals and tools of economic policy implemented at a regional level, as well as their legitimacy and efficiency. The first competitions for co-financing of selected projects from the EU funds under the 2014–2020 financial perspective will be decided this year. Previous experiences in the implementation of past perspectives show that not all of the realised projects included the specific needs of the Warmińsko-Mazurskie Voivodeship as far as stimulation of its development is concerned. Taking into account the fact that this is probably that the last financial perspective as part of which our country and region will be a beneficiary of substantial aid funds, it is essential to exert all efforts to use them in the most efficient way possible and to solve actual problems and development obstacles in the region.

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## **INTERNATIONAL COOPERATION BETWEEN CITIES BASED ON THE EXAMPLE OF THE CITTASLOW NETWORK**

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**Key words:** cooperation between cities, determinants and benefits of cooperation, Cittaslow network.

### **A b s t r a c t**

International cooperation between cities is conducted in numerous spheres, including economic, social, and cultural. It is determined by various factors such as the similarities and previous interrelations between cities, a desire to exchange good practices for management and quality of life improvement and by economic conditions. An example of international cooperation between cities is the Cittaslow network.

The aim of this article is to present the concept of international cooperation between cities based on the example of the cities of the Cittaslow network and to identify the determinants and benefits of such cooperation.

The Cittaslow network is an affiliation of over 230 cities from all over the world. The reason for their cooperation is the similarities between them, in this case, with respect to their size and the development model they have adopted. Within the Cittaslow network, cooperation takes place between small cities which want to grow in accordance with the “slow” movement principles and make such cooperation very advantageous for the following spheres: environmental, social, economic and spatial.

## **MIĘDZYNARODOWY WYMIAR WSPÓŁPRACY MIAST NA PRZYKŁADZIE SIECI MIAST CITTASLOW**

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**Słowa kluczowe:** współpraca miast, determinanty i korzyści współpracy, sieć miast *Cittaslow*.

### Abstrakt

Międzynarodowa współpraca miast dotyczy bardzo wielu płaszczyzn, m.in. gospodarczej, społecznej i kulturalnej. Współpraca ta jest uwarunkowana licznymi czynnikami, wśród których się wymienia: podobieństwa miast, wcześniejsze doświadczenia we wzajemnych relacjach, chęć wymiany dobrych praktyk w zarządzaniu, poprawę jakości życia mieszkańców oraz uwarunkowania ekonomiczne. Przykładem międzynarodowej współpracy miast jest sieć miast *Cittaslow*.

Celem artykułu jest przedstawienie idei międzynarodowej współpracy miast na przykładzie sieci miast *Cittaslow* oraz zidentyfikowanie determinant i korzyści współpracy między miastami.

Do sieci *Cittaslow* należy ponad 230 miast z całego świata. Źródłem współpracy tych miast jest ich podobieństwo, które w tym przypadku dotyczy ich wielkości i przyjętego modelu rozwoju. W ramach sieci *Cittaslow* współpracują miasta małe, które chcą się rozwijać na podstawie filozofii *slow*, a we współpracy z innymi podobnymi miastami upatrują wielu korzyści, zarówno w sferze przyrodniczej, społecznej, gospodarczej, jak i przestrzennej.

## Introduction

Over the last century, international relations have witnessed a trend of building positive relations not only on the macro-, but also on the micro-scale. On a micro-scale, cities have also been active in that respect. Partly, it is the result of a contemporary city-centric global economy model (TRZEPACZ et al. 2015, p. 375). Cities are becoming more relevant in international relations than the countries they are situated in. It is true that cities have limited capabilities for enforcing external policies on their own, but to a certain extent they can foster international cooperation between each other. They can enter into agreements and conclude contracts for cooperation with other foreign cities regarding various spheres of social and economic life. They can also belong to various organisations, associations or unions pursuing common goals.

The aim of this article is to present the concept of international cooperation between cities based on the example of the cities of the *Cittaslow* network and to identify the determinants and benefits of such cooperation. The issues discussed in the article result from an overview of the literature and an analysis of secondary data. An interest in cooperation between the cities of the *Cittaslow* network constitutes the basis for further research on its functioning in the future.

### **Concept, determinants and benefits of international cooperation between cities**

Cities have cooperated with each other since ancient times. The first city unions were the Greek *polis*. Another example were the spontaneous city unions called *hansa*. Those were relations between merchants of European

cities who mutually strived at facilitating the exchange of goods and trade cooperation. The most prominent was the German hansa, the legacy of which is still visible today as German cities are most active in cooperation today. Hansas fell out of favour in the 18<sup>th</sup> century, though the desire of cities to cooperate has persisted. Examples of the foundations of cooperation between cities in the contemporary world can be found in the establishment of unions of municipalities and cities of northern France and southern England after World War I and in the establishment of the European Economic Community after World War II, having developed over the years into the European Union.

If one looks at the evolution of reasons for cooperation between cities, one may note that after World War II the main reason for this cooperation was the desire to keep peace in Europe and in the world by fostering partnership and friendship between nations. In the 1990s, the determinants of cooperation included other reasons, e.g. striving for a better quality of life or fostering the unification of Europe. In terms of urban management, a tendency towards marketing was noted; that is why city residents and their needs became the core of all initiatives. Cooperation was increasingly intentional and objective-oriented. Although multiple circumstantial initiatives and projects are still pursued and implemented, there is increasing awareness of the benefits from more systemic and strategic cooperation involving more issues, viable in the longer run, reasonable and socially useful, which extend beyond economic calculations. The self-government practices force a paradigm shift from a competitive view to a cooperative and partner-like view (KACZMAREK 2016, p. 100–116).

Contemporary cooperation between cities is conducted in numerous spheres, including economic, social, cultural, environmental protection, development of tourism, city promotion, municipal economy, education, dialogue between organisations and institutions, etc. Cities also commonly engage in cooperative relations with other cities to solve practical problems related to urban management. Economies of scale in the provision of public functions, such as hospitals, airports, seaports and fire services justify such efforts among both contiguous municipalities and cities linked through networks (DOUGLASS 2002, p. 65).

The most popular example of international cooperation between cities is building partnerships. Twin towns are a form of direct cooperation between cities from different countries in order to achieve common interests of a political, cultural, economic, and informational nature as well as to exchange experiences in various fields (CZAPIEWSKA 2011, p. 41). Twin towns are referred to as friendship towns or twinning towns. In Anglo-Saxon countries they are also known as sister cities, while in socialist countries they are referred to as fraternal towns. Regardless of the nomenclature, the core principle of town twinning is international cooperation.

Cooperation between cities is, in certain situations, limited to interrelations between only two cities, but it is more often the case that its scope is wider and networks of cities and towns collaborating with each other are formed. There are two main types of networks of cities (FURMANKIEWICZ 2002, p. 5–24):

1. Multilateral (international organisations, Euroregions, national, regional and local associations);
2. Bilateral (divided cities, borderland and frontier areas, neighbourhoods and other bilateral relationships).

Cooperation between cities usually begins with casual contact which then leads to joint initiatives allowing for building formal and permanent cooperation that can even result in creating a network of cities cooperating with each other. Cities find cooperation extremely beneficial. Their activity of building international relations is also symbolic in nature as the openness of cities is a very important value during the times of globalisation. Entering into partnership agreements or forming city networks have recently become a crucial tool for the promotion of cities (BUŚ-BIDAS 2012, p. 300–315). In addition, cooperation between cities favours an exchange of experiences, the promotion of tolerance, mutual support, respecting cultural varieties and overcoming prejudices. According to TAYLOR (2004, p. 42), in city networks, cities need each other and all contribute to the well-being of the network.

Determinants of the development of cooperation between cities include similarities between such cities. They relate to the size of a city – small cities in general partner with other small cities, whereas bigger cities more often collaborate with other big cities. The city size was one of the main determinants of the establishment of Cittaslow, a network of small cities referred to further in this article. Other similarities between cities that often affect their cooperation include similar objectives and development directions, similar economic profiles, similar cultural development directions, interrelated historical heritage, a similar language, and also geographical location. Cooperation between cities situated close to each other is more extensive. Despite the development of information technology, geographical distance remains a barrier to their cooperation which, however, does not exclude it but constitutes a limiting factor. The extent, intensity, and nature of cooperation between cities also depends on the authority of territorial bodies and on the level of decentralisation in a given country. An important determinant of cooperation between cities is also the previous experiences in relations between them. Cooperation is built on the foundations of existing relationships. Prejudices or bad experiences from the past may make close cooperation, based on mutual trust, more difficult. It is not always an obstacle that cannot be overcome. For instance, although Poles are historically prejudiced against Germans, Polish

cities have the largest number of partnerships with German cities. Nevertheless, positive experiences constitute a perfect basis for the present intensity and durability of cooperation (KACZMAREK 2016, p. 113). This is the case because they inspire trust, which is the most important resource in cooperation. If trust is adequately high, it strengthens and extends cooperation and facilitates the resolution of problems that may occur. The partners' knowledge of each other, common goals and activities, common projects, similar problems, frequent and positive communication, transparent rules of cooperation, and similar or supplementary potential of cities all combine to foster mutual trust. Yet another important determinant of the development of cooperation between cities is an increased probability of sourcing EU funds when applying for them together. Therefore, it is sometimes only about economic conditions.

However, certain determinants are barriers to cooperation between cities. These include (KACZMAREK 2016, p. 104, 105):

- conflicting interests and particularism in partnerships,
- administrative and communication barriers,
- bad practices and habits of officials and partners (mental barriers),
- inability of partners to think strategically or in the long-term perspective,
- environmental, political, economic, and similar conflicts,
- formal and legal barriers,
- ignorance of benefits from cooperation (assessment of cooperation only in terms of quantitative and measurable objectives).

Notwithstanding various conditions of cooperation, the basis of this relationship is always noting how beneficial it can be for both sides, and the extent of cooperation benefits determines the intensity of intercity cooperation.

### **The Cittaslow network as an example of the development of international cooperation between cities**

Cooperation reaches a new level of development when there is a shift from an approach consisting of “establishment of cooperation between cities during the implementation of joint projects” to one consisting of “establishment of cooperation in order to implement joint projects in the future”. An example of such a development of international cooperation between cities from various countries is the Cittaslow International Network of Cities of the Good Life (Cittaslow for short). It is based on the principles of the slow philosophy whose core objective is to slow down the pace of people's lives. This concept also promotes an environmentally friendly and health-promoting lifestyle, considering individual human needs, with regards to the current and future generations, respecting and fostering the local and the unique in a globalised

world (SZELAŁOWSKA 2014, p. 194). The slow functioning of a city, despite slowing down people's lives, does not mean slowing down the economic growth of the city; quite the opposite, it means development through improving the quality of people's lives, increased attractiveness of the city and, thus, its increased competitive edge (AUGUSTYN 2011, p. 745). Cities cooperating in the Cittaslow network are supposed to employ the latest technologies and develop their advantages which, thanks to proper development strategies, are to give them a competitive edge. In cities growing by the slow philosophy principles, neither the historical and cultural heritage of the city nor its local specificity can be neglected. It is the specificity which is the foundation for the identity of the city. In the case of slow cities, it is crucial to harmonise the past and the present, taking into account future generations at the same time. "Living in a slow city and managing it means making slowness a core value, assigning meaning and tangibility to a time revolution led by those who for historical, cultural or environmental reasons resisted or resist the accelerations that the 20<sup>th</sup> century brought... It means giving oneself time to achieve quality in all aspects of urban life, slowing down in life, and reducing tensions in order to realise now and forever the value of flavours, colours, fragrances of the city and the world" (*Manifest miast SLOW...* 2011).

The slow city philosophy emerged in Italy from the concept of "slow food". The originator of that movement was C. Petrini, who was outraged by a new McDonald's restaurant opened beside the Spanish Steps in Rome. In 1999, the Cittaslow movement was born (*cittá* means a city in Italian), whose purpose was to extend the concept of "slow food" to other aspects of human life, thus offering local communities a new concept of life – a good life. The authorities of Bra, Greve in Chianti, Orvieto and Positano initiated the network. More and more Italian cities became interested in "a new quality of life" and became interested in improving the quality of life of its inhabitants, identifying themselves by being a good and quiet city as opposed to globalised cities always in a rush (BALL 2015, p. 565, 566).

To strengthen and formalise the network, in 1999 the association called the International Network of Cities of the Good Life – Cittaslow was established, which is a non-profit organisation focused on "fostering and disseminating a culture of the good life through research, experiments and new solutions for the organisation of the city" (*Międzynarodowy statut Cittaslow...* 2014). The Cittaslow network can be joined by a city with less than 50 thousand inhabitants. In individual cases, larger cities also can become members, but as a rule it is generally a network for small cities (MAZUR-BELZYŃ 2014, p. 41). Initially, cities are admitted to the international network and then create a national network. In Poland, it is the Polish National Network of Cittaslow Cities.



A city may join the network as an ordinary member or a supporting member. So-called ordinary members are any city admitted to Cittaslow which has committed itself to follow its principles and guidelines. Supporting members may be public institutions (provinces, counties, municipalities, cantons, metropolises, unions of municipalities, etc.) intending to support the network and to foster Cittaslow projects on its area. The Charter of Cittaslow identifies yet another group of entities important for its operation. These are so-called Cittaslow friends. Cittaslow friends can be cultural and scientific associations, chambers of commerce, trade associations, non-profit organisations, private companies, manufacturing and service companies, tourist companies and agricultural bodies. Cittaslow friends can support the activities of Cittaslow financially, by rendering various services, expert opinions or scientific cooperation on various projects. Cittaslow friends can also identify themselves as a "Cittaslow Friend" on their brochures, folders, flyers, digital materials, websites, etc. by using a special logo and, in the case of funding for specific projects – they can promote a project they support financially (*Międzynarodowy statut Cittaslow...* 2014).

As of May 2017, Cittaslow consisted of 235 cities from all over the world. The network is dominated by European cities – there are now about 180 of them. Second place in terms of the number of cities in the network is Asia – about 40 Asian cities foster the good life (*Cittaslow List* 2017). On other continents, the Cittaslow network is not well known, but it has been developing by admitting new members and fostering its activities, promoting the benefits that cities can achieve from being part of it and from organising the city by the slow movement principles. Growing interest in the development of the network resulted in signing the Manifesto of Cittaslow Cities by the European Parliament in March 2011, combining the 2020 EU strategy with the Cittaslow strategy.

In terms of the number of Cittaslow cities from a given country, Italy has the most – as many as 82 cities collaborate with each other within the network. In second place is Poland – 26 cities, whereas third place is Germany with 17 cities. As far as Asian countries are concerned, Turkey has the most Cittaslow cities (14), followed by South Korea (13 cities) (*Cittaslow List* 2017).

Possible benefits for a Cittaslow city include:

- 1) An increase in the satisfaction of city residents, thus a decrease in the migration of young people and others from towns to large cities;
- 2) An increase in demand for products and services, thus an increase in the investment possibilities of the city;
- 3) An increase in the number of investments aimed at providing residents with new places of work as well as an increase in distributable profits;
- 4) Economic development of the city thanks to non-decreasing domestic demand and the number of investments;

5) An increase in the attractiveness of the city from the perspective of tourists which, in turn, stimulates further economic growth;

6) Creation of a distinct, desirable image of the city resulting in a greater interest in it on the part of various managing entities, thus increasing its competitive edge.

Possible benefits for Cittaslow cities in the environmental, social, economic and spatial spheres are presented in Table 1.

Table 1  
Benefits for sustainable cities which function by the Cittaslow principles and guidelines

Area	Expected developmental benefits for Cittaslow cities
Environment	clean air, low noise level, proper amount and quality of water, clean soil, high biodiversity and productivity of ecosystems, homeostasis, spatial availability and continuity of green, leisure, and recreational areas, biosecurity, etc.
Society	social justice, high level of basic needs satisfaction, high quality of life, good and healthy conditions of residence and work, high level of services for residents, lack of social conflicts, high level of security, citizenship, good social relations, responsibility for the common good, etc.
Economy	diversified economic structure, development based on the local potential, high productivity and efficiency, implementation of latest technologies, development of an economy based on knowledge, creativity and local entrepreneurship, developed urban public transport, infrastructure facilities, greater resistance to crises, etc.
Space	aesthetic and clean environment, architectural order, respect for cultural heritage, arrangement of public areas, high efficiency of operation of urban structures, efficient spatial management, lack of, or fewer, neglected and degraded areas, spatial order, etc.

Source: own analysis of data gathered by MIERZEJEWSKA (2004, p. 120).

These benefits can only be achieved in cooperation with other cities. Cooperation within Cittaslow has so far mainly been focused on the following joint initiatives and activities (SZELAŁOWSKA 2014, p. 219):

- courses in nutritional education in schools and kindergartens in accordance with the “slow food” philosophy,
- new projects aimed at protecting local products and crafts (re-discovering them),
- programmes of communication between local entities,
- extension of the pedestrian and cyclist zones,
- periodic inspections of water and air quality,
- creation of public green areas,
- establishment of construction companies which meet the environmental protection requirements,
- regulation of construction methods,

- standardisation of electromagnetic overhead installations,
- organic production growth,
- establishment of vegetable gardens in accordance with the “slow food” philosophy,
- promotion of local cultural events,
- publishing tourist guides to slow cities,
- designation of routes for tourists,
- promotion of hospitality among inhabitants.

Benefits seen by Cittaslow cities mean to a great extent opportunities stemming from cooperation. Even if representatives of the cities cannot see such benefits now, they expect them to emerge in the future. Thus, they engage in joint initiatives. To maintain good interrelations, they hold common festivals and promotional activities; they initiate joint undertakings and participate in international meetings of member cities where it is possible to exchange good practices in city management. Cittaslow cities are proud of belonging to an international network; it gives them a sense of exclusiveness and uniqueness. In addition, it is an advantage when applying for EU funding for various initiatives. This is due to the fact that cities in the network have a clear, transparent and achievable vision of development, do not operate in the market in a chaotic manner and their activities are organised and focused on the implementation of specific objectives (see: GRUSZECKA-TIEŚLUK 2013, p. 388–391).

## **Summary**

Contemporary cooperation between cities is conducted in numerous spheres. In international communication, there has been an increased focus on more systemic and strategic cooperation, which is less selective and more multidimensional, and not temporary, but long-term. An approach to building relations with other cities is undergoing a shift – from a competitive to a cooperative view. City authorities and, increasingly often, city residents themselves find such cooperation beneficial.

Cooperation between cities is determined by numerous factors, and the most frequently cited are the similarities between cities. Such similarities may be in regards to the size of cities, their geographical location, development objectives or competitive edges. They also include previous experiences in mutual relations which may sometimes become a barrier to further cooperation. Other reasons for cooperation between cities is the desire to exchange good management practices, joining the processes of the unification of Europe or the intent to improve the quality of life for the residents of cooperating cities. Sometimes, the reasons for cooperation include economic conditions,

since it is easier for cooperating cities to source external capital for joint initiatives.

International cooperation between cities is occasionally limited to embarking on a few joint undertakings, sometimes it is about cooperation between twin towns, and recently it is more often at a deeper and more complex level, which is reflected by the creation and development of networks of towns and cities. An example of such a network on a global scale is the Cittaslow International Network of Cities of the Good Life, affiliating as many as 235 towns and cities from all over the world. Those cities collaborate with each other because they find it very beneficial. Improvement of the quality of life of residents, greater attractiveness of cities for tourists, joint promotional campaigns and easier sourcing of capital (e.g. for city revitalization) are only a few of the benefits Cittaslow cities can enjoy. Therefore, the network is growing and is being joined by more and more new small cities.

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**THE PEOPLE ARE ALWAYS RIGHT\***  
**A conceptual political economy essay into why countries  
in Central and Eastern Europe persistently remain  
at the periphery of socio-economic developments**

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**Key words:** Stolper-Samuelson theorem, over and under-valuation of GDP, economic centrality, gravity models, “expansion phase” of the cycle, “collapse phase” of the cycle, “development trap”.

**A b s t r a c t**

The paper aims to clarify in terms of political economy why countries in Central and Eastern Europe, with a special and distinct focus on Romania are seemingly unable, at least in the short and medium term, to positively alter their relative position inside the wider European economic area and particularly inside the European Union of which they are recent member states.

Commencing on a statement made by Jean Francois Revel in the mid nineties and which epitomizes the travails such an economy has to endure in order to make the transition from Plan to Market, the paper then develops on the basis of the postulate of the Stolper-Samuleson theorem which states that a developing economy is not necessarily best served by excessive openness to trade flows. The paper argues, with data, that while benefits of the integration into the single market are to a certain extent undeniable, so are the costs and for some reasons, which are explained in the paper, the latter sometimes outweigh the benefits. Small open economies are adversely affected by the excessive openness to trade brought by the integration as instead of a “normal” relation of interdependence they tend to fall into a relation of “dependence” and thereby land into the undesired and undesirable status of “dependency”. Dependencies are bound to “trail” their “metropolis of sorts” and thus an improvement in their relative position becomes hardly possible or simply takes a long time, which is difficult to accept for its inhabitants. Accordingly, people are simply RIGHT to be angry and frustrated about it, but they were also RIGHT when they joined, simply because when they exited communism, they did not realize that they were not at the level at which they entered it, but were very far below it!

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\* All the data in the paper have as a source *The Economist* magazine (2001-2016). Organization of the data into a full data-base is the own work of Dr. Catalin Ghinararu using his private collection of the magazine (successive weekly issues for the period) stretching back to Jan. 2001 and going to date Oct. 2016. The author considers this as a useful experiment in the use of alternative, consistent data having as provenance a well-established specialized press resource.

**LUDZIE ZAWSZE MAJĄ RACJĘ**  
**Polityczno-ekonomiczne rozważania konceptualne nad tym, dlaczego kraje Europy**  
**Środkowej i Wschodniej trwale pozostają na peryferiach rozwoju**  
**społeczno-ekonomicznego**

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**Słowa kluczowe:** twierdzenie Stolpera-Samuelsona, przeszacowanie i niedoszacowanie PKB, orientacja na gospodarkę, modele ciążenia, „faza ekspansji”, „faza załamania” cyklu, „pułapka rozwoju”.

A b s t r a k t

Celem artykułu jest objaśnienie w kategoriach ekonomii politycznej, dlaczego państwa Europy Środkowej i Wschodniej, szczególnie Rumunia, wydają się nie być w stanie, przynajmniej w krótkim i średnim zakresie czasowym, poprawić swojej względnej pozycji w europejskim obszarze ekonomicznym, a szczególnie w Unii Europejskiej, do której od niedawna należą.

Rozpoczynając od stanowiska wyrażonego przez Jeana Francois Revela w połowie lat dziewięćdziesiątych, w którym podsumował on wysiłki, jakie gospodarka musi podjąć, by przejść z gospodarki planowanej do rynkowej, autor kolejno rozważa postulat sformułowany w twierdzeniu Stolpera-Samuelsona, dowodzący, że rozwijającej się gospodarce niekoniecznie najlepiej służy nadmierne otwarcie się na przepływ środków w handlu. Na podstawie danych autor udowadnia, że korzyści z integracji na wolnym rynku są do pewnego stopnia niepodważalne, podobnie jak koszty takiego procesu, które z pewnych powodów, objaśnionych w artykule, czasem przeważają nad zyskami. Niewielkie gospodarki wolnorynkowe podlegają negatywnym wpływom nadmiernego otwarcia na handel, wynikającym z integracji, ponieważ zamiast rozwijać „normalne” relacje współzależności, popadają w związek „zależności” i tym samym osiągają niechciany i niepożądany status „bycia zależnym”. Zależności skazują je na „podążanie” za „pewnego rodzaju metropolią” i tym samym poprawa ich relatywnej pozycji staje się niemal niemożliwa lub trwa tak długo, że jest to trudne do zaakceptowania. Ludzie mają zatem rację, gdy czują się tym sfrustrowani i rozeźleni, a jednocześnie mieli rację, gdy decydowali o włączeniu do wspólnego rynku, gdyż w momencie wychodzenia z komunizmu nie zdawali sobie sprawy, że nie znajdowali się na tym poziomie, do którego dołączyli, lecz znacznie poniżej.

## Introduction

The paper will try to examine the causes for why 25 years after the fall of communism in Central and Eastern Europe, and in spite of significant progress that has been made, at least in *absolute terms*, in *relative terms*, i.e.: that is in terms of their relative position within the ensemble of Europe (the EU plus a series of states that gravitate around this area of economic and political integration) these countries seem to have made little if any progress.

According to Jean Francois REVEL (1995), a country that exits communism does not find itself at the level of development that it entered, but far below. Taking a clue from this political science adagio we will consider as in the



Hecksher-Ohlin theorem that in the area of the new member states there is a relative abundance of the factor of production labour while in the area of the “old EU”<sup>1</sup> there is an abundance of the factor of production capital. Given the disparity in terms of GDP between the two areas, as well as the lack of “trade frictions” (as in ANDERSON 2010) inside the EU as a result of the removal of trade barriers we will consider the entire area as a “gravity model” (as in TINBERGEN 1962) centered around the area of the “old EU” (more precisely its “core” EuroZone and its largest member Germany)<sup>2</sup>. Accordingly and using the STOLPER-SAMUELSON theorem (1941) we will look at the unwanted development whereby the new member states specialize in the production of those goods and services that require cheap labour (the factor of production in relative abundance) while the “old EU” tends to specialize in the production of goods and services that are “capital intensive” and which make use of the better qualified segments of labour, part of which are “attracted”<sup>3</sup> from the area of the new member states. Thus, in the end our demonstration will show how this unwanted specialization “conspires” in keeping the new member states’ economies in a state of “perpetual periphery” which thus explains why their relative position changes little if at all within the EU area.

### The Sinking (In) Divide<sup>4</sup>

Taking at its face value the political axiom of the Plan to Market Transition as it has been enounced in the middle of the 1990s by Revel, we will therefore consider that a country which has left capitalism and thereby the world of

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<sup>1</sup> The term OLD EU is used here so as to designate the member states of the Union previous to the enlargement wave of May 2004.

<sup>2</sup> The gravity model that has been used further in the paper as well as the “remoteness index” as such calculated (i.e.: “the centricity index”) have a dual origin: the Hecksher-Ohlin theory of the relative abundance/scarcity of production factors thus looping back to the Stolper-Samuelson theorem and the Tinbergen gravity models of trade which make use of “mass variables” such as the GDP. In our approach we have been also *inspired* by the seminal paper for the NBER by J.E. ANDERSON (2010). However we have introduced many „alterations” so as to suit our purposes. In using aggregate, mass measures such as the GDP we have taken a clue from the initial approaches relating to gravity models. These are criticized by Anderson in his paper. However for us this was the only course of action available.

<sup>3</sup> Under the form of the „free movement of workers”, which is essentially for the new member states a phenomenon of out-migration (emigration) as many of those moving freely for work either tend to remain there or to prolong their stay which thereby makes them practical emigrants. In the classical form of STOLPER-SAMUELSON (1941) this is not a development taken into account or at least not at the scale it occurred in the enlarged EU. It would have been, at the time, rather hard to conceive it.

<sup>4</sup> For the purpose of our exercise countries in the EU-28 plus the 5 countries which have strong economic ties with the EU have been grouped as follows: (1) the core-EURO zone, consisting of: Germany, Austria, The Netherlands, Belgium, Slovakia and Slovenia, (2) the PIIGS group consisting

competition at a certain given level (defined at the level  $T$ ) will rejoin, if the chance appears, as it did eventually in Central and Eastern Europe at a point that is lower to  $T$  by a degree that is hard to measure. That is, it will rejoin it at a level that is far below  $T$  and therefore at a  $T-n$ , with  $n$  to be defined by the further evolutions of that economy and society  $n \rightarrow (-\infty)$ . If so, then we may assume that the longer a society and an economy stayed outside the world of competition it will rejoin it at a  $T-n$  level, with the  $n$  deeper into the negatives by the number of years that respective economy and society stayed outside the competitive (i.e.: read “capitalist”) world<sup>5</sup>. When that economy rejoins, it will need to recreate competitive advantages building on comparative advantages such as labour and natural resources and less on capital which by definition (having stayed outside the world of “capital”) it will lack to various extents (“scarcity” of the factor of production “capital”). It will need to make this recourse in order to recreate its capacity of withstanding the competitive pressures it faces when it rejoins the world of capital which, in all cases, will be by their nature different, and by several orders of magnitude higher than the ones it was facing when it had left the world of capital. The classical Riccardian theory (RICCARDO 1817) would postulate, which was also the logic followed by the Plan to Market transition practices, that an early and even abrupt exposure to competition will solve things the best in the fastest way possible. Therefore, no protection but instead full and rapid liberalization and things will sort themselves out! This is what the Riccardian theory postulated, that exposure to trade is the best thing that can happen to an economy, the best way for it to specialize in doing at least “something” better than the others and thus being able to sell it, while importing only what it does less well than the others do.

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of: Portugal, Italy, Ireland, Greece and Spain, (3) the „REBELL Alliance” (Blyth, 2013), consisting of Romania, Bulgaria, Estonia, Latvia and Lithuania, (4) the non-EURO group, consisting of: the United Kingdom, Poland, the Czech Republic, Hungary, Denmark and Sweden and (5) the non-EU(rope), consisting of: Turkey, Croatia (as it only joined as of mid-2013), Ukraine, Russia and Norway. Small economies such as Iceland, Luxembourg-albeit this one is not so small, Malta and Cyprus, the European minnows (Monaco, San Marino, Vatican, Liechtenstein and Andorra) as well as dependent territories such as Gibraltar or the Area of Sovereign UK bases in Cyprus were not included/mentioned, as were not included/mentioned the overseas territories of various European countries irrespective of the fact of having their GDP included or not into the one of their metropolitan territory. Not taken into account were the economies in the Western Balkans (Bosnia Herzegovina, Serbia, Macedonia-FYR, Montenegro and Albania), the Republic of Moldova and the Republic of Belarus. No mention is being made of entities not enjoying full international recognition such as the Turkish Republic of Northern Cyprus and Kosovo. Therefore our version of “the European economic ensemble” is a mere convention adopted for the purposes of this paper. However we do nevertheless consider that it covers those countries/economies (expression used interchangeably) that make for an overwhelming share of the “European GDP”. It is therefore “representative”.

<sup>5</sup> This sentence may be looking as „disregarding” of other arguments but it has to be taken as the „conventional mainstay” of our comprehensive argumentation in the paper. The forced upon „experiment” of communism which has lasted for around half a century remains the main cause for which the countries in Central and Eastern Europe fell so massively behind in terms of their development.

Using such logic, removing the anti-competitive barriers inherited from central planning would be the best way to put to work whatever comparative advantages were available to these economies and build competitive advantages that would ultimately help them resist competitive pressures and work their way back into the mainstream of the capitalist world (GHINARARU 2006, 2010). However, things did not prove to be so simple. On the contrary, what happened was that exposure to competition razed to the ground most of the productive base these economies had acquired. For the better or for the worse, the decades of central planning did little to create new competitive advantages and thus maintained these economies at the periphery of the capitalist world with negative implications for their workers (the factor of production labour). Thus, instead of proving the simple, plain and well acknowledged theory of David Ricardo, these economies, including Romania's, became testing grounds and evidence for an oddity of a sorts in the history of economic thinking (albeit not less important) i.e.: the Stolper-Samuelson theorem (STOLPER, SAMUELSON 1941). This theorem basically postulates<sup>6</sup>, that while the Riccardian theory proves correct for developed/advanced economies (ABREGO, EDWARDS 2002), for developing economies it may be harmful for their workers and especially harmful for the ones that are skilled. Thus competition may wipe out their industries when protection is removed, as the labour factor practically always declines. The theorem builds upon a *W-W* case assuming a hypothetical country with two main industries, watches and wheat. There is a tariff protection of 10% that applies only for the watch makers but not for the wheat growers. Say that the market is being liberalized (the 10% tariff protection removed), as it did in the Plan to Market transition and even more in the process of EU Accession. What happens to the watch makers? The price of their outputs will drop. In such circumstances wheat producers will seem to be very profitable. However they do not use much skilled labour. On the other hand, watch makers will need to shed labour as their prices are falling (the effect of liberalization or the removal of "trade frictions" as in ANDERSON 2010) (AHSAN, MITRA 2013 in ANTHONY 2016). As we said earlier, not much of this labour will be taken aboard by the wheat producers which may expand production. Moreover as prices of land (rent) will tend to increase, which may happen once markets in general are open due to the inherent scarcity of land as a factor of production, they may be also deterred in their expansion and therefore the amount of labour they may have taken aboard and which may work so as to compensate the decrease in labour demand from the watch makers, will not be substantial (GHINARARU 2006, 2010). However, in the end

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<sup>6</sup> Later P. Samuelson partially retracted on the postulates. However, the theorem remains in the history of economic thinking with the names of both of the authors and this despite the later and partial retraction by Samuelson.

producers may get around this phenomenon. Watch-makers may decrease but in the end they may benefit from low price labour which can be turned into a competitive advantage – albeit a low-level one, and regain some market share. Wheat producers will retain a superior profitability and they may also benefit from cheap labour. The ones that will be certainly at a loss will be workers or labour, and especially labour that is more qualified (i.e. the watch making labourers in the example), or precisely labourers that are in scarce supply in a developing country/economy. Wheat labourers or those that in such a country may be in a rather more ample supply due to their low skills will also lose, but their losses will be to a lesser degree. As labour is a factor that goes into all of the production processes, when it goes into a tailspin, in general the economy tailspins as it means that demand becomes depressed and incentives for labour to improve its skills are diminishing (higher skilled labour in our example stands to lose far more than the low skilled, which in the end may even win a little). As a result, living standards fall and while some producers may enjoy competitive export advantages, the domestic market shrinks which overall maintains that the respective economy is on the fringes of the capitalist world economy. Summarizing, STOLPER-SAMULESON (1941) points to the fact that in the cases of developing countries, the elimination of “protections” hurts industries that make use of skilled labour (i.e.: ultimately high value added ones from the point of view of the production processes/undertaken) while generally maintaining activities that are less value-added intensive if not in the terms of their end product, at least in terms of their processes/activities. This not only depresses the domestic market, but makes it more alluring for skilled workers to choose leaving that labour market (i.e.: liberalization of the product market may come also with a liberalization of the labour market which actually did happen in the case of all of the economies in Central and Eastern Europe) which further depresses the “developing market” pushing it, or simply maintaining it, at the periphery of the capitalist world market as it both loses domestic demand (effect of low wages) as well as potential for further development (loss of skilled labour through emigration). Accordingly, the current loss is compounded by a future loss. Loss of demand is compounded by a loss of growth and development potential. This would fully explain why re-entering capitalism (the “good” thing indisputably!) at a lower level than the economies which did not leave decades ago, and quickly liberalizing (the actually “not so good thing”, and here comes the dispute!) does not “automatically” restore competitive advantages and does not “automatically” generate capacity to withstand competitive pressures. It actually wipes out everything that exists (good and bad together) and exposes the economy to such pressures that it cannot possibly exit the trap of a peripheral position. This fully reflects on the labour force as a factor of production and especially on its most skilled

segments which cannot possibly find an adequate match for their skills in the local market. Accordingly, if liberalization of the product market is also followed by fast liberalization of the labour market (this would be the development of the Stolper-Samuelson which back in 1941 no one could have conceived) then the small advantages postulated by the Stolper-Samuleson would fail to materialize as workers that would have settled for lower wages in a “closed” labour market would now rather migrate, which would put further pressure on those industries already pressed by product price liberalization, possibly annihilating them. Therefore the capacity to withstand competitive pressure which could have somehow restored skilled workers who would have settled for lower wages and possibly rebuild those industries also evaporates as these workers choose rather to emigrate. This further affects the capacity of the respective economy to rebuild its competitive advantages. In the end it sinks further into the periphery, with the divide between it and the rest of the capitalist world, which it belatedly rejoined, only widening. In the best case scenario, it will merely hold on to its peripheral status in relative terms (progress will exist though in absolute terms). The Stolper-Samuelson theorem epitomizes very well the evolutions of the transition economies in Central and Eastern Europe. The liberalization of the 1990s (by removing the protectionist barriers of the former COMECON) exposed most of the industries to an effect that is similar to the one depicted for the hypothetical watch makers of the Stolper-Samuleson theory. Much of the high value added, high skilled labour industries had to shut down releasing labor which thus lost out. In the meantime however and unlike in the basic theorem, the fact that the land was not a commodity during the communist regime or it was considered to be owned only with severe limitations, meant that prices surged after market rules stepped into these economies to levels that discouraged even the so-called wheat producers of the theorem. Thereby the possibilities for the high skilled workers to go into lower skilled occupations were reduced marking yet another loss for labour. Accordingly, under the postulates of the theorem and even much more for the countries of Central and Eastern Europe which experienced the Plan to Market transition, a developing country that opens itself brusquely or prematurely to international trade (i.e.: removes protective barriers with the outside) ends up specializing itself not in what it can better produce than the others, as in the classical theorem of David Riccardo, but ends up being forced to specialize in what it can more cheaply produce or more accurately in what it can produce with the cheapest labour. In effect its comparative advantage ends up becoming cheap labour in and of itself! This becomes its chief commodity of export as each and every process of production tends to base itself on this sole comparative advantage. If at the moment of liberalization labour is abundant, as it has been in Romania at the commencement of

transition and actually in most of the countries of Central and Eastern Europe, then this “negative comparative advantage” – due to the fact that it actually penalizes the factor of production instead of rewarding it, tends to become entrenched up to the point when its eventual scarcity may start working its way into the market thus reversing the process. As labour enters all of the production processes, then the low price of labour maintains a low level of prices throughout the economy in the sense that cheap labour generally generates cheap outputs (i.e.: to read low value added ones) and thus the fact that skilled labour loses out means also that “high value added”, especially in terms of economic activities undertaken in an economy, also lose out. Accordingly the economy turns into a cheap labour-low value added one as the advantage of cheap labor only exists and works when outputs or rather processes/activities are themselves low value-added. Consequently the economy turns into a low skilled labor-low value added economy, or literally into a periphery. As with with a great metropolis, where expensive, glamorous brand stores tend to line the central avenue while penny market shops cluster at the outskirts offering mass consumption, cheap and, for most of the cases, rather low quality goods, in the world and even more in the integrated European economy, developed, high labour price-high value-added process and output economies line the main avenue, or the center of the economic area while the cheap labour-low value-added ones, struggle at its fringes.

While the theorem in itself provides the theoretical foundation for the idea that re-entering the competitive world of capitalism for such an economy may prove tricky indeed and if improperly managed may actually not take it out from the periphery at which it has been thrown by decades of economic mismanagement under communism, with consequences for its labor force dire enough and having the capacity to spread through the channels of the production process due to the centrality of labour as a factor of production-a fact affirmed by the Stolper-Samuelson theorem, capturing or quantifying this phenomenon may prove difficult. Embarking therefore on this particular exercise, we have taken into account the following:

a) the Stolper-Samuelson theorem implies that through its centrality to ALL processes of production the price of labour affects all prices in an economy. When it rises it triggers them all upwards, while when it falls it takes them all down with it. Also the theorem makes it plain that such an economy tends to specialize, after a shock-liberalization, in low value added products as it tends to go towards more low skilled, low priced labor. Therefore while the volume of output of the economy may not be affected (although initially it is) the price of the output is surely affected-the economy will tend to generate low price outputs as it works with low price labour, this becoming actually its main “comparative advantage”;

b) the initial axiom of the transition as Jean Francois Revel put it (1995) states that an economy will exit communist and Central Planning at a level far much lower than the one it entered, therefore into a position that would be peripheral when compared to the position it had when it entered the system, in relative terms of course. This peripheral position is then re-enforced and subsequently entrenched especially if the labor force is abundant due to the manifestation of the Stolper-Samuleson theorem effects. Abundant labour depresses labour prices which then further depress all prices and pushes the economy deeper onto the low labour-low value added slope;

c) when entering, simply being in the immediate vicinity of an area of economic integration and high competitive pressures (e.g.: the EU for our case), such an economy tends to compound losses due to the competitive pressures exercised over it by the other far more developed economies which through their scale and scope preventing thus the adjustment ultimately taking place in the classical variant of the Stolper-Samuleson theorem. In other words, the other economies deprive the economy in question of the potential to develop, by simply retaining out of it only those sectors where the cheap labor advantage works. As such, areas of integration tend to act like a single economy according to Smithian postulates (Smith 1776); whereby larger economies tend to get even larger. When a small, developing economy enters such an area or opens-up it is bound to preserve out of its structure only those sectors where it genuinely holds an advantage. If this advantage is cheap labour, as it happened in the case of many of the economies in Central and Eastern Europe, then only those sectors will remain out of it, all others will simply get out. The low-entering economy will be practically relegated into a peripheral status due to the fact that prices of labour are central to the system of prices throughout the economy.

To measure the above we have chosen a simple and aggregate enough system of statistical indicators (according to Hecksher-Ohlin) so as to capture the theoretical construction above at a level of generality that would both enable quick understanding as well as point to the dangers of such a situation by showing how such an unwanted status becomes entrenched and how it has the force to perpetuate itself. Central to our system is the idea of prices and price level(s) which signal the “relative position” of the economy. The system thereby consists of three simple measures (m1, m2 and m3) that relate to the most aggregate gauges of economic activity, the GDP. The system will focus thus on outputs of activity, prices and outcomes (m1o, m2P, m3O). The GDP is taken first (m1o) as an aggregate measure of outputs and at market prices thus aiming to point out the immediate economic reality, which is the one into which households, business and the state operate. This aggregate measure also shows how an economy expands or contracts itself and therefore the extent to

which it manages to enhance its relative position inside a single economic integrated area by managing to adjudicate for itself a larger or a smaller share of the total output that is generated inside this area. To simulate for the flows of trade in frictionless trade area, i.e.: the EU plus Norway, Switzerland, Turkey, Russia and Ukraine this measure will be weighted by the share of the nominal GDP of a said economy as % of the total nominal GDP of the area (i.e.: EU plus the above-enumerated states). Accordingly:

$$m1o = \left[ \text{GDP}_{ms}\% \cdot \left( \frac{\text{GDP}_{ms}}{\Sigma \text{GDP}(\text{EU} + 5)} \cdot 100 \right) \right],$$

where:

ms – stands for a member state of the EU (it will also apply in this paper to the five non-EU states included).

The second measure (m2P) is related to prices. We therefore take again the GDP at current prices as an expression of the “real prices” and “real price positioning of an economy”. In the meantime we take the GDP at PPP prices or at a level of prices which actually express the purchasing power, a more than important element for our approach as it does also express the purchasing power of the salaries (the remuneration of the “fundamental” factor of labor production). We will consider as a measure of the “correct or fair prices” and an expression of “correct or fair” positioning of the economy within the ensemble and we will take this at being 1 or 100. Therefore:

$$m2P = \left[ \left( \frac{\text{GDP}_{mscp}}{\text{GDP}_{msPPP}} \cdot 100 \right) - 100 \right],$$

where:

ms – has the same significance as above while,

GDP<sub>mscp</sub> – GDP at current prices in US\$,

GDP<sub>msPPP</sub> – GDP of the respective member state at PPP.

Values of the ratio above 100 (1) will be treated as “over-valuation” of the aggregate output and of the factors of production standing behind it, labour included and thus necessitating to a certain degree devaluation to restore competitiveness, while values of the ratio below 100 (1) will be treated as “under-valuation” thus allowing for increases in prices of the outputs as competitiveness by this measure is not under threat<sup>7</sup>.

<sup>7</sup> Thus we will apply the simple principles of the PPP theory.



The chart below (Fig. 1) paints a portrait of the European economy in terms of the “under” and “over” valuation of the aggregate output which incorporates the input of the labor factor and thus makes for a measure of its own (i.e.: of the factor labour) under or over valuation.

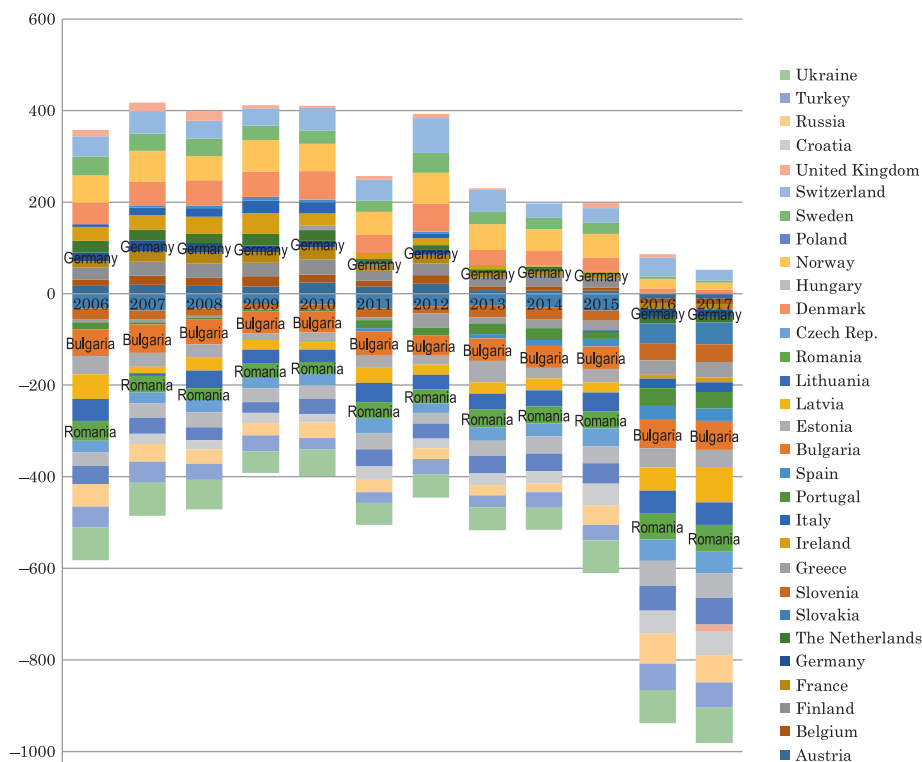


Fig. 1. The European „Price Stack” (GDP/ aggregate output „over” and „under” valuation) (2006–2017)

Source: The *Economist Intelligence Unit-EIU* and author’s own calculations.

Finally we will look at the most synthetic measure of the living standard (m3O) and we will take the GDP per capita, as year on year variations, weighted again by the share of the respective country’s (ms) GDP as of the aggregate GDP of the European area (as specified above). The formula for m3O will thus be, analogous with the one for m1o:

$$m3O = \left[ GDPpcPPP_{ms\%} \cdot \left( \frac{GDPpc_{ms}}{\Sigma GDPpc(EU + 5)} \cdot 100 \right) \right],$$

where:

all symbols retain previous significances while GDPpcPPP will stand for the GDP per capita at PPP or a given member state, expressed as % year on year growth.

On the gauge of the crude real GDP growth, we would notice without much difficulty the standard benchmark of the Germany economy – we will use this benchmark of the German economy which we would consider, due to its size (effect of scale) and diversity in terms of productive economic activities (effect of scope) as being for all purposes the “economic core” of the EU area (plus 5) the Romanian economy performs more than satisfactory for the years before, the economic crisis of 2009–2011, when standard deviation on this particular gauge reaches healthy values of more than 4 points compared to the conventional benchmark of Germany. This should have pointed to the fact that the Romanian economy was progressing steadily from the periphery of the area to the core. However this is just an absolute measure that pays little attention to the context or the “relative” position from which the Romanian economy has approached this race to the core. This is captured by our first derived measure (m1o). By this gauge the Romanian economy barely moves ahead. Standard deviation for this gauge on the benchmark of Germany barely reaches 0.20 points in the best years before the advent of the crisis slowing to a crawl of even 0.01 points after the crisis. This shows practically that Romania actually made little progress in its race to the core precisely due to the small size of its economy in the overall ensemble of the economic area and possibly due to its reduced scope (low diversity in terms of products produced). In other words, the base effect of sorts which helps in explaining the high rates of growth which the Romanian economy experiences alike with any developing economy, at least in absolute terms, also helps explain why in our relative terms the progress is more than dwarfed. Therefore, even at high rates the progress or actually the inroads made towards the core of the area or towards a position that would allow the economy to compete better and on better terms, is actually more than limited. The advent of the crisis, by cutting these rates of growth and pushing them into negative territory for a couple of years adds to this painfully slow and disappointing inroad towards the core. It points to the fact for an economy that starts low in terms of its position inside such an economic ensemble, high growth rates are needed for a very long number of years for the progress or the inroad as we have agreed to call it, to become perceptible. If the periods of growth, even at high rates are short lived and interrupted by bouts of negative growth or slow positive growth rates then the progress will remain negligible and, what is more, at the level of individual enterprise and household, practically imperceptible (the so-called, “development trap” as in GARRETT 2004). In other words and in spite of its real progresses, the country will remain at the bottom of the pyramid. To exemplify better, we will resort to a small exercise in comparative analysis and we will compare the Romanian and Polish economy. The Polish economy has experienced more than 20 years of continuing economic growth managing even to

avoid the slump of the 2009–2011 global depression. Due to the crude fact of enjoying a long enough number of consecutive years of growth it improved its position within the ensemble from a share of 2.10% in 2002 to a share of 2.72% in 2009, falling back after the crisis to a notch above its starting point at 2.13% of the total GDP of the area (i.e.: the EU plus 5). Therefore for all the consecutiveness of the years of growth the progress or the inroad as we have agreed to call it is of only 0.62 pp before the crisis. Post-crisis, the country returns to its initial starting point at the beginning of the first decade of the century when it was not even yet a member of the EU. Accordingly, for all of the effort made and for the remarkable consecutiveness in numbers of years of growth enjoyed not only since the start of the current century, but without interruption since 1994, the inroad towards the core was a net 0.03 percentage points. In other words the position of the Polish economy for all the praise it attracted has practically witnessed little change within the ensemble of the European economy. Returning to the case of Romania, the advance was from a 0.49% of the total GDP of the area in 2002, to 0.99% in 2009. By 2016 it had fallen to 0.81%. Therefore all the effort up to the advent of the crisis only gave an inroad of 0.5 pp. The net worth after the brutal passage of the crisis has been further reduced to only 0.32 percentage points. Again, practically no significant progress although, slightly more than in the case of Poland at least (0.32 percentage points of inroad after the crisis against only 0.03). It seems therefore that in order to overcome the initial disadvantage of entering the fold at a far much lower-level, countries in Central and Eastern Europe need more than a “fortunate” combination of both a sufficient number of consecutive years and a sufficiently high rate of growth. This is very difficult to find, as fortune or luck (ALIBER, KINDLEBERGER 2014) is a variable sufficiently vaguely defined to be taken into consideration when designing economic policies. It points to the fact that for an economy that starts low in terms of its position inside such an economic ensemble, high growth rates (EICHENGREEN et al. 2011) are needed for a very long number of years for the progress or the inroad as we have agreed to call it, to become perceptible and possibly lead it out of the “trap”.

Therefore the conclusion coming simple and clear is that a low departing point can be overcome only with much difficulty, and overcoming it does not come within a reasonable period for the individuals to perceive it sufficiently, especially when viewed from a comparative perspective. While the position betters in absolute terms, in relative terms one cannot hope to surmount the disadvantage, i.e.: the relative position does not change in spite of the real change in absolute numbers!

Having seen now that at least with regards to their crude progress not much of an inroad towards the core of the economic area is made and therefore

their relative position within the ensemble of the integrated economic area does not improve, or at least if it does at a very slow pace, thus making it practically imperceptible and negligible, let us look at the second measure and see if these peripheral economies at least preserve their price advantage which would practically enable them to compete at least on this basis, within the integrated economic area. Therefore we will look at what we have labelled as the GDP Price Ratio (m2P) or the simple ratio between GDP as expressed in current prices and GDP as expressed at Purchasing Parity Power (PPP)<sup>8</sup>.

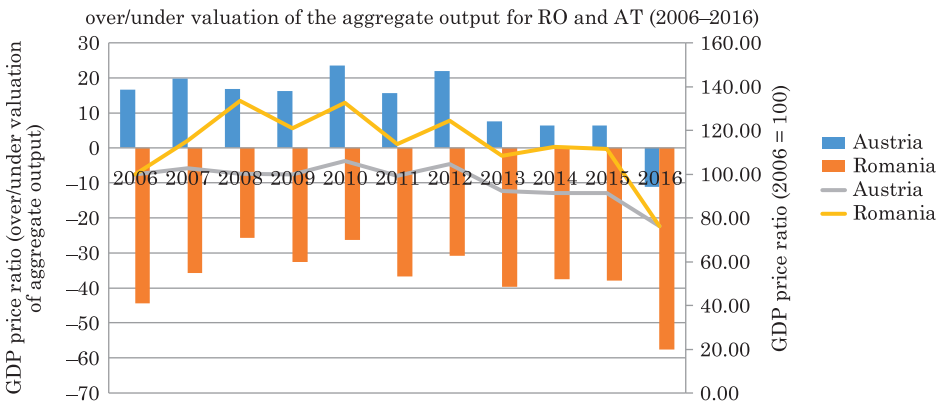


Fig. 2. Austria and Romania by the GDP price ratio (m2P)

Source: Own elaboration based on data from the EIU – *The Economist Intelligence Unit (2006–2016)*. Bars are the GDP price ratio, yearly values; Lines represent the evolution of the GDP price ratio for RO and AT taking the year 2006 as the base = 100.

Taking as an example the case of Austria and Romania (see Fig. 2) then, the Austrian economy has a GDP Price Ratio that goes from a value of 116.61 in 2006 to 89 in 2016 (shown in the positives in the chart). For the same period of time, Romania displays values of the ratio between around 55 in 2006 to a low of 42 in 2016 (shown in the negatives in the chart), with the highest value somewhere around 73–75 witnessed in 2008. This says that in terms of prices, Austrian output is over-priced/overvalued (values above 1 or 100) while Romanian output is under-priced or under-valued (values below 1 or 100). As due to globalization, a lot of products are now standardized and therefore they should command the same price, it results that the difference can be easily ascribed to the factor of production labour. Salaries are far lower in Romania than in Austria and as labour enters all processes of production it therefore depresses the price of aggregate output. In time however this should have

<sup>8</sup> See explanations and formula for this measure as per above in this paper.

eroded, i.e.: the price of labour should have climbed. As we would look to the example of the pair above, in the decade between its entering into the Union and 2016, Romania has actually entrenched this low level advantage (i.e.: cheap labour) as the GDP Price Ratio went downwards, from a value of around 55 to a value of 42, thereby marching downwards and not upwards by a hefty 25%. Therefore under-valued Romania continued to de-value/undervalue its activities, which ultimately means its labour! Over-valued Austria also lost 25%, but still remained 100% above the Romanian values. Therefore, if Austrian aggregate output was in terms of prices more than 100% higher than its Romanian counterpart in 2006, it remained so in 2016 as although over-valued Austria under-valued, under-valued Romania, under-valued at its turn as this was its only way to remain “competitive”. Thus the relative position of the two countries did not change. Romania remains a low value added process of production economy while Austria retains the opposite position (i.e.: that of high value added, high-priced, high salaries activities).

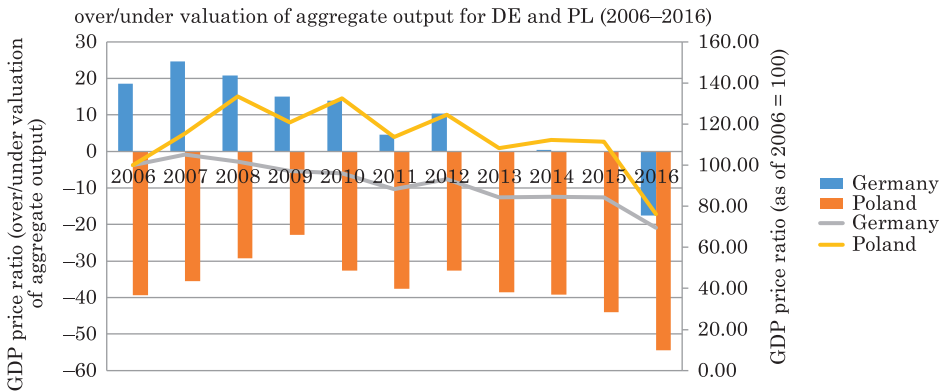


Fig. 3. Germany and Poland by the GDP price ratio (m2P)

Source: Own source based EIU data (2006–2016). Bars represent yearly values of the GDP price ration. Lines represent the evolution of the GDP price ratio for DE and PL taking 2006 as the base year = 100.

The same process would hold if we looked at another pair, Poland and Germany (see Fig. 3). The GDP Price Ratio of Germany went down, from a value of 118 in 2006 to a value of around 82 in 2016. This marks a decline of more than 30%, which has worked to the advantage of the German economy as it improved its competitiveness. Poland went from a value of 60 in 2006 to a value of 45 in 2016 thus losing 25% and again entrenching the “competitive advantage” of low prices, basically derived from low or lower-cost labour.

Finally if we were to look at a third pair, say France and Bulgaria (see Fig. 4). Bulgaria goes down from a value of the ratio of 41 in 2006 to a value of 37 in 2016, possibly the lowest in the whole of the integrated ensemble, except for non-EU countries. France, in its own quest for competitiveness and under heavy pressure induced by the financial and economic crisis, goes down in terms of the same price-lead ratio from 114 in 2006 to 87 in 2016. This implies a fall and consequently an improvement in price competitiveness of 24%. However, the response of BG has also been a fall!

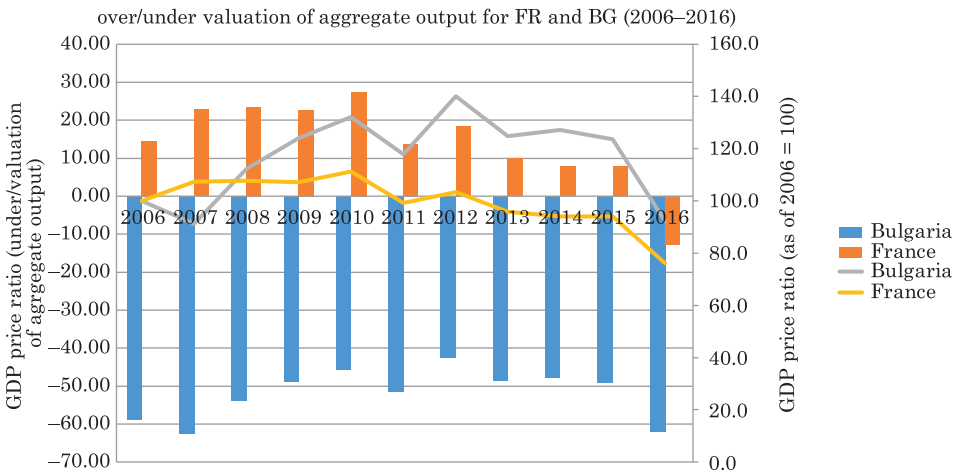


Fig. 4. France and Bulgaria by the GDP price ratio (m2P)

Source: EIU data processed by Dr. Catalin Ghinararu. The bars in the chart represent values of the GDP price ratio for each year in the series. Lines represent the evolution of the GDP price ratio for BG and FR taking 2006 as the base year = 100.

In other words much of the improvement in price competitiveness of the core economies of the EU and chiefly of the German economy, the largest of them comes from the downward pressure in terms of pressure exercised upon the economies at the periphery of the EU. This in turn means that the price of labour, already low in these economies is pressed even lower. Therefore the logical result, their position cannot improve. For the GDP is an expression of output but of a priced output. If prices get lower due basically to measures taken to restrict and constrain the growth of wages then the priced output measure which is the GDP is bound to remain low. A low value of the aggregate called GDP means a periphery position within the integrated economic ensemble with all the consequences stemming from this. The first and most important one is the one stemming from the Stolper-Samuelson theorem which means that in order to compete at ever lowering prices skilled labour loses out in face of unskilled one which at its turn means that high value added

processes are losing out in front of the low value ones. As in these economies, it was never the case of high value added production processes then the direct implication is an entrenchment of low value added production processes and low salaries<sup>9</sup>.

The deflationary move in the core economies, results in a proportionate deflationary pressure in or rather ON/UPON the periphery economies with profound negative effects. In terms of the race towards the core of the integrated economic ensemble which is the Union and which actually means a bridging of the development and living standard gap this implies the zero progress rate that we have witnessed while examining the crude rates of growth as well as their adjusted variant. The progress is practically nil and the deflationary pressure exercised by core economies aiming at improving their competitiveness pushes low prices in the periphery economies even lower thus exercising an ever more powerful deflationary effect which entrenches the low prices-cheap labour character of these economies and thus explains why in terms of their relative position they do not show any sign of progress.

As we previously have done, we will look now at the standard measure of dispersion of the GDP Price Ratio values. We will thus examine the unwelcome convergence of the deflationary movement in these periphery economies which are slowly aligning with the core thus practically entrenching their position as periphery. Normally given their low start development status these economies should have enjoyed a constant movement of price increases as their domestic markets would slowly develop and as demand would constantly outpace supply. However as these economies are absorbed into the deflationary move of the “core area” this fails to happen. Movement of prices in these freshly reborn market economies should have been sharply divergent from the one in the saturated markets of the old EU. Therefore, one would expect them to diverge and show high dispersion of their values against the standard benchmark of the German economy. Instead they are converging with their standard deviation ever lower against the benchmark of Germany. Using the same grouping of countries, we will observe the following for the period between 2006 and 2016:

- 1) for the core countries of the EuroZone which includes Slovakia and Slovenia and where the autonomy of the monetary policy is zero, the standard deviation against the benchmark of Germany goes down from a value of 22.42 in 2006 to 15.02 in 2016, which shows that all of these countries tend to converge towards the core economy of Germany and align their movement of prices to the ones of the German economy;

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<sup>9</sup> A confirmation of this so-called “specialization” is to be found also in *The Economist*, Dec.10-16th 2-16 issue, Free Exchange column, p. 66.

2) the PIIGS which are the countries that were the most affected by the economic crisis of 2009–2011 see their divergence from the benchmark of Germany reduced from 16.68 in 2006 to 10.96 in 2016. This shows the harshness of the adjustment measures applied and the force of the internal devaluation measures adopted. All of these countries also have zero autonomy of their monetary policy and although while facing the crisis the internal devaluation path was surely the least advisable, in the absence of an independent monetary policy it was the only path remaining available which explains the remarkable convergence with Germany;

3) the most remarkable convergence is nevertheless shown by the small economies of what we have called the REBELL Alliance. Romania, Bulgaria, Estonia, Latvia and Lithuania converge rapidly with Germany with the standard measure of dispersion falling from 28.44 in 2006 to 15.79 in 2016. Again this is a showcase for the internal devaluation measures which have induced deflationary pressures where these had no place. Prices were anyway lower in these economies so no lowering was necessary any longer especially with regard to the price of labour. The openness of these economies and their small scale meant that as prices declined in the dominant economy they had to go even lower on the price ladder, although they were already low which illustrates again the Stolper-Samuelson theorem of the openness to trade being in certain circumstances harmful to developing economies;

4) the least of convergent countries are the so-called “non-Euro” group which includes Poland – the only country to have retained positive GDP growth throughout even the most acute phase of the current economic depression, the United Kingdom – the only country that retains in the EU full control over its monetary policy and some other countries where internal devaluation measures have been resisted through different means. Here the values fall from 37.36 on 2006 to only 35.27 in 2016 which shows that these economies continue to maintain a healthy degree of divergence. Their fall into the deflationary maelstrom opened by the core economy of Germany with the aim of improving its competitiveness through internal devaluation measures is thus and to a certain degree avoided;

5) finally the non-EU countries show rather more convergence towards Germany with respect to their output prices; values of their standard measure of dispersion against the benchmark of the German economy, fall from a value of around 38 (standard deviation value against Germany) in 2006 to a value of 21.33 in 2016;

6) finally if we take all of the Central and Eastern Economies together, we will see that their convergence with Germany in terms of the movement of prices is more than hefty. The standard measure of dispersion falls from 20.89 to 11.66. Thus for economies where practically no deflationary movement was



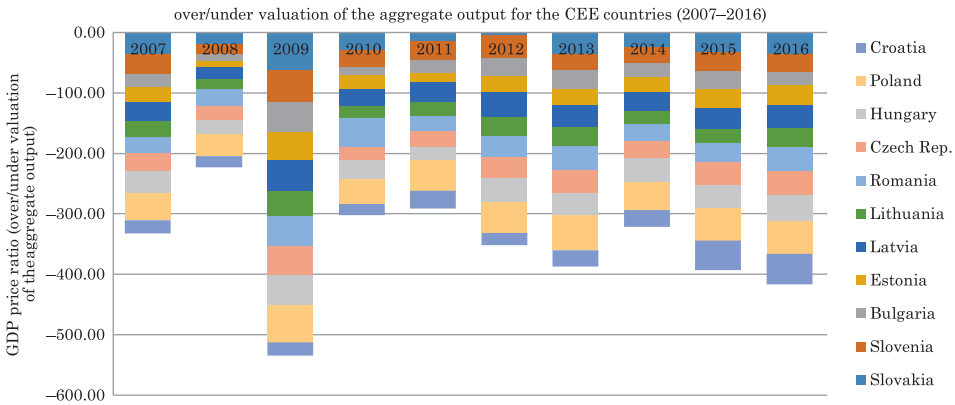


Fig. 5. Over/undervaluation of the aggregate output by the m2P for all the CEE countries  
Source: Own source based on EIU data (2006–2016).

necessary, prices are going downwards. Devaluation at the core of the area is “mechanically” followed by devaluation at the periphery.

Values of our measure called the GDP Price Ratio above the 100 point to the fact that goods and services in a particular economy are actually over-priced (e.g.: if the value of the GDP Price Ratio for Germany in 2006 was 118.58 then it means that roughly all goods and services in Germany were actually over-priced by 18%). Thus in order to get competitive they would need to decline, which they did and this was the actual policy of successive German governments. By contrast, if for Romania the ratio was 55.66, the goods and services were under-priced by around 45% and therefore even an increase of their prices would not have damaged their competitiveness. Accordingly deflationary policies were not a necessity. Deflating when Germany is deflating, by a strange sort of automatic move, means applying a sort of price-pegging. The result is generally damaging as competitiveness is not practically increased or if it is increased, it is at the expense of domestic labour. This is low-level competitiveness and once entrenched it practically undermines the economy as it pushes the price of its fundamental factor of production – labour, lower and lower and thus entrenches low-value added production processes, maintaining finally that economy as a perpetual periphery. Therefore the “automatic” adoption or the “implicit pegging” which took place in these economies serves to show that premature and full opening of such an economy may result in the importation of economic policies and phenomena which are in most of the cases counterproductive as they tend to lock such an economy into a position of periphery and “chain it” to the core economy policies, in most cases *implicitly* although in some cases it may become explicit through

a variety of means, thus preventing any further progress from periphery to core with the consequence of maintaining the gap. Therefore, while progress may be registered even for such an economy, it will always be very slow and it will never actually manage to close the gap with the core. On the contrary and as we have demonstrated it entrenches itself into a periphery position. If during favorable economic circumstances this may be mitigated to a certain extent, in adverse economic circumstances the effects are devastating as the respective economy not only remains in the periphery but has the tendency to fall even farther and become a simple low-value added, cheap labour, annex of the core economy. The conclusion is that the Stolper-Samuelson theorem applies fully as developing economies accessing prematurely integrated economic areas tend to enter an implicit pegging of the policies pursued by the core of the area which in adverse circumstances pushes them towards un-necessary deflationary measures that adversely affect labour and especially skilled labour. The result is a further slip down the value added ladder and an entrenchment of the low-level competitive advantage of cheap labour.

### The Collapsing STAR

To sum it all up, we will build a synthetic measure which will bundle into a coherent shape the three measures above<sup>10</sup>. We will call it the “centricity index” (Icen). The basic idea behind it will be to combine into one single measure all of the three measures we have come with and to see if even by a synthetic gauge the same will be valid, i.e.: that the countries in Central and Eastern Europe, Romania included are keeping their position at the bottom of the EU stack. The index in itself will therefore be the product of three index numbers, the index of m1o (1), the index of m2P (2) and the index of m3O (3). The values of the index numbers will be thus obtained by applying a “normalization”<sup>11</sup> formula for the crude values of the three measures, which will imply calculation of maximum and minimum values for all of the series. The formula for normalization will then be the following:

<sup>10</sup> Given that results are convergent with the ones for m1o and m2P, the third measure, designated as m3O, will not be discussed in the paper (its values are however used for the construction of the index).

<sup>11</sup> By “normalization” we understand the application of a simple formula whereby the numerator will have: (Real Value – Min.Value) while the demoninator will have: ( $V_{\max} - V_{\min}$ ). In the end the formula will be: Normalized value =  $[(V_{\text{real}} - V_{\text{min}})/(V_{\text{max}} - V_{\text{min}})]$  where: (1)  $V_{\text{real}}$  will stand for the real value of each economy/country, (2)  $V_{\text{max}}$  will stand for the maximum value for each of the variables taken into the construction of the index as expained in the main body of the text, finally (3)  $V_{\text{min}}$  stands for the minimum value for each of the variables taken into the construction of the index as also explained in the main body of the text. Am analogous formula-at origin, was used by the world famous Human Development Index used by the UNDP.

$$I(m1o, m2P, m3O) = \frac{V_{\text{real}} - V_{\text{min.}}}{V_{\text{max}} - V_{\text{min.}}}$$

Using the normalized values of the three indices we will compute the Index of Centricity after the formula:

$$I_{\text{cen}} = \left\{ \frac{[(1 \cdot m1o) + (2 \cdot m2P) + (2 \cdot m3O)]}{5} \right\}$$

The result will sort of look like a “star” which pulsates with the expansion and recession phase of the economic cycle or rather with an expansion and collapse phase as we will agree to call the negative phase of the cycle as our “star” that initially expands into the outer rim while when the cycle recedes it simply plunges inwards into a sort of collapse movement. The values for the expansion phase, for which we have chosen to show the year 2006 (see Fig. 6) show clearly a movement of centrifuge whereby the economies of the area expand into the outer rim with the large economies leading the movement and going farther from the centre. Some of the economies go farther than the others, such as Spain which actually shows very well their overheating and loss of competitiveness. Even Germany which during this phase showed a rather more restrained expansionary drive for reasons we will not enter into detail here but which are basically common knowledge, is going towards the outer edges of our constructed “star”. As for economies such as Romania and Poland, they apparently miss the movement as they continue to remain kind of blocked into the bottom of the constructed star. This actually shows that they continue to hold their position as low price suppliers. Even if the constructed “star” of the extended European economic area expands outwards, the two main economies of Eastern Europe keep “quiet” their inner position which means that they continue to remain under-priced by all measures.

During the collapse phase of the cycle for which we have chosen the last year of 2016 (see Fig. 7), it is more than visible that all of the major economies are in retreat or that they have already completed a massive movement of retreat by applying, for a larger or a lesser degree the deflationary tactic of internal devaluation. Most visible are France and Germany, but also Russia due mainly to the devaluation of the rouble on the back of the massive fall in the price of oil, in itself just another manifestation of the global economic malaise that persists years after the 2008–2009 acute phase of the depression. Due to the massive retrenchment practiced by Germany, the hard internal devaluation of Greece looks like a paltry show. The strangest case emerging however is that of Spain which again for all of the havoc it went through since the collapse of its housing bubble in late 2008 and 2009 still has not improved its position, i.e.: it does not seem to gain in competitiveness in spite of the

The normalized weighted index (2006 values – "the expansion phase")

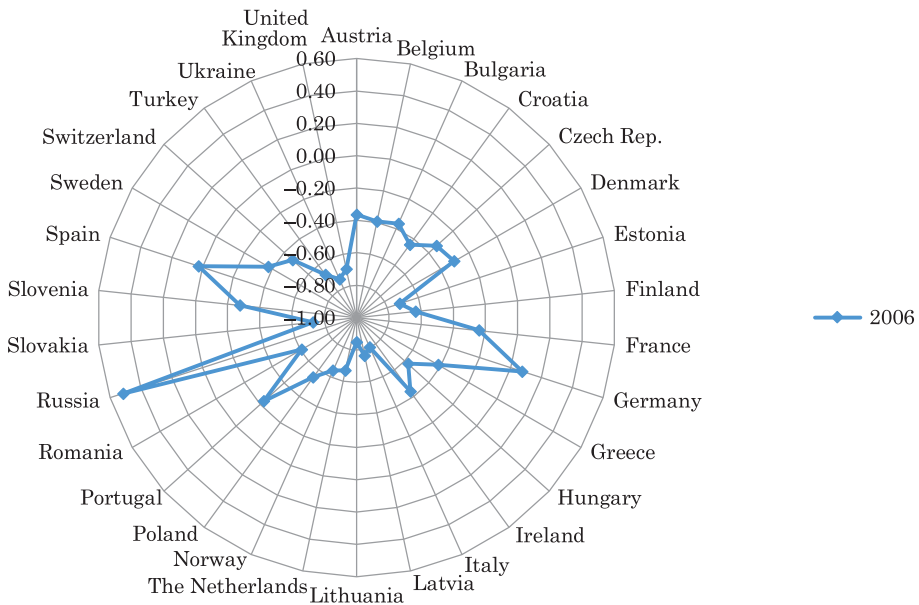


Fig. 6. The "Expansion Phase"

Source: Own source based on EIU data (2006–2016).

The normalized weighted values (2016 – "the collapse phase")

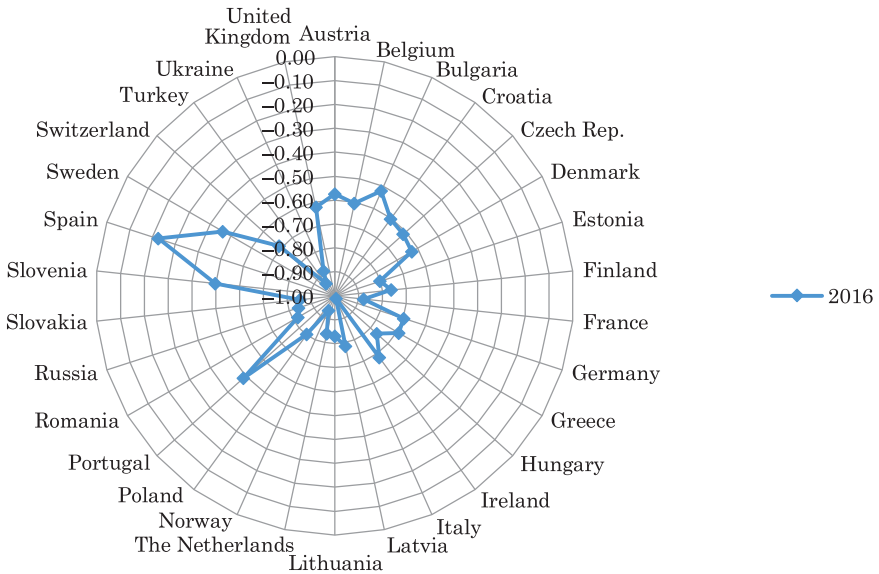


Fig. 7. The "Collapse Phase"

Source: Own source based on EIU data.

harsh internal devaluation measures. As for Romania and Poland, the two majors of the region remain stuck into their position close to the core of the constructed star.

The conclusion is simple: they maintain their position as low price suppliers. No matter how things fare and how the other economies swing towards the outer or the inner rim of the constructed star describing either a centrifuge (expansion phase of the cycle) or a centripetal (the collapse phase of the cycle) move, the two economies (RO&PL) and with them also other economies of Central Europe retain their places within the ensemble. This in other words means that no matter what the movement described by the cycle is, they continue to remain low price suppliers of the major economies. Accordingly and this brings us truly to the END: they do not change their RELATIVE POSITION!

## Conclusion

Our discussion has been focused on three sets of numbers. The first set has been the absolute one. By this set, which is the reflection of the immediate reality in which people live, the same people were more than right when in the euphoria of the 1990s and early 2000s opted for full accession into the EU. And this went in spite of the utter incapacity of their economies to cope with the competitive pressures inside the integrated economic ensemble, because a progress which is undeniable has been made. The other two sets of numbers, i.e.: the relative numbers as well as the ratios on which we have extensively poured over throughout the paper show the same reality but within a context. By this measure all progress looks not only insufficient but also not significant. Therefore the righteous anger of the people, and not only in the case of countries in the Central and Eastern part of the integrated ensemble, is supported as they rile against the current state of affairs! Solving this is not going to be a simple thing. However, as democracy is at the core of the European Union we can only conclude that: THE PEOPLE ARE ALWAYS RIGHT!

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## **ANALYSIS OF TOTAL, DIRECT AND INDIRECT COST OUTLIERS IN A POLISH SPECIALIST HOSPITAL**

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**Key words:** direct costs, indirect costs, outliers, hospital management, length of stay.

### **Abstract**

The purpose of this study is to analyze the factors facilitating the identification of the three categories of cost outliers. They are known as total cost outliers (TCO), direct cost outliers (DCO), and indirect cost outliers (ICO). 4,570 patients have been analyzed. To evaluate the factors that influence the patient being a cost outlier in a hospital; age, length of stay, gender, type of admission, reason for discharge, and type of department were considered. Multivariable logistic regression was used in the study. In our research TCO comprised 9% of the study sample. The percentage of DCO was slightly higher (10%) and ICO was slightly lower (8%). Total cost outliers accounted for almost 37% of total hospital costs, 40% of direct costs, and 34% of indirect costs. The direct cost outliers accounted for 44.39% of direct costs, and indirect cost outliers accounted for 34.91% of indirect costs. It was discovered that, in terms of gender, men are positively correlated with higher cost utilization. The risk of being a cost outlier increases risk in terms of death and referral for further treatment. The type of admission factor can only be a predictor of being an ICO. The risk of a patient being a length of stay outlier increases far more for the ICO (more than 580 times) than in the case of a DCO (3.81 times) or a TCO (13.79 times). The analysis suggests that not only TCO, but also DCO and ICO, should have high priority for hospital managers concerned with variations in the costs of care.

**ANALIZA BEZPOŚREDNICH, POŚREDNICH I CAŁKOWITYCH KOSZTÓW LECZENIA  
PACJENTÓW SZCZEGÓLNIIE DROGICH W SZPITALU SPECJALISTYCZNYM  
W POLSCE**

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Słowa kluczowe: koszty bezpośrednie, koszty pośrednie, pacjenci o szczególnie wysokich kosztach leczenia, zarządzanie szpitalem, czas hospitalizacji.

**A b s t r a k t**

Celem badań była identyfikacja czynników powodujących, że koszty bezpośrednie, pośrednie i całkowite leczenia pacjentów są szczególnie wysokie. W toku badań zidentyfikowano pacjentów o skrajnie wysokich kosztach leczenia (TCO), pacjentów o skrajnie wysokich kosztach bezpośrednich leczenia (DCO) oraz pacjentów o skrajnie wysokich kosztach pośrednich leczenia (ICO). Przeanalizowano koszty leczenia 4570 pacjentów. Czynniki kosztotwórcze leczenia wyodrębnionych grup pacjentów zidentyfikowano spośród następujących zmiennych: wiek, czas hospitalizacji, płeć, tryb przyjęcia do szpitala, tryb wypisu ze szpitala, rodzaj oddziału. W badaniu posłużono się wieloczynnikową analizą regresji logistycznej. Pacjenci o szczególnie wysokich całkowitych kosztach leczenia stanowili 9% badanej populacji. Odsetek pacjentów o szczególnie wysokich bezpośrednich kosztach leczenia był nieznacznie wyższy (10%), a pacjentów o szczególnie wysokich pośrednich kosztach leczenia był nieznacznie niższy (8%). TCO odpowiadali za niemal 37% kosztów całkowitych, 40% kosztów bezpośrednich, i 34% kosztów pośrednich. DCO odpowiadali za niemal 45% kosztów bezpośrednich, natomiast ICO za 35% kosztów pośrednich. Badania wykazały, że koszty hospitalizacji mężczyzn są istotnie statystycznie wyższe. Ryzyko, że koszty leczenia pacjentów będą szczególnie wysokie, rośnie w przypadku pacjentów skierowanych do dalszego leczenia i tych, w przypadku których odnotowano zgon w toku leczenia. Tryb przyjęcia istotnie statystycznie jest związany z ICO. Ryzyko, że czas pobytu pacjenta będzie szczególnie długi, znacząco rośnie w przypadku ICO (ponad 580 razy), natomiast w znacznie mniejszym stopniu w przypadku DCO (3.81 razy) oraz TCO (13.79 razy). Przeprowadzone badania wskazują, że w kontekście ponoszonych kosztów w szpitalu na uwagę menedżerów zasługują nie tylko pacjenci o skrajnie wysokich całkowitych kosztach leczenia, lecz także pacjenci o skrajnie wysokich bezpośrednich kosztach leczenia oraz pacjenci o skrajnie wysokich pośrednich kosztach leczenia.

**Introduction**

In recent years, there has been an increasing focus by administrators, payers and health service researchers on hospital costs as an important indicator of the efficiency of inpatient hospitalization. The year after year growth of financial problems in health care sector entities contributed to the



intensive search for the causes of (and solutions to) growing resource utilization (SZETELA et al. 2011, MAĆZYŃSKI 2011, *Zadłużenie samodzielnych publicznych zakładów...* 2004). One of the ways to do this is to improve the system of managing costs in the hospitals. To achieve this, hospitals attempt to develop a systematic approach for identifying the patients who are driving higher costs in their organizations. Then, they manage these outliers to reduce the cost of care. Outlier detection is concerned with discovering exceptional behaviors of certain patients. Revealing these behaviors is important, since it signifies that something out of the ordinary has happened and should deserve the attention of managers and doctors. Most of the previous studies have analyzed the factors that help to predict the future costs that are connected with the different causes of hospitalization. For example MAPELA et al. (2005) analyzed the methods of predicting the costs of managing patients with chronic obstructive pulmonary disease. HUANG et al. (2013) and UEMATSU et al. (2015) concentrated on evaluating the impact factors concerning the length of stay of the patients. Some of the researchers concentrated their studies on outliers as a group of patients worth special attention (SACKMAN, CITRIN 2014). FREITAS et al. (2012) and RUSSEL-WEISZ, HINDLE (2000) concentrated on the factors influencing high length of stay hospital outliers. Not many studies concentrated on the cost outliers. The probability of being a hospital cost outlier was analyzed in a different context: LOS, acuity of illness, risk of mortality, social status, age, gender, type of admission, destination after discharge, and Intensive Care Union (ICU) stay (DAHL et al. 2012, PIRSON et al. 2006a). However, many of the studies have concentrated on the total hospital costs, while only a few of them have focused on direct costs (SZNAJDER et al. 1998, SAHOTA et al. 2012, ALZAHIRANI 2013). No studies to date have explained cost categories determining the patient as being a cost outlier. The purpose of this study, therefore, is to analyze the factors facilitating the identification of the three categories of cost outliers: total, direct, and indirect cost outliers using available administrative data.

## Materials and Methods

The main source of data for this analysis was the administrative databases of the voivodeship hospital in Olsztyn. The voivodeship hospital in Olsztyn deals with diagnostics, therapy, care, specialist advice, education, prevention, and health promotion. Between January and June 2013, there were 5,367 patients admitted to the Departments of Cardiology, Laryngology, Ophtalmology, Nephrology, ICU, Gastroenterology, Orthopedics, Surgery, Neurosurgery, Gynecology, Endocrinology, Diabetology and Hematology.

All of the patients that were admitted to the hospital departments between January and June 2013 were reviewed, except newborns ( $N=462$ ). Some of the patients were excluded from the analysis due to missing data ( $n=335$ ). Therefore, the final sample population used in this study was 4,570 patients analyzed. Cost analysis was done retrospectively using the accountancy and statistical data from the hospital, as reported to the National Health Fund. The linkage between the two databases was carried out using Microsoft Access. Patient costs were tracked in three categories: direct costs (DC), such as drugs, medical procedures, and diagnostic tests. These were costs that were identified directly with the care of individual patients. Indirect costs (IC) were administration costs and costs assigned to the specific hospital department, but not associated with a particular patient. Examples of indirect costs include equipment, laundry, medical devices, and medical salaries. The indirect costs were aggregated and assigned to individual patients on an LOS basis. The sum of DC and IC was referred to as total costs (TC). The three categories of outliers were analyzed: direct costs outliers (DCO), indirect costs outliers (ICO), and total costs outliers (TCO).

To select the outliers, the interquartile method using the median and the interquartile distance was used. To select high outliers, the 75<sup>th</sup> percentile +1.5\* interquartile range was used. To identify the low outliers, the 25<sup>th</sup> percentile -1.5\* interquartile range was used. Because in all three cases the 25<sup>th</sup> percentile rule -1.5\* interquartile range detected a negative trim-point in further analysis, only high cost outliers were considered.

To evaluate the factors that influence the patient being a cost outlier; age, LOS, gender, type of admission, reason for discharge, and type of department were considered. Statistical analyses were carried out using StatSoft, Inc. (2011) STATISTICA, version 10. The analysis of contingency tables was executed with the Pearson's  $\chi^2$ -test and the Mann-Whitney test on continuous variables (LOS, age). Univariate analysis and multivariable logistic regression were used in the study.

## Results

Within the studied population, the mean patient age was 56.54 years; and men comprised 43% of the study sample. The mean and standard deviation of LOS were 5.39 days and 6.65 days, respectively. Most of the patients were admitted to the hospital with a planned admission (52,12%) and were discharged from the hospital within 4 days (58.99%). The main reason for the patients' discharge was completing the therapeutic process (66.11%). Most of the patients had been cured in the surgical departments (75.38%). The median

and standard deviation of the total cost of hospitalization, direct costs, and indirect costs were (€) 895.20 (458.91–1633.75); (€) 344.02 (130.30–883.20); (€) 380.44 (193.40–774.30), respectively (Tab. 1).

Table 1  
Characteristics of hospitalized patients between January and June 2013 ( $n=4,570$ )

Variables	Mean	s.d.
Age	56.54	18.21
LOS	5.39	6.65
Age group in years	<i>n</i>	%
18–30	470	10.28
31–50	1,011	22.12
51–70	1,775	38.84
71>	1,077	23.56
Gender	<i>n</i>	%
Female	2,591	56.69
Male	1,979	43.30
LOS group in days	<i>n</i>	%
1–2	1,663	36.39
3–4	1,033	22.60
5–7	916	20.04
8–10	462	10.11
11>	496	10.85
Admission	<i>n</i>	%
Planned	2,382	52.12
Unplanned	2,188	47.88
Reason for discharge	<i>n</i>	%
Completed therapeutic process	3,021	66.11
Directed to further treatment	1,443	31.58
Death	106	2.32
Department	<i>n</i>	%
Surgical	3,445	75.38
Nonsurgical	1,125	24.62
Costs (€)	median	ranges
Total Costs	895.20	458.91–1633.75
Direct Costs	344.02	130.30–883.20
Indirect Costs	380.44	193.40–774.30

Source: own work.

Within the studied population, 433 patients were identified as TCO, 346 patients as indirect outliers ICO, and 448 patients as DCO (Tab. 2).

The TCO comprised 9.47% of the study sample. The ICO and DCO comprised 7.57% and 9.80%, respectively. Some of the patients were associated with more than one group of outliers. One hundred and twenty seven patients were associated with TCO, ICO, and DCO, 106 patients were associated with TCO and DCO, and 199 with TCO and ICO. One hundred and twenty two

Table 2  
 Predictive factors for total cost outliers (TCO) and inliers (TCI), indirect cost outliers (ICO) and inliers (ICI) and direct cost outliers (DCO) and inliers (DCI) by univariate analysis

Predictive factors	TCO N=433	TCI N=4,137	ICO N=346	ICI N=4,224	DCO N=448	DCI N=4,122
Age (years) mean (s.d.)	59.47 (14.67)	56.23 (18.51)	58.33 (17.31)	56.39 (18.27)	60.04 (13.82)	56.16 (18.58)
Age <i>n</i> (%)						
<56	158 (36)	1,873 (45)	136 (39)	1,895 (45)	159 (35)	1,872 (45)
>56	275 (64)	2,264 (55)	210 (61)	2,329 (55)	289 (65)	2,250 (55)
<i>p</i>	<0.001		=0,045		<0.001	
Gender <i>n</i> (%)						
Female	175 (40)	2,416 (58)	157 (45)	2,434 (58)	254 (37)	2,424 (59)
Male	258 (60)	1,721 (42)	189 (55)	1,790 (42)	181 (63)	1,698 (41)
<i>p</i>	<0.001		<0.001		<0.001	
LOS (years) mean (s.d.)	12.8 (14.5)	4.6 (4.5)	18.3 (15.6)	4.3 (3.6)	7.8 (7.6)	5.1 (6.5)
LOS <i>n</i> (%)						
<Mean	63 (15)	2,633 (64)	1 (0)	2,695 (63)	152 (34)	2,544 (62)
>Mean	370 (85)	1,504 (36)	345 (100)	1,529 (36)	296 (66)	1,578 (38)
<i>p</i>	<0.001		<0.001		<0.001	
Type of admission <i>n</i> (%)						
Planned	178 (41)	2,204 (53)	87 (25)	2,259 (54)	210 (47)	2,172 (53)
Unplanned	255 (59)	1,933 (47)	259 (75)	1,929 (46)	238 (53)	1,950 (47)
<i>p</i>	<0.001		<0.001		=0,0192	
Reason for discharge <i>n</i> (%)						
Completed therapeutic process	158 (36)	2,863 (69)	164 (47)	2,857 (68)	201 (46)	2,817 (68)
Directed to further treatment	254 (59)	1,189 (29)	167 (48)	1,276 (30)	222 (50)	1,221 (30)
Death	21 (5)	85 (2)	15 (4)	91 (2)	22 (5)	84 (2)
<i>p</i>	<0.001		<0.001		<0.001	
Department <i>n</i> (%)						
Surgical	402 (93)	3,043 (74)	277 (80)	3,168 (75)	433 (97)	3,012 (73)
Nonsurgical	31 (7)	1,094 (26)	69 (20)	1,056 (25)	15 (3)	1,110 (27)
<i>p</i>	<0.001		=0.003		<0.001	

Source: own work.

patients were assigned only to ICO and 113 patients only to DCO. Eight hundred forty eight patients (22% of the study sample) were associated with at least one of the outlier groups. TCO comprised almost 71% of all patients identified as outliers in all categories.

The profiles of TCO, DCO, and ICO seem to be similar. The average age of TCO was 59.47 (14.67), ICO was 58.33 (17.31), and DCO was 60.04 (13.82). The length of stay of TCO, ICO, and DCO was 12.8 (14.5), 18.3 (15.6), and 7.8 (7.6), respectively. The majority of all types of outliers were men. The length of stay of all of the ICO was higher than the mean for all of the analyzed patients. Seventy five percent of the ICO were admitted to the hospital as an unplanned

patient. In the case of the TCO and DCO, the percentage was 59% and 53%, respectively. Most of the TCO were directed to further treatment (59%). The percentage of the ICO and DCO that had finished the healing process or had been directed to further treatment was similar. The majority of all types of outliers were surgical patients.

The profile of TCO, DCO, and ICO differed from that of the respective inlier patients in a statistically significant manner (Tab. 2). The status of the cost outlier in contrast to inliers in all categories was associated with older age, unplanned admission, being directed to further treatment after discharge from hospital, and being a surgical patient.

The median total cost, direct costs, and indirect costs for TCO were (€) 4,779.08, (€) 2,758.49 and (€) 1,755.28, respectively. The median indirect costs for ICO was (€) 2,468.50 and was higher than the median overhead costs for TCO and DCO with (€) 713.22 and (€) 1,398.77, respectively (Tab. 3).

Table 3  
Median and range of total hospital costs, direct costs and indirect costs for total cost outliers (TCO) and inliers (TCI), overhead cost outliers (ICO) and inliers (ICI) and direct cost outliers (DCO) and inliers (DCI)

Costs (€) median [range]	TCO	TCI	ICO	ICI	DCO	DCI
Total costs	4,779.08 [3,944.89– 6,040.47]	809.90 [423.36– 1,346.16]	4,391.28 [2,918.86– 5,934.81]	828.75 [432.65– 1,394.00]	4,203.37 [3,305.93– 5,652.34]	805.74 [421.95– 1,335.20]
Direct costs	2,758.49 [2,046.40– 3,753.44]	290.02 [115.70– 687.84]	1,540.72 [607.65– 2,469.44]	308.50 [118.86– 772.45]	2,838.09 [2,346.26– 3,666.98]	287.20 [1,15.31– 671.51]
Indirect costs	1,755.28 [1,115.68– 3,075.25]	345.21 [180.47– 640.63]	2,468.50 [1,905.03– 3,429.3]	350.25 [181.36– 643.21]	1,069.73 [415.68– 1,755.28]	354.63 [181.36– 685.78]

Source: own work.

TCO accounted for almost 37% of total hospital costs, 40% of direct costs, and 34% of indirect costs. The DCO accounted for 44.39% of direct costs, while ICO accounted for 34.91% of indirect costs.

In multivariate analysis, we analyzed the impact of age, gender, LOS, type of admission, reason for discharging the patient, and type of department on being the TCO (Tab. 4), DCO (Tab. 5) and ICO (Tab. 6).

A significant influence of age, gender, LOS, reason for discharge, and type of department on being the cost outlier was discovered. The strength of the predictors varied in the different types of cost outliers. The gender, LOS, reason for discharge, and type of department were associated with TCO.

Table 4

Logistic regression model: estimated probability of a patient being a total cost outliers (TCO)

Variables	Adjusted OR	(IC*95%)	<i>p</i> -Value
Gender	Female	1	
Male	1.90	(1.51-2.40)	<0.001
LOS	<Mean	1	
>Mean	13.79	(10.35-18.37)	<0.001
Reason for discharge (%)	Completed therapeutic process	1	
Directed to further treatment	4.15	(3.27-5.27)	<0.001
Death	5.79	(3.21-10.45)	<0.001
Department	Nonsurgical	1	
Surgical	6.51	(4.4-9.62)	<0.001

Source: own work.

Table 5

Logistic regression model: estimated probability of a patient being a direct cost outliers (DCO)

Variables	Adjusted OR	(IC*95%)	<i>p</i> -Value
Age	<56	1	
>56	1.34	(1.07-1.67)	=0.002
Gender	Female	1	
Male	2.29	(1.84-2.85)	<0.001
LOS	<Mean	1	
>Mean	3.81	(3.07-4.72)	<0.001
Reason for discharge (%)	Completed therapeutic process	1	
Directed to further treatment	2.06	(1.66-2.56)	<0.001
Death	4.07	(2.32-7.15)	<0.001
Department	Nonsurgical	1	
Surgical	13.55	(7.99-22.98)	<0.001

Source: own work.

The probability of being a TCO increased more than 13 times for patients that stayed in the hospital longer than 5 days (mean of all the patients). Age was additionally associated with being a DCO, and the type of admission was associated with being an ICO. The probability of becoming a TCO and a DCO in surgical patients increased 6 and 13 times, respectively. LOS longer than 5 days increased the probability of becoming an ICO more than 580 times.

Table 6  
Logistic regression model: estimated probability of a patient being an indirect cost outliers (ICO)

Variables	Adjusted OR	(IC*95%)	p-Value
Gender			
Female	1		
Male	1.58	(1.24–2.03)	<0.001
LOS			
<Mean	1		
>Mean	582.71	(81.59–4161.70)	<0.001
Type of admission			
Planned	1		
Unplanned	1.69	(2.28–2.23)	<0.001
Reason for discharge (%)			
Completed therapeutic process	1		
Directed to further treatment	2.64	(2.03–3.40)	<0.001
Death	2.48	(1.32–4.65)	<0.001
Department			
Nonsurgical	1		
Surgical	1.74	(1.30–2.34)	<0.001

Source: own work.

The predictive ability of three regression models was determined. Figures 1-3 show ROC curves for them. The area under the curve was used to represent the accuracy of the predictions. The best AUC estimation was achieved for ICO equitation (AUC = 0,878). The AUC for TCO and DCO was 0.857 and 0.784, respectively.

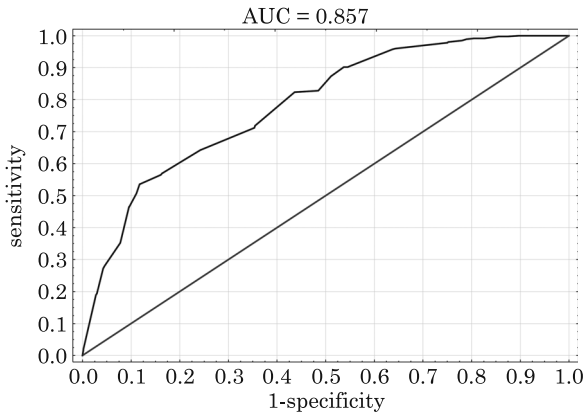


Fig. 1. ROC Curve for TCO

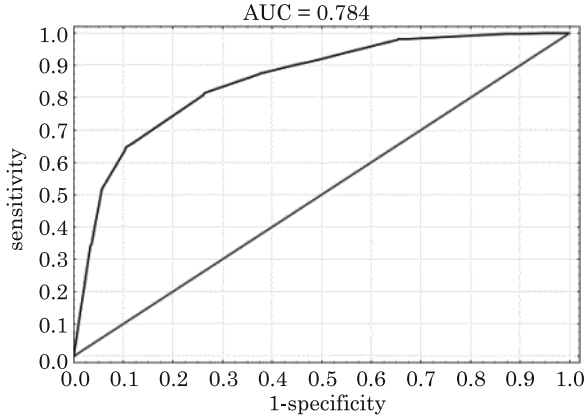


Fig. 2. ROC Curve for DCO

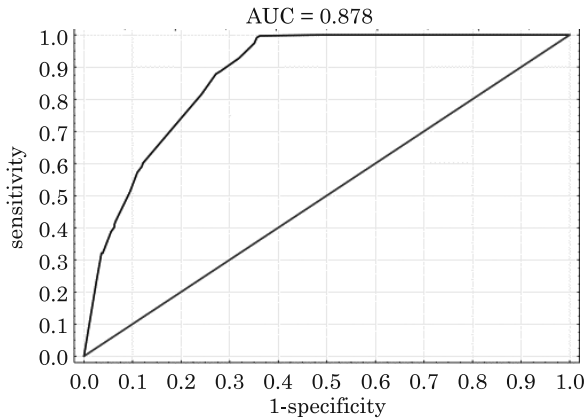


Fig. 3. ROC Curve for ICO

## Discussion

In our study, the cost outliers varied between 8%–10% of the study sample. In previous research, the frequency of cost outliers varied between 1.6% and 16% (PIRSON et al. 2006a, PIRSON et al. 2006b, COONEY et al. 2002, PRADOS et al. 2008). The differences in percentage of cost outliers can be associated with different statistical methods of selecting cost outliers (WEICHLER et al. 2013, YU-WEN et al. 2013), but also with the different definition of cost outliers. For example, PIRSON et al. (2006a) selected cost outliers by the 75<sup>th</sup> percentile  $\pm 1.5$  \*interquartile range, COONEY et al. (2003) defined cost outliers as patients



with hospital costs >1 standard deviation above the mean and CALVER et al. (2006) chose the top 5% of patients ranked from the highest to the lowest total inpatient costs.

Apart from differences in alternative approaches to assess outlying patients, there were also different approaches to measuring the patient costs identified. For example, PRADOS et al. (2008) analyzed only pharmacy costs and found that outlier patients represented only 1.6% of the studied population. On the other hand, COONEY et al. (2002) concentrated on gastric Bypass Surgery patients and reported a 16% incidence of cost outliers. In our study, we have separately analyzed the total, direct and indirect cost outliers and attempted to find the differences in factors facilitating the patients being cost outliers. In our research, TCO comprised 9% of the study sample. The percentage of DCO was slightly higher (10%) and ICO was slightly lower (8%). The TCO accounted for 33% of total hospital costs, which is consistent with the PIRSON et al. (2006b) study, reporting that cost outliers accounted for 22–30% of costs in three public general hospitals. The higher percentage of costs assigned to TCO in our study can be related to the different types of hospitals. We analyzed a public specialist hospital, which admits the most severe patients from the region.

The profile of TCO, DCO and ICO is similar in terms of gender, LOS, reason for discharge and type of the department. In accordance with the OMACHONU et al. (2004) study, we discovered that, in terms of gender, men are positively correlated with higher cost utilization. It could be related to the fact that women are more aware of health matters than men and take better care of themselves (DEAN 1989). In addition they visit physicians more often than men, resulting in earlier detection of health problems (COCKERHAM 1998).

We found that the LOS is an important measure of resource utilization, which is consistent with the HUANG et al. (2013) study. However, the risk of being a cost outlier increases far more for the ICO (more than 580 times) than in the case of the DCO (3.81 times) or the TCO (13.79 times). This is due to the widespread use of allocating indirect department costs to the patients on an LOS basis (RAULINAJTYS-GRZYBEK 2014).

We report an increase in the risk of being a cost outlier in terms of death or referring for further treatment. We presume that it is related to the severity of illness, complications and co-morbidities. The higher resource utilizations associated with death, severe medial co-morbidities and complications was also reported by COONEY et al. (2002), SESHMANI et al. (2004), and WU et al. (2012).

Our research revealed that the patients classified as TCO, DCO and ICO accounted for 41% of total costs. We found that the DCO (10% of the studied population) accounted for almost 45% of direct costs. Our finding that a small

percentage of patients accounted for a significant percentage of the costs is consistent with the PRADOS et al. (2009) findings, where one out of ten patients classified as an outlier was responsible for 60% of the total pharmacy expenditure recognized as direct costs. We presume that the risk of being a DCO can be associated with the higher age of the average DCO. This is consistent with our finding that age is not associated with being a TCO, but increases the risk of being a DCO (1.34 times). This is confirmed by the UEMASTSU et al. (2015) research, which claims that higher hospital costs for older people can be mostly explained by differences in patient comorbidities and complications.

Some of the studies highlighted that the type of admission has an influence on patient costs, but some of the studies didn't reveal it (BRIMHALL et al. 2003, MUNOZ et al. 1989). In our study, the type of admission can be a predictor of being an ICO. This is consistent with the FREITAS et al. (2012) research, which confirmed that emergency surgical admissions have significantly more length of stay outliers than planned surgical admissions.

## Conclusion

The study of cost outliers is important since it increases our understanding of hospital costs. In fact, a small percentage of cases represent an important proportion of total hospital costs. This study can contribute to the knowledge of managers about the nature of cost outliers and identify ways to prevent future instances. The approach described in this paper can be applied to improve the accuracy of identifying cost outliers. Outliers have an influence upon hospital costs and, therefore, are considered in some of the healthcare financing systems. To the best knowledge of the authors, the previous studies on hospital cost outliers concentrated only on TCO. However, the information about TCO doesn't give the full scenario concerning cost categories that contribute to being a cost outlier. Moreover, there can be patients with extraordinary costs in some categories that are not reported as TCO. Therefore, we identified two additional types of cost outliers: DCO and ICO. We chose to focus separately on DCO since direct costs reflect the true costs of care and are potentially amenable to future cost savings. Thus, detecting DCO can be especially valuable in the financing systems where high cost outliers that are not associated with LOS are separately paid or in systems where hospitals can incur financial penalties for cost outliers. That is why our analysis suggests that not only TCO, but also DCO and ICO, should have high priority for hospital managers concerned with variations in the cost of care.

The main limitation of this study is the small number of analyzed factors leading to a patient being a CO. We could not analyze medical factors such as

complications, due to the limitation of Polish hospital databases. However, similar analyses with additional explanatory factors derived from accessible hospital databases chosen by clinicians and managers working together could be used for CO identification. The study was carried out in only one hospital located in northeast Poland. To the best of our knowledge, this is the first study in the field within Poland. Thus, we chose to primarily analyze the patient characteristics before concentrating on the diagnoses related groups (DRG).

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