Volume 15 No. 1/2012

Comparative Economic Research

Central and Eastern Europe

WYDAWNICTWO
UNIWERSYTETU
ŁÓDZKIEGO

INSTITUTE OF ECONOMICS • UNIVERSITY OF ŁÓDŹ

Volume 15 ***No. 1/2012***

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ŁÓDŹ 2012

The online version available at: *www.versita.com*

Reference version: printed version

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Printed directly from camera-ready materials provided to the Łódź University Press

Wydawnictwo UniwersytetuŁódzkiego
90-131 Łódź, ul. Lindleya 8

Wydanie I. Nakład 80 egz. Ark. druk. 7,5
Zam. 5077/2012. Cena zł 20,– + VAT

ISSN 1508-2008

10.2478/v10103-012-0001-2

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Innovativeness of Poland's Economy - Conditions and Prospects for Development

Abstract

This paper considers the very important issue of innovativeness of Poland's economy with particular attention given to its innovation strategy. The major thesis of the paper argues that the growth of innovativeness of the Polish economy requires structural, institutional, and financial changes in the long run. The analysis is based on the set of indices reported by the European Commission, the Information Technology and Innovation Foundation, Washington, and UNU – MERIT Maastricht University.

The structure of the article is as follows: the introduction is followed by an assessment of the level of innovativeness of Poland's economy, explanation of the reasons of poor innovativeness, and then the conditions for innovation in Poland are outlined with particular emphasis on strategic aspects and the final part presents synthetic conclusions derived from the analysis.

1. Introduction

It is characteristic that modern economy tends to overestimate the importance of the factors influencing the economic growth and prosperity of society. The role of knowledge and innovation increases while the importance of traditional material factors decreases. The IT revolution has given rise to great transformations in the structure of the capitalist economy. These transformations consist in the fact that capitalism has moved from the industrial phase to the

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cognitive (knowledge-based) phase, i.e. the one in which knowledge and innovation are the main source of value. Recent experience of highly developed economies clearly shows that the achievement of competitive advantage based on knowledge and innovation is a guarantee of sustainable economic development and progress of civilization (The Global …, 2011, pp. 3-9).

At the present stage of development of Poland's economy the existing possibilities of increased rate of economic growth are depleting, and above all the reserves of cheap labour, the availability of cheap raw materials, abundant inflow of EU funds, etc. There are however new threats; the growing competitiveness of the economies of China, India, and Brazil, the collapse of public finances, and adverse changes in the natural environment, which are becoming increasingly expensive (the EU energy and climate package). Therefore one should seek new factors of competitive advantage and modernization of the economy, using mainly innovation and knowledge.

This article aims to assess the level of innovativeness of Poland's economy in comparison with other European Union countries and to answer the question concerning the possibility of development of innovation in the context of choice of appropriate strategy for strengthening the technological potential of the economy and creating conditions conducive to pro-innovative behaviour of business entities.

The structure of the article is as follows: the introduction is followed by an assessment of the level of innovativeness of Poland's economy, and then the conditions for innovation in Poland are outlined with particular emphasis on strategic aspects and the final part presents synthetic conclusions derived from the analysis.

2. Assessment of the innovativeness of Poland's economy in the light of statistical analysis

The level of innovativeness in the economy depends on many different factors, the important ones include: human resources, financial resources (budget, business and venture capital), entrepreneurship, the ability to build networks between companies, co-operation of R&D with industry, IT infrastructure, institutional solutions, etc. Therefore, it is a complicated task to make a competent and comprehensive assessment of the innovation economy. There is no universal measure that can be applied for this evaluation, it is necessary to use a set of indicators that reflect different dimensions of activity of innovative economy. The method suggested in the reports of the European Commission (European Innovation Scoreboard) has been a successful attempt to

measure innovation. The reports evaluate the innovative achievements of EU Member States based on the Summary Innovation Index - SII, calculated as a weighted arithmetic mean of 29 partial indicators for 27 countries of the European Union and Croatia, Turkey, Iceland, Norway, Switzerland, USA, and Japan[1]. The indicators used to assess the innovativeness represent both the expenditures on innovation and the results achieved in terms of innovation of economies of individual countries. The expenditures on innovation are described by measures associated with human resources. The measures reflect the level of public education, funding and support for innovative activity, as well as characterize the innovativeness of small and medium enterprises. On the other hand the results of innovative activity are described by such indicators as the number of patent applications submitted to the European Patent Office per one million inhabitants, the number of new community industrial designs per one million inhabitants, and indicators demonstrating economic effects of enterprises active in innovation (e.g. share of exports of medium-high and high-tech products in total exports, the share of sales of new or upgraded products in total companies' sales, etc.).

Interesting statistical analyses are included in two reports, demonstrating the level of innovation in the leading economies in the world: the first report was developed by the Information Technology and Innovation Foundation (ITIF), an American non-profit think tank specializing in the study of innovation and digital economy, the other prepared by H. Hollanders and A. van Cruysen from the University of Maastricht. The first report applied a wide range of indicators to assess the competitiveness of economies. The indicators directly or indirectly illustrate the level of innovation[2]. On the other hand, the Dutch researchers describe in the second report their analysis of potential creativity of the European society. The analysis uses a synthetic index (rate) of creativity (Hollanders & van Cruysen, 2009, pp. 20-22). It was assumed in the analysis that the level of innovation in the economy depends on the creative potential of the society. To assess synthetically the level of creativity of societies of the European Union a set of 30 indicators was used demonstrating the creative potential of the society, a climate conducive to its development and effects of this creativity in the form of achievements in the field of patenting inventions, innovative capacity of companies, activity in the field of industrial design, export of design services, etc. (Hollanders & van Cruysen, 2009, pp. 8-9). The

[1] The Summary Innovation Index has a range between 0 and 1, the closer the value to 1, the higher the level of that creativity.

[2] The ITIF report uses 16 indicators divided into 6 categories: human capital, innovative capacity, entrepreneurship, IT infrastructure, economic policy, and economic performance.

range of social creativity index is between 0 and 1, where 0 indicates minimum creativity and 1 indicates maximum creativity.

Statistical studies show that the economy of Poland is not among the giants in the field of innovation and ranks far in various rankings of innovation. The analysis of EIS 2009 shows that the value of many indices that illustrate the level of innovativeness of Poland's economy is below the average values for the countries of the European Union (25 among 29 indicators are lower than the EU-27 average). The information in Table 1 allows relating the values of these indices in Poland to average EU-27 values.

Table 1. Innovativeness of the Polish economy against the background of the European Union in 2009, according to the European Innovation Scoreboard 2010

Details	Poland	EU-27	Swede	Bulgar
I. Enablers				
Human resources				
S&E and SSH* graduates per 1,000 population aged 20-29 (first stage of tertiary education)	56.50	40.50	28.00	34.50
S&E and SSH doctorate graduates per 1,000 population aged 25-34 (second stage of tertiary education)	0.70	1.03	2.25	0.40
Population with tertiary education per 100 population aged 25-64	19.60	24.30	32.00	22.80
Participation in life-long education per 100 population aged 25-64	4.70	9.60	32.40	1.40
Youth education attainment level (aged 20-24)	91.30	78.50	87.90	83.70
Finance and support				
Public R&D expenditures (% of GDP)	0.410	0.670	0.970	0.330
Venture capital (% of GDP)	0.045	0.107	0.288	--
Private credit (% of GDP)	0.500	1.270	1.300	0.740
Broadband access by firms (% of firms)	59.00	81.00	89.00	62.00
II. Firm activities				
Firm investments				
R&D expenditures (% of GDP)	0.19	1.21	2.78	0.15
IT expenditures (% of GDP)	2.60	2.70	3.80	2.00
Non-R&D innovation expenditures (% of turnover)	1.03	1.03	0.66	0.79

Linkages & entrepreneurship				
SMEs innovating in-house (% of SMEs)	17.2	30.0	41.8	15.1
Innovative SMEs collaborating with others (% of SMEs)	9.3	9.5	16.6	3.8
Firm renewal (SME entries plus exits) (% of SMEs)	--	4.9	2.5	--
Public-private co-publications per million population	1.6	36.1	128.0	1.3
III. Intellectual property indicators				
EPO patents per million population	3.4	114.9	269.6	3.5
New EU trademarks per million population	41.9	122.4	175.3	36.2
New EU designs per million population	49.8	120.3	176.0	12.5
Technology Balance of Payments flows (% ofGDP)	0.35	1.00	1.	0.2
IV. Outputs				
Innovators				
SMEs introducing product or process innovations (% of SMEs)	20.40	33.70	40.70	17.80
SMEs introducing marketing or organizational innovations (% of SMEs	29.10	40.00	--	15.70
Resource efficiency innovators - reduced labour costs (% of firms) - reduced use of materials and energy(% of firms)	13.80 11.60	18.00 9.60	7.00 7.10	15.90 13.20
Economic effects				
Employment in medium-high & high-tech manufacturing (% of workforce)	5.50	6.59	6.20	5.13
Employment in knowledge-intensive services (% of workforce)	10.33	14.92	18.45	8.35
Medium and high-tech manufacturing exports (% of total exports)	51.1	47.4	51.9	24.2
Knowledge-intensive services exports (% of total services exports)	27.2	48.8	42.5	19.1
Sales of new-to-market or substantially improved products (% of turnover)	4.56	8.60	18.29	6.70
Sales of new-to-firm or substantially improved products (% of turnover)	5.55	6.28	5.10	3.59

* S&E (Science and Engineering) and SSH (Social. Sciences and Humanities)

Source: Based on European Innovation Scoreboard 2009. Comparative Analysis of Innovation Performance 2010, www.proinnoeurope.eu/metrics, pp. 59-62.

Poland was placed in a group of moderate innovators with SII index below Eu-27 average in the innovation scoreboard based on the Summary Innovation Index[3]. Table 2 shows the SII values in 2004–2009 and the ranking of EU economies in terms of innovation. According to the EIS 2009 method Poland ranked 23rd in 2004 and 2008 and 24th in 2005–2007. In 2009 the SII value ranged from 0.636 to 0.231, Sweden scored highest and Bulgaria the lowest on this indicator. Poland with 0.317 is below European Union average of 0.478.

Table 2. The European Union Summary innovation index (SII), in 2004-2009

No.	Country	2004	#	2005	#	2006	#	2007	#	2008	#	2009	#
1	Sweden	0.607	1	0.610	1	0.637	1	0.630	1	0.637	1	0.636	1
2	Finland	0.551	3	0.546	3	0.541	5	0.585	3	0.610	2	0.622	2
3	Germany	0.538	4	0.543	4	0.548	4	0.569	4	0.581	3	0.574	5
4	Denmark	0.566	2	0.572	2	0.605	2	0.602	2	0.570	4	0.596	3
5	Great Britain	0.522	5	0.534	5	0.550	3	0.556	5	0.547	5	0.575	4
6	Austria	0.480	8	0.494	7	0.509	8	0.523	7	0.534	6	0.536	6
7	Ireland	0.486	6	0.504	6	0.513	6	0.528	6	0.533	7	0.515	9
8	Luxembourg	0.486	7	0.486	8	0.513	7	0.497	9	0.524	8	0.525	7
9	Belgium	0.467	9	0.477	9	0.486	9	0.498	8	0.507	9	0.516	8
10	France	0.460	10	0.461	10	0.465	10	0.495	10	0.497	10	0.501	10
11	Holland	0.450	11	0.447	11	0.458	11	0.474	11	0.484	11	0.491	11
12	Cyprus	0.370	14	0.363	14	0.381	14	0.433	13	0.471	12	0.479	13
13	Estonia	0.413	12	0.409	12	0.421	12	0.443	12	0.454	13	0.481	12
14	Slovenia	0.388	13	0.393	13	0.412	13	0.429	14	0.446	14	0.466	14
15	Czech Rep.	0.344	15	0.346	15	0.368	15	0.392	15	0.404	15	0.415	15
16	Spain	0.329	16	0.344	16	0.352	16	0.359	17	0.366	16	0.377	17
17	Portugal	0.290	18	0.317	18	0.337	18	0.340	18	0.364	17	0.401	16
18	Greece	0.271	20	0.279	20	0.295	20	0.332	19	0.361	18	0.370	18
19	Italy	0.314	17	0.320	17	0.343	17	0.361	16	0.354	19	0.363	19
20	Malta	0.274	19	0.280	19	0.292	21	0.315	20	0.329	20	0.343	20
21	Hungary	0.266	21	0.273	23	0.287	23	0.305	21	0.316	21	0.328	22

[3] In 2009 the average EU-27 SII was 0.478.

22	Slovakia	0.257	24	0.273	22	0.298	19	0.299	22	0.314	22	0.331	21
23	**Poland**	**0.264**	**23**	**0.272**	**24**	**0.282**	**24**	**0.293**	**24**	**0.305**	**23**	**0.317**	**23**
24	Lithuania	0.264	22	0.273	21	0.287	22	0.294	23	0.294	24	0.313	24
25	Romania	0.209	25	0.205	25	0.223	25	0.249	25	0.277	25	0.294	25
26	Latvia	0.194	26	0.204	26	0.215	26	0.239	26	0.239	26	0.261	26
27	Bulgaria	0.172	27	0.174	27	0.178	27	0.206	27	0.221	27	0.231	27
	UE-27	0.429		0.431		0.447		0.466		0.475		0.478	

Source: Based on European Innovation Scoreboard 2009. Comparative Analysis of Innovation Performance, op. cit. p. 72.

In 2008, Poland ranked 34th out of 40 countries and regions in a study that benchmarks innovation and competitiveness, conducted by the Information Technology and Innovation Foundation (Table 2).

Table 3. Ranking of competitiveness and innovativeness of countries and regions in 2008

Ranking	Country	Points	Ranking	Country	Points
1	Singapore	73.4	21	Czech Republic	47.9
2	Sweden	71.0	22	Estonia	46.1
3	Luxembourg	66.2	23	Spain	43.7
4	Denmark	64.5	24	Hungary	42.5
5	South Korea.	64.2	25	Lithuania	40.8
6	USA	63.9	26	Italy	40.2
7	Finland	59.6	27	Portugal	38.7
8	Great Britain	59.2	28	Slovenia	37.6
9	Japan	59.0	29	Slovakia	37.0
10	NAFTA	58.6	30	UE–10[3)]	36.9
11	The Netherlands	58.4	31	Latvia	36.5
12	France	57.3	32	Malta	36.2
13	Ireland	56.4	33	China	36.0
14	Belgium	56.3	**34**	**Poland**	**35.4**
15	Germany	55.0	35	Russia	35.1
16	Canada	54.4	36	Cyprus	33.2
17	Austria	52.6	37	Greece	31.5

18	UE–15[1)]	52.5	38	Brazil	30.1
19	Austria	51.5	39	Mexico	26.0
20	UE–25[2)]	50.6	40	India	21.6
				average	36.5

[1)] UE–15 includes the „old" EU member states.

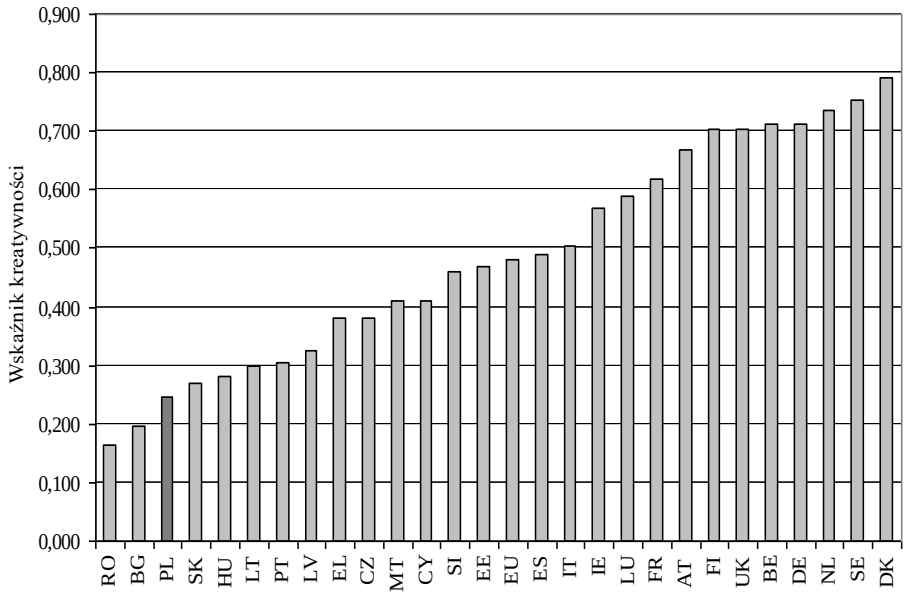
[2)] UE–10 includes the EU member states admitted to the Union in 2004.

[3)] UE–25 includes all member countries except Bulgaria and Romania.

Source: R. D. Atkinson S.M. Andes, Benchmarking EU and U.S. Innovation and Competitiveness, The Information Technology and Innovation Foundation, Washington 2009, p. 2.

Poland came equally far in the European social creativity scoreboard. The scoreboard, developed by H. Hollanders and A. van Cruysen, ranks Poland 25th out of 27 countries covered by the evaluation. Only Bulgaria and Romania are behind Poland. The creativity index for Poland was 0.230 in 2008, while the average value for the European Union was 0.410 (Fig. 1).

Figure 1. Overall creativity index in EU countries in 2008



Source: H. Hollanders, (2009, p. 22).

3. The reasons of poor innovativeness of Polish economy

While analysing the low degree of innovativeness of the Polish economy one should pay attention to the duality of understanding of innovativeness. The first viewpoint consists in treating innovativeness as an ability and motivation of economic entities to create and apply in practice new or updated products, technologies, and organizational and marketing solutions. The other viewpoint sees innovativeness as an ability of the economy to improve technology and organization through application of innovative technical, economic, and organizational solutions resulting in increase in total productivity of factors of production or in productivity of particular factors (Fiedor, 2009, p. 280).

The latter approach proves that the Polish economy is on the right track. Owing to the use of foreign technical innovation through direct foreign investments and import of foreign scientific and technical thought the Polish economy has noted a rapid increase in work performance and productivity of capital. Between 1993 and 1999 the performance measured in terms of GDP value (in real terms) per one employee rose on the average at a 5.7% yearly rate and between 2003 and 2007 at a rate of 5.4% (Heston, Summers & Aten, 2009). The high innovativeness of Polish economy examined through this viewpoint is a result of the restructuring process of enterprises. This process has contributed to increased competitiveness of Polish products in European markets.

A look at the reasons of low innovativeness of the Polish economy from the standpoint of its ability to create and manufacture new products, technologies and organizational solutions requires the analysis of conditions and factors which define internal mechanism of generating scientific and technological knowledge, and innovation. In this case, the questions of the volume and performance of domestic research and development potential, R&D financing system, the scope of public support in this field, the nature of cooperation between scientific institutions and industry, and tendency of enterprises to undertake their own research and development projects.

Understanding the reasons of inadequate innovativeness of the Polish economy through the first approach should result from the in-depth study but some initial comments can be made even at the outset.

Firstly, the weakness of the Polish system of innovation can be attributed to the lack of clear and internally coherent strategy for the development of science and technology. The strategy should designate the preferred by the State directions of the development of scientific research and fields of technology in which national research capacity and achievements of Polish inventors could be used. Such strategy could be a base for the development of programs for

enhancement of innovativeness and competitiveness of the economy (Dworak, 2011, pp. 213-214).

The previous approach to the innovation strategy of the Polish economy resembles a ritual involving development of various programs and reports. During the past several years, the Polish governments presented numerous documents on innovation policy, but none was dedicated to the strategy that would start breakthrough in the approach to solving problems of the innovation system in Poland. The following documents ranked by the increasing degree of detail, include a number of proposals which are often vague or controversial, and became the subject of analysis in the preparation of this paper: *Narodowy Program Foresight "Polska 2020"*, *Strategia Rozwoju Kraju 2007-2015*, *Krajowy Program Reform na lata 2008-2011 na rzecz realizacji Strategii Lizbońskiej*, *Kierunki zwiększania innowacyjności gospodarki na lata 2007-2013*, *Strategiczny Plan Rządzenia* (version of March 2008 r.), *Strategia rozwoju nauki w Polsce do 2015 roku* (version of March 2009), *Raport o Kapitale Intelektualnym Polski* (version of July 2008 r.), *Raport "Polska 2030. Wyzwania rozwojowe"*.

The said documents can hardly be regarded as a synthesis of a novel, holistic thinking about strengthening the innovation capacity and increased efficiency of its use. Some of these documents and programs, such as *"Polska 2030. Wyzwania rozwojowe"* developed by a team of strategic advisors to the Prime Minister, draw a great vision of Poland in 20 years. In 2030, Poland would be the sixth economy in Europe and the 16th in the world, and GDP per capita would reach the EU average. The words "innovation" or "innovativeness" appear 129 times in the report, the terms "knowledge based economy" and "intellectual capital" appear there often too. Out of over one hundred development recommendations exhibited are those of strategic importance in stimulating the innovative economy: the development of intellectual capital, the coupling of scientific research with the needs of the economy, increased investment in R&D up to 4% of GDP in 2030 (Polska 2030, …). The latter recommendations can be considered extremely optimistic if you remember the earlier announcement of successive governments that this index would be significantly increased (up 1.5% in 2010).

Secondly, the current low level of innovativeness of the Polish economy is also a result of a number of negative, politically motivated phenomena. The problem is that every change of government is followed by a change in long-term plans for reforming the system of science and technology. As a result, none of the programs designed to last 10-15 years has survived longer than a parliamentary term. The strategy prepared in 2004 by Minister M. Kleiber was withdrawn by the Minister of Science of the successive government. The

strategy of the new minister was criticized by the Council for Science and because after two years the government was replaced, an intensive work began on a new strategy for the reform.

The point is that without a permanent political will on part of the government the systemic changes in the Polish system of innovation have no chance of success. It follows from the observation of political life that short-term interests of the ruling parties and influential lobbies are the main obstacle to concentrated actions of the state aimed at the reforms strengthening the innovative potential of the economy. The ratio of outlays earmarked for military purposes (defence) to outlays earmarked for research and development demonstrates which fields of state activity benefit from preferences in distribution of financial resources. The result of this comparison shows what particular countries consider as their main threat. The ratio is approximately equal to one in the developed economies, and sometimes even lower than one. For example, in France, the share of military expenditures is 2.6% of GDP and the share of R&D expenditure 2.2% of GDP, 1.2% and 1.16% in Spain respectively, 2.7% and 3.1% in South Korea, 1.5% and 2.51% in Germany. In 2008, the share of military spending in Poland was 1.64% of GDP while the share of R&D expenditure was 0.61 % of GDP (Statistical … 2009, p. 432). Even in the United States, a country that allocates huge amounts for armaments the ratio is 1.45 while it is 2.72 in Poland[4].

Thirdly, there is no coordination between relevant ministries which should collaborate in the construction of the development strategy for science and technology. Innovativeness of the economy is a problem of supra-sectoral nature. It makes no sense, therefore, to increase the budget for research, if you do not take into account the incentives for entrepreneurs to innovate. Innovation essentially reflects the cultural functioning of the state. Therefore, it should be a subject of an agreement between parties and sectors. Meanwhile, strategic thinking and coordination dissolve in various ministries. Formally, it is a responsibility of the Ministry of Economy but the Ministry of Science and Higher Education and Ministry of Regional Development also take certain regulatory projects.

Fourth, the fragile cooperation between R&D realm and enterprises is the Achilles heel of the Polish system of innovation. The latest report made by the Polish Agency for Enterprise Development (PARP) shows that only 6% of Polish companies cooperate with universities, while in Finland the proportion is five times higher.

[4] In 2008, the U.S. spent 4.06% of GDP on armaments and 2.8% of GDP on R&D.

The R&D institutions (universities, institutes, and laboratories) and enterprises as well as wrong regulations are to blame for this state of affairs. Poor cooperation between science and economy has led to a kind of "vicious circle" of impossibility in this field. On the one hand, companies complain that the innovative designs offered by the R&D realm do not meet their needs or are too expensive, on the other hand, researchers and inventors believe that entrepreneurs are not interested in innovation because their mentality is focused on the use of simple reserves.

Fifth, the low innovation of enterprises results from their structure in terms of volume (number of employees, turnover value, and total balance). The vast majority of Polish enterprises are micro- and small enterprises (99.1%). It is worth noting that the level of companies' innovativeness in the Polish industry is positively correlated with their size. Between 2007 and 2009 the share of innovative enterprises in the sector of industrial enterprises was (Działalność …, 2010, p. 11):

- 10.9% among small enterprises (10 to 49 employees)
- 30.1% among medium enterprises (50 to 249 employees)
- 59.0% among huge enterprises (over 250 employees).

During the period under consideration the overall share of innovative enterprises among all industrial enterprises accounted for 18.1% while for 27 countries of European Union it was 41.5% (Działalność …, 2010, p. 12).

Due to the high costs of technological innovation and a lack of funds (from internal and external sources) interest of micro- and small enterprises in this type innovation is negligible. These companies mainly implement marketing and organizational innovation. Medium-sized and large enterprises are mainly the carriers of technological innovation.

Sixthly, in the context of analysing the impact of the structure of Polish enterprises on the level of innovation in the economy it can be assumed that the causes of the weakness of the Polish system of innovation lie in the absence of strong, Polish capital groups that would be able to compete in the global market. The current stage of globalization is characterized by oligopolization of markets and technological race. Large companies base their expansion strategies on investments in R&D, allocating for this purpose about $ 5–10 million per annum (GE, Microsoft, Toyota, Sony, Siemens, etc.). In addition, the R&D sphere is supported by governments that generally finance basic research and development of research infrastructure. For comparison, the national expenditure on R&D (financed by the budget and companies) amounted to approximately PLN 9.1 billion and accounted for only 0.61% of GDP (Small …, 2011, p.293).

4. Conditions for development of innovativeness in Poland

In a modern world a system of knowledge-based economy, whose core is innovation, exceeds the boundaries of developed countries and its elements gradually grow into the structure of economies which catch-up the world forefront (India, China, Brazil, and Malaysia). Therefore, Poland faces a serious challenge of increasing innovation capacity. The success of this project depends on many different factors that affect not only the realm of economic policy, but also social and cultural conditions.

Firstly, to raise the level of innovativeness of Polish economy it is essential to develop and consistently implement the strategy of socio-economic development of the country based on the use of knowledge and innovation as the main driving forces behind this process. Without such strategy it will be impossible to build an internally coherent innovation policy which determines favoured by the state development directions of scientific research and conditions necessary to improve the level of innovation in the economy. All countries which in recent decades have made a great leap forward have created mechanisms and measures to foster the development of innovative economies. It is not easy is to construct a policy which should set realistic goals and conditions for implementation of these goals. The policy cannot be a discretionary one, nor can it substitute the market, but only correct its mechanisms.

Secondly, in order to develop innovativeness it is important to provide a stable macroeconomic environment which forms the background for the implementation of modernization programs. Clear rules for fiscal and monetary policy, as well as low and predictable inflation are a framework for operation of economic entities. In this context, of particular importance is the state of public finances which determines the possibilities of government participation in development projects, especially in areas such as education, R&D, support for innovation companies, or energy and transport infrastructure. Discipline and transparent rules on public spending are the foundation of solid economic growth.

Thirdly, the development of innovation requires a well-functioning institutional system. Availability of qualified human capital and high investment in R&D are important drivers of innovation processes but do not automatically guarantee either effective commercialization of new technologies or acceleration of GDP growth. What is necessary is an appropriate institutional order, which affects the use of technological potential of the economy and diffusion of innovation. Empirical studies confirm the existence of statistically significant positive relationship between the degree of development of knowledge-based

economy and the activity of government systemic actions in shaping the institutional order (Płowiec, 2010, p. 657).

Conditions of doing business, broadly understood, are a key element of institutional environment. Building a friendly institutional environment is mainly based on the introduction of regulations that facilitate the development of entrepreneurship and innovation. This implies the need to simplify complicated regulations which often do not catch up with technology changes, as well as lengthy administrative and judicial procedures. The government's deregulatory actions in Poland are made at random and at a slow pace. It took a long time to create the deregulatory Act and when it was finally adopted it was in a truncated version.

Fourthly, to create effective support system for innovation it is necessary to increase and appropriately allocate financial outlays for R&D and implementation, financed by the state budget and business. Changes in this area should involve not only significant increase in budget expenditures, but above all increase in business expenditure on R&D by facilitating access to capital.

The development of venture capital, private equity, and business angels is very important for financing business innovative projects. Previous involvement of these funds in the financing of innovative activity has been highly inadequate. The nature of important binding Acts (relating to public procurement and public-private partnership) is not sufficiently pro-innovative. Development of a system of public-private partnership in financing strategic technology offers opportunities to overcome barriers to capital, which discourage, particularly small and medium enterprises, to undertake innovation (Dworak, 2011, pp. 219-222).

Fifthly, for the effective functioning of the innovation system it is necessary to develop permanent relations and ways of knowledge transfer between R&D entities and the sphere of business. There is no effective system of cooperation between the two spheres in Poland. There is a kind of "vicious circle" impossibility in this area.

Building a system of relations between the institutions of R&D sphere and companies should be targeted on the development of projects involving:

- support for the flow of personnel between R&D institutions and economy (including internships of R&D personnel in enterprises and business employees at universities),
- development of cooperation within the clusters which increase the ability of economic entities to create, absorb, and diffuse innovation. Of particular importance in this process are technology clusters that group together research units of universities, innovative and service enterprises,

- conducting research funded with public funds in scientific and industrial consortia.

Sixthly, even the best macroeconomic financial and structural policy and institutional strengthening of competition and reduction of red tape will not be sufficient for the development of the Polish economy. It is necessary to improve continuously the quality of business management and systematically improve macroeconomic competitiveness. The lack of these skills cannot be substituted with good fiscal and monetary policy. Politics may only help in these areas, but it is really the ability of companies to effectively manage knowledge and introduce innovation that will determine the level of innovativeness of Polish economy.

There are still many simple reserves in many Polish enterprises involving increasing production efficiency without having to implement their own innovations; it is enough to copy well-proved methods. This situation will change soon, because the Polish economy opens to foreign markets and global economy. Therefore, companies will need innovation to survive and thrive. Meeting this challenge requires changes in business management model including:

a) the emphasis on the promotion of creative activities within the business development strategy,
b) building a business management model based on internal integration and cooperation, and openness to cooperation with environment,
c) creating an organizational culture focused on enriching the enterprise knowledge base and stimulating pro-innovation activities.

Seventh, a system of education with emphasis on developing creativity and collaboration skills, lifelong learning with wide range of possibilities to supplement knowledge, or even changing careers, and increasing the flexibility of shaping curricula and their internationalization are very important for the strategy of development of knowledge-based economy.

To effectively use human capital it is necessary to increase social capital understood as a set of informal values and ethical standards common to members of a specific community enabling them effective cooperation, substantive communication, and mutual trust. The indicators characterizing this capital in Poland are now among the lowest in the European Union. According to the "Diagnoza społeczna 2009" survey only 13.4% of Poles trust other people, while an average index of confidence in European Union is 32%.

5. Conclusion

Are there in Poland conditions conducive to the growth of innovation? Poland's infrastructure is underinvested, there are problems with maintaining correct macroeconomic proportion, and there are large areas of poverty. One can be sceptical while examining the current difficulties in the Polish economy and the nature of the economic policies of successive governments. The question then arises, whether one should simply follow the traditional prerequisites for economic development, mainly macroeconomic, and wait for innovation to develop itself as a result of market forces? It seems, however, that by accepting such an attitude, the economy will never be able to meet the challenges of modern economy. The economies without advantages that matter in the globalized economy are forced to perform slave, subcontracting roles in relation to world centres that actively use the most advanced science and technology. Fulfilling these roles brings little added value and results in increased competition based on low labour costs.

It is difficult to formulate a clear assessment of the opportunities of speeding up the process of laying the foundation of knowledge-based economy in Poland. On the one hand, the volume and dynamics of the Polish market for such goods as computer systems, computer equipment, internet services, medicines, medical equipment etc. undoubtedly speak for the optimistic forecast. This is an attractive market for companies that base their competitive advantage on knowledge. On the other hand, one should note that the domestic market of innovative products is supported largely by foreign companies which relatively rarely allocate in Poland the elements of value chain related to R&D and design.

The key issue is to give a significant priority to R&D outlays in economic policy, financed both from the state budget and by enterprises. It is generally accepted that the national expenditure on R&D lower than 1% in relation to GDP threatens in the long run to weaken the driving forces of economic development. To avoid such situation politicians and opinion-forming elites should make fundamental changes in their attitude towards the role of science and technology in the Polish economy. Poland needs a well-established awareness that the future prosperity depends largely on increased activity of innovative economy.

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Streszczenie

INNOWACYJNOŚĆ POLSKIEJ GOSPODARKI: WARUNKI I PERSPEKTYWY ROZWOJU

Celem artykułu jest dokonanie oceny poziomu innowacyjności polskiej gospodarki na tle innych krajów Unii Europejskiej i odpowiedź na pytanie dotyczące możliwości rozwoju innowacyjności w kontekście wyboru odpowiedniej strategii ukierunkowanej na wzmocnienie potencjału technologicznego gospodarki i stworzenie warunków sprzyjających proinnowacyjnym zrachowaniom przedsiębiorstw.

Struktura artykułu przedstawia się następująco: po wprowadzeniu dokonano oceny poziomu innowacyjności polskiej gospodarki, następnie zarysowano warunki rozwoju innowacyjności w Polsce ze szczególnym uwzględnieniem aspektów strategicznych, a w zakończeniu zawarto syntetyczne wnioski płynące przeprowadzonej analizy.

10.2478/v10103-012-0002-1

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Analysis of Knowledge-based Economy Development in Poland in the Light of Strategic Documents

Abstract

After the European Union summit in spring 2005, the member countries were obliged to implement the Lisbon Strategy on the national level and to prepare national strategies to fulfil its goals. Due to this, the goals and tasks of building knowledge-based economy were entered into the strategic documents and operational programs included in the National Strategic Reference Framework 2007-2013 (NSRF), prepared by successive governments after 2005. However, it needs to be mentioned that also scientific institutions (e.g. the Polish Academy of Sciences, PAN) introduced various strategic documents in which issues of knowledge-based economy and its role in the social and economic development of Poland were included. However, a study of a holistic knowledge-based economy was not made.

The aim of article is to present and assess the most important documents referring to the strategy of knowledge–based economy development in Poland.

1. Introduction

After Poland's accession to the European Union the Polish government was obliged to prepare and implement various economic strategies, especially the strategy to develop knowledge-based economy. After the European Union summit in spring 2005, the member countries were obliged to implement the

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Lisbon Strategy on the national level and to prepare national strategies to fulfil its goals. Due to this, the goals and tasks of building knowledge-based economy were entered into the strategic documents and operational programs included in the National Strategic Reference Framework 2007-2013 (NSRF), prepared by successive governments after 2005. However, it needs to be mentioned that also scientific institutions (e.g. the Polish Academy of Sciences, PAN) introduced various strategic documents in which issues of knowledge-based economy and its role in the social and economic development of Poland were included. However, a study of a holistic knowledge-based economy was not made.

2. Review of strategic documents

Among the documents and programs the ones that should be mentioned are:

- The National Development Strategy 2007-2015
- The National Strategic Reference Framework 2007-2013 (NSRF) and the programs functioning within it: Operational Programme Innovative Economy 2007-2013 (OP IE) and Operational Programme Human Capital 2007-2013 (OP HC)[1];
- The Science development strategy in Poland until 2015;
- The "Poland 2030: Development Challenges" report,
- The Foresight Programme prepared by the Polish Academy of Sciences.

"The National Development Strategy 2007-2015" (NDS) is the basic strategic document, which has the primary nature in comparison to other strategies and programmes that will be functioning in Poland in the next few years. In this strategy, building knowledge-based economy is one of the most important elements in the vision of Poland until 2015. The following statement included in this document serves as evidence for this assumption (*Strategia Rozwoju Kraju na lata 2007-2015 2007)*: "Poland has to develop knowledge-based economy and economy based on a broad use of information and communication technologies in all fields, including social services available for every citizen. The country will promote the development of intellectual capital..."

In the National Development Strategy, the development of economic innovation, increased employment, and quality of human capital were

[1] NSRF consists of operational programs which, apart from OP IE and OP HC, include 16 Regional Operational Programmes, OP Infrastructure and Environment, OP Development of Eastern Poland and OP Technical Assistance.

considered as priority directions of actions serving the social and economic development of the country. Table 1. shows the indexes illustrating innovation development and employment growth between 2007 and 2015.

Table 1. Selected indexes of Poland's development strategy in the years 2007-2015

Goals and priorities of the National Development Strategy	**Indexes**	**EU-25**	**Poland**		
		Value of the index in the base year (2005)		**Assumed value of the index**	
				2010	**2015**
Goal	Average annual GDP growth rate (%) GDP per capita according to PPS (EU-25 = 100)	1.7 (2001-05) 100	3.0 (2001-05) 50	5.1 (2006-10) 58	5.2 (2011-15) 66
Priority Growth of competiveness and innovation of the economy	Total expenditures on R&D (% of GDP)	1.9 (2004)	0.56 (2004)	1.5	2.0
	Business involvement in R&D expenditure (%)	54.3 (2003)	22.6 (2004)	30	40
	The share of high and medium-high technology in industrial production sold (%)	-	30.1 (2004)	35	40
	Export of goods per 1 resident (thousands EUR)	6.5 (2004)	1.9	3.5	4.9
	Work efficiency per 1 employee (EU-25 = 100)	100	62.7	70	80
	Inflow of direct foreign investments (USD billion, according to the Polish National Bank, NBP)	x	9.6	10.0	10.0
	Number of patents granted to Polish residents (per 1 million residents)	134.5 (2001)	20 (2004)	40	65
	IT and telecommunication expenditure in % of GDP	6.4 (2004)	7.2 (2004)	8.0	8.5
	Number of broadband connections in relation to number of population (%)	10.6	1.9	10	25
Priority Employment growth and improvement of its quality	Employment index: (%) - people aged 15-64 - women aged 15-64 - people aged 55-64 - people with disabilities	63.8 56.3 42.5 .	52.8 46.8 27.2 13.1 (2004)	57.0 51.0 31.0 18	62.0 53.0 37.0 25

	People with secondary education in the population aged 15-64 (without vocational technical education) in %	.	35.2	38.0	41.0
	Graduates of first stage of tertiary education in the population aged 15-64 (%)	.	13.9	15.0	18.0
	Graduates in mathematics, natural sciences, and engineering (% of total university graduates)	24	15 (2004)	20	25
	Learning and gaining further education aged 25-64	11.0	5.5	7	10

Source: *Strategia Rozwoju Kraju na lata 2007-2015*, Ministry of Regional Development, Warsaw 2007, p. 76.

Directions of activities set in the 2007-2015 National Development Strategy are consistent with the assumptions and objectives of the Lisbon Strategy to the extent of the possibilities of the economy catching up the leaders of the European Union. It is assumed that the average GDP growth in Poland between 2007 and 2015 will amount to slightly more than 5%, which will set the GDP per capita in 2015 according to the purchasing power at 66% of the average in the European Union (in 2005 the index was 50%).

The first priority adopted in the National Development Strategy is to increase the competitiveness and innovation of the economy, yet a significant improvement in this area should not be expected, as appears from the analysis of indexes included in table 5.1. Although an almost fourfold increase in the share of R&D expenditure in GDP was assumed, from 0.56% to 2% in 2015, yet this index will be still lower than the (3%) target set in the Lisbon Strategy. Moreover, in 2015, the involvement of business (40%) in this expenditure will be lower, than the (54.3%) EU-25 baseline in 2005.It is also assumed that the share of high and medium-high technology in industrial output will increase up to 22.6% in 2005, to 30% in 2010, and to 40% in 2015. The number of patents granted to the Polish residents will also increase; in 2015 there will be 65 patents per 1 million of residents which represents an increase of 45 patents in comparison to the year 2004. It is worth mentioning that this increase will only slightly improve the position of Poland in this field, given the fact that the average index for the EU-25 was 134.5 in 2001.

In the context of the above-mentioned indicators, the target indicators concerning information technology and broadband connections look relatively promising. A high level of expenditure on information and communication

technologies in relation to GDP was assumed: an increase from 7.2% in 2004 to 8.5% in 2015, with the average level in EU-25 countries at 6.4% in 2004. In the case of the number of broadband connections in relation to population, a surge was assumed in this index, from 1.9% in 2005 to 25% in 2015; while for the EU-25 this indicator was 10.6% in 2005.

The assumptions concerning employment growth and improvement of the quality of human capital defined in the strategy vary considerably. The employment rate in Poland for people of working age in the initial year was lower than the EU-25 average by 11 percentage points, for older people (aged 55-64) it was lower by more than 15 percentage points and the assumed employment rate in 2015 will amount to 62% and will be lower than the EU-25 average rate from 10 years ago (63.8%).

In terms of improving the quality of human capital, a moderate, with one exception, growth of indicators illustrating the level of education was assumed. The share of people with secondary education in the population aged 15-64 will increase from 35.2% in 2005 to 41% in 2015, and the share of university graduates in the population aged 15-64 will increase from 13.9% to 18%. The percentage of people aged 25-64 who are gaining further education will almost double, from 5.5% in 2005 to 10% in 2015.

To summarize the previous discussion devoted to the 2007-2015 NDS, it should be noted that the assumptions concerning innovation in the economy and employment adopted in this document do not guarantee a breakthrough in building knowledge-based economy in Poland. This statement can be justified with the following:

- the implementation of the NDS assumptions on the share of R&D expenditures in GDP casts doubt on the possibility of achieving a rate of 2% of GDP in 2015; in 2008 this indicator amounted to 0.61% (*Nauka i technika w Polsce w 2008 roku*, 2010, p. 39*)*;
- the increase in the share of high and medium-high technology in industrial output to 40% in 2015 will not improve significantly the position of Poland's economy on the international markets in the field of modern technologies;
- the slight increase in employment rates among people of working age will not cause a breakthrough in the management of labour resources and may adversely affect the acceleration of economic growth.

The weaknesses of the 2007-2015 NDS mentioned above explain why the average GDP per capita in Poland will be a mere 66% of the EU-25 average in 2015.

"The National Strategic Reference Framework 2007-2013" (NSRF) is a document supporting economic growth and development of knowledge-based economy (Wisła 2007, p. 42). It provides a basis for granting Poland funds from European Union funds. The main goal of the NSRF is inspired by the assumptions of the Lisbon Strategy. The goal has been set as follows (*Narodowe Strategiczne Ramy Odniesienia 2007-2013*, 2007, p. 40): "The strategic goal of the National Strategic Reference Framework for Poland is to create conditions for better competitiveness of knowledge - and entrepreneurship - based economy ensuring employment growth and an increase in social, economic, and spatial cohesion."

The NSRF comprises two operational programmes, which include a list of priorities of activities and appropriate financial resources assigned to them, concerning two main elements of knowledge-based economy, i.e. innovation and human capital. These programmes are: the Operational Programme Innovative Economy (OP IE) and the Operational Programme Human Capital (OP HC).

The main goal of the Innovative Economy Operational Programme is "the development of the Polish economy on the basis of innovative enterprises" *(Program Operacyjny Innowacyjna Gospodarka 2007-2013*, 2007, p. 58). This goal was developed in the form of six detailed goals (Ibidem, s. 61):

- improved enterprise innovation,
- improved competiveness of Polish science,
- increased role of science in economic development,
- increased share of Polish innovative products on the international market,
- creation of more permanent and better working places,
- increased use of information and communication technologies in the economy.

Implementation of the objectives is performed within the activities grouped into nine the so-called priority axes: research and development of modern technologies, R&D infrastructure, capital for innovation, investment in innovative projects, diffusion of innovations, the Polish economy on the international market, information society - establishment of electronic administration, information society - increasing economic innovation and technical assistance. The list of those priorities and the sources of their financing are shown in table 2.

Table 2. OP IE 2007-2013 priorities and their financing (EUR million, current prices)

Priority axes		Total (million EUR)	Investment (million EUR)	
			EU	Poland
I.	Research and development of modern technology	1 299.3	1 104.4	194.9
II.	R&D infrastructure	1 299.3	1 104.4	194.9
III.	Capital for innovation	340.0	289.0	51.0
IV.	Investments in innovative undertakings	3 429.7	2 915.3	514.4
V.	Diffusion of innovation	399.0	339.1	59.9
VI.	Polish economy on the international market	410.6	349.0	61.6
VII.	Information society - establishment of electronic administration	788.2	670.0	118.2
VIII.	Information society - increase in the innovation of economy	1 415.9	1 203.5	212.4
IX.	Technical assistance	329.6	280.2	49.4
Total		9 711.6	8 254.9	1 456.7

Source: Program Operacyjny Innowacyjna Gospodarka 2007-2013, [Operational Programme Innovative Economy, 2007-2013], Ministry of Regional Development, Warsaw 2007, pp. 146-149.

The analysis of the data included in table 5.2 shows that the most of the resources were assigned for the most urgent activities which yield quick results i.e. for investments in innovative enterprises (35.3% of all resources). Second place in terms of outlays value falls to the combined outlays for strengthening the information society (22.6%), i.e. establishment of electronic administration and increased innovation in the economy. At the same time, it is worth noting that over 25% of the outlays were allocated for activities important to the development prospects of the knowledge-based economy, i.e. on scientific research and development of modern technologies, and on R&D infrastructure.

When assessing the OP IE it must be stressed that this document is part of a development line laid out in the Lisbon Strategy. The program offers activities that will boost economic growth, based not, as often before, on the factor of cheap labour, but on innovation and human capital (Piech 2009, p. 244). Moreover, the positive side of OP IE is the fact that this document provides the basis for granting EU funds to Poland and must therefore arouse interests of central and local governments in issues of economic innovation (Płowiec 2008, p.720).

The OP IE's shortcoming is that it does not take into account the best international experience in building an innovative economy. The OP IE does not point to any country model whose strategy, after the necessary corrections, could be applied in Poland (Finland, South Korea, etc. could serve as an example). Besides, although the OP IE refers to the concept of knowledge-based economy, does not result from a particular strategy for building knowledge-based economy in Poland.

The Operational Programme Human Capital (OP HC) is focused on the implementation of the chief purpose which is the increase in employment and social cohesion. In addition to this goal, the OP HC also includes specific objectives (*Program Operacyjny Kapitał Ludzki 2007-2013*, 2007, p. 238):

- to increase economic activity and ability to employ the unemployed and economically inactive;
- to reduce areas of social exclusion;
- to improve the adaptability skills of employees and enterprises to changes in the economy;
- to disseminate public education at every stage of education while increasing the quality of educational services and their stronger association with the needs of knowledge-based economy;
- to increase the capacity of public administration in developing policies and providing high quality services and strengthening partnership mechanisms;
- to increase territorial cohesion.

These above mentioned objectives are carried out within ten priorities, which are listed along with the distribution of the funds provided for their financing in table 3.

Table 3. The OP HC 2007-2013 priorities and their financing (EUR million, current prices)

Priority		Total (UE + Poland) (million EUR)	Public (million EUR)	
			Communities	Poland
		1	2	3
I.	Employment and social integration	506.2	430.3	75.9
II.	Development of human resources and the adaptation potential of enterprises and improving the health condition of working persons	778.0	661.3	116.2
III.	High quality of the educational system	1 006.2	855.3	150.9

IV.	Tertiary education and science	960.4	816.3	144.1
V.	Good governance	610.9	519.2	91.6
VI.	The labour market open to all	2 256.9	1 918.4	338.5
VII.	Promotion of social integration	1 552.9	1 320.0	232.9
VIII.	Regional human resources for the economy	1 588.5	1 350.2	238.3
IX.	Development of education and competence in the regions	1 703.4	1 447.9	255.5
X.	Technical assistance	456.8	388.3	68.5
Total		11 420.2	9 707.2	1 713.0

Source: Program Operacyjny Kapitał Ludzki 2007-2013, [Operational Programme Human Capital 2007-2013], Ministry of Regional Development, Warsaw, September 2007, p. 238.

Analysis of the priorities and financial resources allocated for their implementation leads to a few conclusions.

Firstly, the OP HC's drawback is the excess of priorities, which results in dispersal of funds. Relatively large sums have been allocated on immediate needs, which are: improvement of human capital management in the regions (28.8% of the funds were allocated for the VIII and IX priorities) and the development of the labour market open to all (priority V - 19.8%).

Secondly, only 17.2% was assigned for the long-term activities directly related to the development of innovation in the economy, i.e. the modernization of the education system, as well as tertiary education and science. It should be noted that EU funding for OP HC comes exclusively from the European Social Fund and therefore the co-financing by the EU is extremely high and reaches 85%.

Thirdly, the objectives of OP HC, called "human capital", include actions that are not strictly pro-development, but are of social nature (e.g., reduction of areas of social exclusion, increase of territorial cohesion) (Piech 2009, p. 239).

The "Strategy of development of science in Poland until 2015" is another document important for the development of structures of knowledge-based economy in Poland. It was prepared by the Ministry of Science and Higher Education (*Strategia Rozwoju Nauki w Polsce do 2015 roku*' 2008). The document, which takes into account the provisions of the "National Development Strategy 2007-2015", was adopted by the Council of Ministers in November 2006. The document is a framework and sets out general objectives and research priorities. Due to the time horizon, the document will be updated after four years of being in force.

Underlying the development of this document is the assumption that the sector of science is an important pillar of the knowledge-based economy and its development will contribute to reducing the civilization gap between Poland and the economically developed countries. The main objectives of the strategy of scientific development are (Ibidem, s. 21):

- to raise the level and effectiveness of science in Poland and increase its contribution to world science;
- to improve performance of scientific potential for education, culture and raise the civilization level of the country;
- to stimulate the growth of the Polish economy;
- to integrate better with the European Research Area.

Construction of goals is consistent with existing trends in the world in the field of science and innovation policy. There is a view in the European Union countries and the OECD that human capital, knowledge, and innovation are the decisive factors of economic growth.

The implementation of the ambitious objectives of the strategy of scientific development requires changes in financing the R&D. The Strategy assumes that these changes should include increased budgetary and business outlays on R&D and modified budget resource allocation. It is assumed that the share of total expenditure on R&D in GDP will increase from 0.56% in the base year 2006 to 2% in 2015. The increased involvement of business in R &D outlays which will increase from 32% of GDP in 2006 to 40% of GDP in 2015 (Ibidem, s. 31) will be of primary importance. Despite the expected increased involvement of business in R&D outlays it still remains relatively low compared with most European Union countries and the OECD. In the highly developed economies the business is the main source of R&D funding which accounts for 60-70% of the total expenditure on R&D. The average index is about 64% for the countries of the European Union and about 70% for Sweden and Finland (*European Innovation Scoreboard 2008*, 2009, p.52).

The increase in expenditures on R&D will be accompanied by change in the structure of spending, which will be allocated only for research projects settled in the form of competitions (primarily the priority research programs), infrastructure development, training of young staff and restructuring costs of research units. As a result, there should be a reverse in the unfavourable ratio between the size of subjective and objective financing (the competition) in favour of the latter.

One of the key solutions designed in the "Strategy of development of science in Poland until 2015" is a significant change in the system of organizing research funding from public funds. These solutions are reflected in the package

of five laws – "Building on Knowledge – The Reform of Science for the Development of Poland". The package consists of the following acts: the Act on principles of financing science (*Ustawa z 30 kwietnia 2010 r. o zasadach finansowania nauki,* item 615*),* The Law on the National Centre for Research and Development (*Ustawa z 30 kwietnia 2010 r. o Narodowym Centrum Badań i Rozwoju* item 616), The Law on the National Centre for Science (*Ustawa z 30 kwietnia 2010 r. o Narodowym Centrum Nauki,* item 617), the Act on research institutions, (*Ustawa z 30 kwietnia 2010 r. o instytucjach badawczych,*item 619*)* and the Act on the Polish Academy of Sciences (*Ustawa z 30 kwietnia 2010 r. o Polskiej Akademii Nauk,* item 618*).* These acts of law, which came into force on 1 October 2010, were complemented with the amended Law on Tertiary Education passed by the Government to the Parliament in September 2010 (*Ustawa z 18 marca 2011 r. o zmianie ustawy – Prawo o szkolnictwie wyższym, ustawy o stopniach naukowych oraz o stopniach i tytule w zakresie sztuki oraz o zmianie niektórych innych ustaw,*item 455). For the first time since 1989 these two related sectors; research and higher education have been almost simultaneously and comprehensively reformed.

The foremost aim of the Act on principles of financing science is to introduce a transparent system of research funding, more effective use of budgetary funds allocated for science and concentration of these funds in the units conducting scientific activities at the highest level. New regulations should result in increased share of funds for science in the budget, the funds which will be spent on a competitive basis, as well as in the comprehensive system for the quality assessment of activities of scientific institutions.

Pursuant to new regulations, the Minister of Science and Higher Education will no longer divide the funds for research. These two institutions will deal with this matter: The National Centre for Research and Development (NCRD) and the National Science Centre (NSC).

The NCRD is a state legal entity whose tasks involve:

- funding applied research,
- defining strategic research programs,
- encouraging entrepreneurs to fund applied research and development work.

Unlike the NCRD, the National Science Centre was established in order to finance basic research that is the original research works oriented to achieve the progress in knowledge, without the requirement of direct practical application of these research works. The NSC allocates grants from the budget in a competition mode. The tasks of the NSC involve also funding doctoral scholarships and post-doctoral internships.

The intention of establishing these institutions was also to cut red tape and de-politicize the process of allocation of public funds for R&D. The power to allocate grants for specific projects was moved from the ministerial level to the executive level supervised by the Minister of Science and Higher Education. While implementing the remaining tasks the Minister is supported by an appointed by him a consultative and advisory Scientific Policy Committee, consisting of over a dozen members, who will take over the existing powers of the Committee for Scientific and Technological Research Council, excluding the functions transferred to the NCRD and the NSC. The main tasks of the Committee are (*Ustawa z 30 kwietnia 2010 r. o zasadach finansowania nauki*, item 615):

- assisting the Minister with the development of strategy documents relating to the development of science, and scientific and innovative policies,
- giving opinions on the plans of action of the NCRD and the NSC,
- giving opinions on bills on the development of science and innovation,
- giving opinions on and evaluating applications for grants in major research infrastructure,
- assisting the Minister with the development of the draft budget for science and financial plan of science.

The Committee for Evaluation of Scientific Institutions is a second advisory body to the Minister of Science and Higher Education. The Committee will (*Ustawa z 30 kwietnia 2010 r. o zasadach finansowania nauki*, item 615):

- conduct, not less frequently than every 4 years, a comprehensive evaluation of the quality of scientific, research and development activity of scientific institutions;
- present to the Minister proposals for classification of specific scientific institution;
- indicate to the Minister the leading scientific, development, and research institutions which after the evaluation stand out in terms of quality of their research and development work in order to take their achievements into account when allocating funds for research potential in subsequent years;
- prepare the proposal of detailed parameters and criteria for evaluation of research institutions;
- examine reports of evaluation teams.

The main criteria for a comprehensive assessment of the quality of work of scientific and R&D institutions involve the effects of their work in relation to international standards (publications by employees of these institutions in

reputable scientific journals and monographs, development of new technologies, products, implementation, patents, etc.).

An important element in the reform of the R&D system is the restructuring of research and development institutions (RDIs). The reform aims to consolidate the institutions and to use their potential more efficiently to improve the innovation of Polish economy, knowledge and technology transfer. Pursuant to the Law on research institutions, all R&D institutions which conduct research, development, and implementation work and the National Research Institutes which perform tasks of public service, particularly important for the country and society will be transformed into research institutions subject to strict rules of control and systematic audit. Other RDIs will be put on a commercial basis. These proposals for change should lead to a smaller number of strong institutes capable of implementing large and complex R&D projects, the results of which will serve the economy. One of the latest government documents - reports, which presents a vision for the development of Poland, taking into account the importance of knowledge-based economy in the process, is the "Poland 2030. Development Challenges" report, developed by a team of Prime Minister's strategic advisors (*Polska 2030. Wyzwania rozwojowe)*

The authors of the report assume that to avoid the situation in which the development of the Polish economy would go adrift, necessary is a modern strategic project which will determine the motive forces (factors) of competitive advantages. The report assumed very ambitious predictions - until 2030 Poland will be the sixth economy in Europe and the sixteenth in the world, the most competitive in Central and Eastern Europe and its GDP per capita will reach the European Union average. From over a hundred developmental recommendations those of strategic importance for building a knowledge-based economy are prominent: increase in expenditures on R&D up to 4% of GDP in 2030, new technologies will account for up to 25% of GDP and high-tech products' share in exports will increase up to 40% (today 3.2%), Internet will reach hundred per cent penetration rate, and children will be provided with early education. The words "innovations" or "innovativeness" appear over 120 times in the report; the terms "knowledge-based economy" and "intellectual capital" also appear quite often. It should be noted that the report does not contain specific well-tried proposals.

Another document which incorporates the issues of knowledge-based economy and its role in socio-economic development of Poland is the National Foresight Programme "Poland 2020" prepared by the Polish Academy of Sciences in 2008. The program reflects the concept of knowledge-based economy, the key factor in the five scenarios of economic and social

development of Poland. The scope of the program includes three fields of investigation and twenty specific topics pertaining to the individual fields:

- sustainable development of Poland (quality of life, sources and utilization of energy resources, key environmental issues, technologies for environmental protection, natural resources, new materials and transport, the integration of environmental policy with industry policies, product policy and sustainable development of regions and areas);
- information and communication technologies (ICT), (access to information, ICT and the society, ICT and education, e-business, new media);
- security (economic security, intellectual security, social security, technical and technological security and development of civil society).

The National Foresight Programme "Poland 2020" aims at (*Narodowy Program Foresight „Polska 2020",* pp. 2,3):

- defining the development vision of the country until 2020,
- defining - through consensus with the main stakeholders - the priority directions of scientific research and development work, which, in the long run, will have an impact on the acceleration of socio-economic development,
- rational use of research in economic practice and preferential treatment for research in the allocation of budgetary resources,
- defining the importance of research for economic development, as well as the possibility of their absorption by the economy,
- making the principles of national science policy similar to the EU requirements,
- developing science and innovation policy towards knowledge-based economy,
- rationalizing expenditure incurred from public funds,
- defining the language of public debate and culture of thinking about the future, in order to coordinate joint activities for socio-economic development and improved quality of life in the country.

There are five possible scenarios in the Foresight Programme "Poland 2020":

- civilisation leap,
- hard adaptation,
- difficult modernisation,
- weakening development,
- collapse.

The civilization leap scenario assumes that the political elites together with the active society formulate a vision for the country's development, a key element of which are the modern science and technology sector. The leading idea of this scenario is to transform the Polish economy to a knowledge-based economy. It is anticipated that there will be a systematic increase in outlays for the development of strategic technology directions and Poland will skilfully combine endogenous growth factors with foreign investments and help from the European Union, which, after 2013, will focus on innovation support. As a result of these processes, the structure of the Polish economy will change permanently and Poland will develop its own industries and advanced technology services. Implementation of this scenario will increase the active participation of Poland in the processes of European and global integration and at the same time will consistently extend Poland's development potential (Ibidem, p. 4).

The hard adjustments scenario assumes that political elites will attempt to reform public institutions. However, the reforms are slowed down by the lack of social interest, and often by resistance to more radical changes. As a result, the inefficient public finance system will not able to meet all needs. State authorities will manage to carry out reforms in politically less sensitive sectors, such as the system of science, education and higher education. These reforms will bring high quality of human capital and research capacity which will favour the development of selected industries based on indigenous technologies. This development is not on a par with the Polish intellectual potential, which may result in emigration of many skilled employees. Despite the loss of development potential in the form of intellectual capital, Poland will slowly develop institutions and structures of the knowledge-based economy.

The difficult modernization scenario assumes that the world economy will not overcome the crisis in 2013. This situation will trigger a positive shock in Poland and will mobilize the political elites to formulate a strategy for modernization. The society will support the need for deep reforms and development policy. Despite the high cost of the crisis, the growing unemployment and slackening economic growth it will be possible to carry out important reforms and modernize the system of science and education. Manufacturing industry which sells its products mainly in the internal market does not need the latest technology; there prevails medium-tech manufacturing based on the achievements of native scientific and technical thought. The main driving force for economic development is the mobilization of endogenous factors through a program of profound reforms of public institutions, development of knowledge-based economy infrastructure and investment in intellectual capital.

The striving of the government to reform public institutions is a characteristic feature of the scenario of weakening development. Government's actions meet with public resistance. The overloaded system of public finance is no longer able to meet all needs. These deficiencies are initially alleviated by the inflow of foreign investments, efficient absorption of EU funds, and savings in expenditures on R&D and education. However, in subsequent years (2014-2020), the Polish economy will lose most of its competitiveness factors i.e. the reserves of cheap labour and high-skilled workers. This will be followed by the reduced inflow of EU funds and withdrawal of foreign capital. This scenario assumes a lack of understanding of the role of knowledge as a key factor for economic development, which in turn will inhibit the development of knowledge-based economy.

The collapse scenario assumes continuation of the international crisis, development of protectionist policy, and weakening of political, economic, and scientific cooperation. Polish political elites will be unable to develop a program of reforms and the public will not see the necessity to make reforms, being content with the existing effects of integration with the European Union. Due to the lack of reforms, science and education systems will deteriorate, the quality of intellectual capital will decrease and brain drain to countries with developed knowledge-based economies will enhance. The Polish economy loses most of the existing factors of competitiveness, including, in particular, the low labour costs. In addition, the inflow of EU funds earmarked for infrastructure development and modernization of rural areas is decreasing and foreign capital is gradually withdrawing from Poland and is mainly interested in exporting to Poland "dirty" industry investment, harmful to the environment. These unfavourable factors slacken the already weak economic and social development and deepen the civilization gap between Poland and the highly developed countries, the centre of a globalized economy.

In conclusion, it must be mentioned that the concept of foresight can be used in the development of far-reaching economic development strategy. This concept implies getting to know, forecasting, and active influence on the future. The foresight process and its results are useful primarily as a way to create and then implement country's science, technology, and innovation policy. Foresight enables the construction of an effective long-term working strategy for the government, enterprises, and research institutions. The foresight research covers both economy and technology in a holistic approach, as well as certain sectors of the economy, selected companies and regions (*Innowacje w strategii rozwoju organizacji w Unii Europejskiej*, 2009, p. 30) The results of foresight inform decision makers about new development trends, allow to determine development scenarios, help harmonize the activities of social partners (government,

academia, business and various sectors of the economy), and also help set criteria for the funding of science and technology (*Narodowy Program Foresight „Polska 2020*").

3. Summary

Despite numerous documents (programs, reports, and projects) which have been produced over the last several years and formulated the goals and objectives of the strategy for building knowledge-based economy and innovation of the Polish economy none of them provided a program with a clear and internally coherent strategy in this field or instruments for the implementation of this strategy. This demonstrates the lack of strategic thinking among the Polish ruling elites. Moreover, the negative practice of the Polish political life should be considered, with every change of government there is a change in the long-term development programs for the knowledge-based economy and innovation. As a result, many of the programs of strategic nature, calculated for a few or several years, have not survived longer than one parliamentary term.

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Streszczenie

ANALIZA ROZWOJU GOSPODARKI OPARTEJ NA WIEDZY W POLSCE W ŚWIETLE DOKUMENTÓW STRATEGICZNYCH

Przystąpienie Polski do Unii Europejskiej spowodowało nałożenie na rząd obowiązku opracowania i realizowania różnych strategii gospodarczych, w tym przede wszystkim strategii kształtowania gospodarki opartej na wiedzy. Po wiosennym szczycie Unii Europejskiej w 2005 r. kraje członkowskie zostały zobowiązane do wdrażania Strategii Lizbońskiej na poziomie narodowym i opracowywania narodowych strategii służących realizacji jej celów. Dzięki temu cele i zadania budowy gospodarki opartej na wiedzy zostały zapisane w dokumentach strategicznych i programach operacyjnych wchodzących w skład Narodowych Strategicznych Ram Odniesienia 2007-2013 (NSRO), przygotowanych przez kolejne rządy po 2005 roku. Niemniej trzeba zaznaczyć, że również instytucje naukowe (np. PAN) przedstawiły różne dokumenty strategiczne, w których uwzględniono zagadnienie gospodarki opartej na wiedzy i jej roli w rozwoju

społeczno-gospodarczym Polski. Nie powstało jednak opracowanie poświęcone całościowej strategii rozwoju GOW.

Celem artykułu jest prezentacja i ocena najważniejszych dokumentów dotyczących strategii rozwoju gospodarki opartej na wiedzy w Polsce, tj. Strategii Rozwoju Kraju 2007-2015 (SRK), Narodowych Strategicznych Ram Odniesienia 2007-2013 (NSRO) i funkcjonujących w ich obrębie programów: Programu Operacyjnego Innowacyjna Gospodarka 2007-2013 (POIG) i Programu Operacyjnego Kapitał Ludzki 2007-2013 (POKL), jak również Strategii rozwoju nauki w Polsce do 2015 roku, Raportu „Polska 2030. Wyzwania Rozwojowe" i Programu Foresight, przygotowanego przez PAN.

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10.2478/v10103-012-0003-0

WITOLD WILIŃSKI*

Beginning of the End of Cost Competitiveness in CEE Countries – Analysis of Dependence between Labor Costs and Internationalization of the Region

Abstract

The main purpose of this study is to verify whether previous low level of labor costs being one of competitive edges of CEE countries is a factor that may determine competitiveness of this region in the long run.

In the study a regression analysis has been carried out on the sample of all EU countries in order to verify the dependence between internationalization degree measured by OFDI stock per capita on labor costs in manufacturing sector and on GNP per capita. The results of the regression analysis clearly show the occurrence of such dependence. This means that gradual increase in labor costs in CEE countries will result in not only reduced inflow of investments from developed countries to this region but also transfer of production to more cost competitive countries.

In order to exemplify the above econometric model I carried out empirical analysis of the companies listed on the Warsaw Stock Exchange, identifying the companies for which efficiency-seeking is the main internationalization motive. The analysis of internationalization of 26 companies during the years 1990-2010 clearly shows that a significant part of investments is located outside the territory of Poland, in the countries with lower labor costs. This fact confirms that CEE countries will gradually become less and less attractive in terms of costs not only for MNEs from developed countries but also for the companies originating from transition economies.

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1. Introduction

Over the last twenty years, CEE countries have been an important place from the perspective of FDI inflow from highly developed states. Through the accession to the EU and adoption of an institutional system functioning in the Western Europe, most CEE countries carried out quick and effective market transformation. Inflow of know-how together with investment of MNEs from the EU and USA, systematic growth of GDP per capita as well as the possibility of competing in common European market since 2004 enabled accelerated internationalization of companies originating from this region.

Growth of GDP per capita and the resulting consistent growth of wealth of the societies lead to a permanent increase in costs of economic activities in this region, particularly in the countries which became EU members in 2004. One of the main purposes of this study is to verify whether the motives for internationalization of the Polish companies indicate that the CEE countries (in particular those which joined the EU in 2004) are gradually loosing their cost advantage over the Western Europe and are gradually moving production to the countries that are more competitive in terms of costs to improve their profitability.

The paper is organized as follows. In the next section, the applied research method is described. In section 2, a description of the most important internationalization theories is presented. Section 3 concentrates on macro-economic data of OFDI from CEEC. In section 4, discussion of the research results is presented.

2. Research methods

In the study, two research methods have been applied. Firstly, a regression analysis has been carried out on the sample of all EU countries in order to verify the dependence between internationalization degree measured by OFDI stock per capita on labor costs in manufacturing sector and on GNP per capita. Secondly, the companies for which efficiency-seeking is the motive for internationalization have been identified on the basis of empirical data of the companies listed on the Warsaw Stock Exchange. From this group, the companies which carried out down-market FDI locating their investment in the countries that are cost competitive compared to the Polish companies were selected.

Gradual increase in labor costs correlated positively with the level of internationalization, with simultaneous identification by means of empirical verification of the companies transferring their business activity from Poland to the countries with lower labor costs would be a sufficient evidence – that cost competitiveness gradually ceases to be the main advantage of locating investments in CEE countries, particularly in Poland.

3. Theory of firm internationalization

From the point of view of this study, the most important internationalization theories are those concerning transition economies. However, to make the picture complete, the evolution of the most important internationalization theories during the last fifty years is presented below.

Evolution of the research on internationalization was a function of changing economic reality and more and more clear business globalization. One should remember, however, that the globalization was and is carried out with various intensity. The early works on internationalization (e.g. Vernon 1966; Kindleberger 1969; Hymer 1976; Caves 1971; Buckley and Casson 1976) explained to a large extent the decisions concerning FDI market imperfections. The theory which describes the mechanisms of making foreign investment in the broadest way at the meso level is John H. Dunning's (1981; 1993; 1996) eclectic theory of international production, also known as the OLI Paradigm. The advantages defined in this theory: ownership advantage, location advantage and internationalization advantage have impact on the decisions of the companies relating to FDI. The eclectic theory is supplemented by investment development path, which shows the dependence between the economic development level and the investment position of the state (i.e. the relation between OFDI and IFDI). Goldstein (2009, p. 82) concluded that the IDP model had indeed proven very useful for evaluation of smaller European economies.

An important addition to the above theories is the Uppsala model created by Johnson and Vahlne (1977), who paid attention to cyclical nature of internationalization, which is carried out gradually – sequentially. This is the consequence of a risk arising from a limited knowledge of the foreign market. According to the sequential internationalization model, companies expand their activities first on the markets of culturally close neighboring countries, and then, using the knowledge gained, consider expansion into more distant markets, with larger cultural distance to their local market. Due to delayed expansion of MNEs from emerging countries, most literature concentrates on issues related to MNEs from highly developed states.

The first most important studies concerning internationalization of businesses from emerging economies are those carried out by Wells (1983) and Lall (1983), and the most recent studies are those carried out by: Ramamurti (2004), Meyer (2004), Jansson (2007), Sauvant (2008), Goldstein (2009) and Narula (2010). From the point of view of narrowing this issue to CEEC only, important publications are those by (Meyer 2001; Goldstein 2009; Meyer et al. 2009; Narula 2010, Wilinski 2011).

All previous publications relating to internationalization of companies from CEE can be divided into three main groups: Firstly, publications in which a group of states and businesses originating from them is analyzed (Svetlicic and Rojec 2003; Kalotay 2004**;** Rugraff 2010); secondly, those concentrating on one state only and on the businesses established in it (Jaklic and Svetlicic 2003; Rosati and Wilinski 2003; Kalotay 2010; Filippov 2010, Wilinski (2012); thirdly, the studies comparing BRIC states, in which strategies of internationalization of Russian companies are analyzed, compared to Brazilian, Indian and Chinese companies.

4. Background: OFDI from CEE countries

Internationalization of companies from CEE is a relatively new issue. The internationalization started at the beginning of 1990s only, after the economic and political system changed in this part of Europe. In most CEE countries the change of the political system forced the change of the economic system. Generally, during the years 1990-2010 the CEE countries could be treated both as transition economies and emerging markets. At present, the level of economic growth in some of them indicates, however, that they can already be considered highly developed countries; in many cases the market transformation has also been completed.

While analyzing internationalization of CEE enterprises, their specific macro- and microeconomic environment should be taken into consideration. First of all, (1) lack of significant experience in internationalization of business activities before 1990, (2) lack of sufficient capital accumulation by the companies, that could enable them to expand into foreign markets, (3) in case of private companies, short period of the business activities (less than 20 years), (4) small domestic market before the accession to the EU and, therefore, difficulties in quick achieving the effect of scale on the local domestic market. The aforementioned factors significantly determined the moment when the CEE companies initiated internationalization. The analysis of macroeconomic data of the CEE countries shows that OFDI stock from this region amounts to only 2%

of global OFDI stock (Unctad 2010). In his studies, Gorynia (2010) shows that net outward investment position (NOIP) in most of these countries is still negative, and the conclusion of his analysis of the Investment Development Path (IDP) is that the CEE states are still at stage 2.

Note, however, that post-communist countries are characterized by diversified economic growth and diversified degree of internationalization. Generally, they can be divided into 4 groups: (1) EU member states, (2) EU candidate states, (3) Russia and (4) former Soviet Union countries. The last group (4) consists of the countries with the lowest degree of internationalization, and in most cases with the lowest GDP per capita and the lowest degree of progress in economic reforms (e.g. Belarus, Kyrgyzstan).

Russia is classified into a separate category, mostly due to the internationalization model which is definitely different from the internationalization model of the EU member states and EU candidate states as well. It is also characteristic of Russia that it is the only post-communist country where OFDI stock is higher than IFDI stock. The specificity of the Russian internationalization model is caused by the following: firstly (1) the fact that in most cases the Russian companies investing abroad are the companies operating in fuel and power industry, (2) secondly, the fact that such companies operate in this industry in the domestic Russian market results in such companies having significant capital surplus and if they want to develop they have to invest both in the companies related to transmission infrastructure and in the companies of fuel and power industry in the neighboring countries. It is characteristic of the Russian internationalization model that GDP per capita in Russia is lower than average for the new EU member states, nevertheless Russia has been in recent years the only country where the overseas investments of local companies are higher than foreign investments in Russia.

In turn, two first groups, i.e. the states which have already become EU members and the states which are going to join this organization are undoubtedly similar. A thesis can be made that the countries such as Croatia will certainly follow the same way of internationalization as neighboring Slovenia being already the EU member.

The first group of the states, i.e. post-communist EU member states, consists in many cases, as I have already mentioned, of the states which are already completing their market transformation process and are, at the same time, emerging economies. However, this group is not uniform due to diversified levels of internationalization of their economies, economic growth level (GDP per capita) and domestic market size. The leaders of internationalization among new EU member states are Slovenia and Estonia which had small domestic market, which forced the companies interested in achieving the effect of scale to

expand relatively quickly into foreign market. In turn, the companies originating from Poland and operating in relatively large domestic market did not have sufficient motivation to expand quickly into external markets, therefore, in 1990s internationalization of the Polish companies was relatively low. Among new EU member states, we should also pay attention to two states that acceded the EU latest of all. There is no doubt that their internationalization is hindered by a low level of GDP per capita and a relatively large domestic market (larger, for example, than Slovenian and Estonian).

5. Results and discussion

According to the internationalization theory, GNP is one of important determinants of OFDI stock per capita. It is not, hoverer, the only variable having significant influence on OFDI per capita. I present below the regression analysis of dependence between OFDI per capita and two variables:

1. Productivity cost of man-hour in manufacturing sector;
2. GNP per capita.

To carry out the regression analysis I used data from 26 EU member states concerning:

1. Productivity costs of labor in industry, source: Eurostat,
2. GNP per capita published by World Bank,
3. OFDI from World Investment Report,

however, to make the data comparable, the statistics published in EUR are converted into USD at average annual exchange rate for a given year.

Single-equation regression model is defined as follows:

$$y_i = g\,(x_{i1}, x_{i2},\ldots, x_{ik)} + \varepsilon_i \; i = (1,2,\ldots..n)$$

where:
y_i – i value of dependent variable,
x_{ij} – i value of independent variable; j=1,2,...k,
ε_i - i rest (error) of the model (difference between estimated and empirical values of y_i),
n – number of observations,
k – number of explanatory variables.

In this case, the function is linear, therefore:

$$y_i = \alpha_0 + \alpha_1 x_{i1} + \alpha_2 x_{i2} + \alpha_k x_{ik} + \varepsilon_i$$

dependent only on two explanatory variables

$$y_i = \alpha_0 + \alpha_1 x_{i1} + \alpha_2 x_{i2}$$

I used the following independent (explanatory) variables in the regression equation :

- cost of labor in 26 EU countries in industry[1];
- GNP per capita in 26 EU countries;

and OFDI per capita as a dependent (being explained) variable and I obtained the following linear equation:

$$y_i = 1.312x_1 - 0.335\ x_2 - 0.684$$

For this linear equation, $R^2 = 0.73$ and adjusted $R^2 = 0.65$. Due to the fact that in this regression model there are two small samples with equal numbers, I compared absolute empirical value T-test with critical value of these statistics in order to verify whether explanatory variables are statistically relevant.

$$\text{For } x_{i1}\text{: T-test}_{emp} \left| 1.75 \right| > \text{T-test}_{crit}\ -1.71$$

$$\text{For } x_{i2}\text{: T-test}_{emp} \left| 0.18 \right| > \text{T-test}_{crit}\ -1.71$$

The result confirms that both explanatory variables applied in the model are statistically relevant. The results of calculations for the entire regression model are presented in table 1.

[1] Due to the specific nature of OFDI from Luxemburg I intentionally omitted statistics concerning that country. It is clear that a major part of investment, which is treated in international statistics as the investment originating from that country, actually originates from other countries which intentionally register their companies in Luxemburg.

Table 1. Regression analysis of OFDI per capita dereminants

		1 labour hour cost	GNP per capita
R-square	0,69		
Adj. R-square	0,66		
No. of obs.		26	26
α0	0	1,31	-0,34
Stand. dev.	-	0,47	0,49
tStat (emp.)*	-	1,75	0,18
tStat (theor.)**	-	-1,71	-1,71

* and ** 5%.

Source: own calculation.

The resulting value $R^2 = 0.73$ with confirmed statistical relevance of explanatory variables shows that OFDI per capita for EU member states is dependent in 73% on labor productivity cost increase and GNP per capita level increase. Increase in labor costs by 1 USD results in increase in OFDI per capita by 1.31 cents (with unchanged level of GNP per capita). This means that increased labor costs in industry result in, undoubtedly, a higher value of OFDI per capita and thus higher internationalization of the businesses. Therefore, we can state that this is the factor stimulating the degree of internationalization of the EU member states.

The analysis of the main motives for internationalization (assets seeking, resource seeking, market seeking and efficiency seeking) shows that the motive concerning productivity increase is most frequently related to locating production in the areas that are more competitive in terms of costs compared to the parent country. It is common knowledge that the companies motivated by market seeking search mainly for new markets, whereas those motivated by resource seeking concentrate on exploration of natural resources and the only fact that is of importance to them is whether there are natural resources in a given country rather than labor cost. In turn, assets seeking motives are related to searching for specific assets that may ensure long-term competitive edge to the investing company.

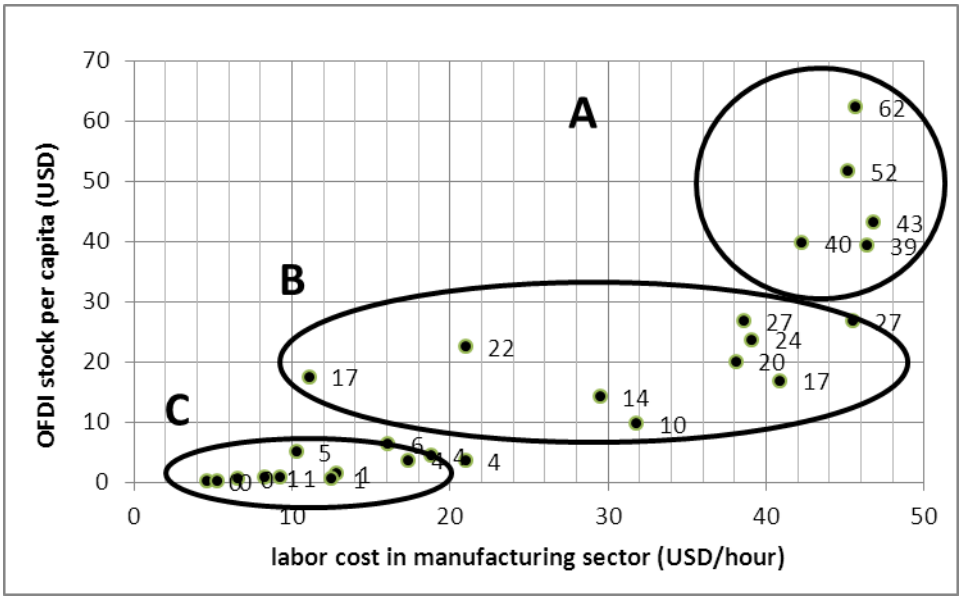
Therefore, we may attempt to make a thesis that in the case of efficiency seeking, the companies seek to improve their economic effectiveness not only

through locating the production in places where it can be more effective - in terms of the production scale, advancement in production technology, but also because of lower labor costs in the country where the investment project is carried out.

There is no doubt that in CEE countries, including Poland, a lot of investments were located after 1989 due to cost competitiveness of this region. The question whether this region is still competitive in terms of costs is not easy to answer. It is generally known that cost competition may take place in the short run, whereas in the long run the region should be able to find other competitive edges based on new technologies and low labor effort. This should have happened to the states which were competitive due to low production costs after their accession to the EU: Ireland, Spain, Portugal and Greece. Obviously, Ireland took advantage of competitive edges, apart from cost advantages; it is rather controversial whether the other three countries did the same.

Compared to other EU member states, the countries which acceded the EU after 2004 still remain cost competitive in relation to old member states. For example, according to Eurostat data (2010), average cost of man-hour in old EU member states amounted to 30.80 EUR in 2010, whereas in new EU member states such cost was four times lower and amounted to 7.64 EUR. Note that the difference between the state with the highest cost of man-hour and the state with the lowest cost is nearly 15 times.

Figure 1. Relation between OFDI stock per capita and labour cost in manufacturing sector in EU countries, 2009 (U.S. dollars)



Source: OFDI data from UNCTAD (2010), countries population and labor costs data from Eurostat (2009).

Such a significant difference shows that both most economically developed EU states and new member states are not homogenous in terms of production costs. In Romania and Bulgaria, the cost of man-hour is more than two times lower compared to average costs of all newly acceded EU member states. Obviously, such a large disproportion is now and will be in future a sufficient motivation for making decisions to transfer production not only from the Western Europe but also from the Central Europe to the countries with the most favorable rates paid to production workers.

The dependence between OFDI per capita and the cost of man-hour in manufacturing is presented in Figure 1. As it has been proved by means of regression analysis, OFDI level depends not only on GNP per capita but also on labor costs in a given country. Figure 1 shows quite clearly such dependence, we can note that the higher labor cost in a given country, the higher OFDI value. In the chart, the countries are divided into three clusters:

1. Cluster A
   OFDI per capita ≥ 39 USD
2. Cluster B
   10 USD ≤ OFDI per capita < 39 USD

3. Cluster C
   OFDI per capita < 10 USD

Cluster A groups the countries with the highest labor cost and relatively small domestic market at the same time: 4 small countries with number of population lower than 10 million, one with the population of 16.5 million. These are respectively: Belgium, Sweden, Denmark Ireland and the Netherlands. Therefore, the degree of internationalization of companies in this group is determined not only by very high labor costs but also by small domestic market where it is difficult to achieve a sufficient effect of scale or to be competitive on the European scale, which forces the companies to internationalize their business.

Cluster B is the most diversified group of countries, however with the dominating role of the largest EU economies: Germany, France, United Kingdom, Italy and Spain. France and the United Kingdom are the countries with the highest OFDI value in Cluster B. They significantly differ, however, from each other in respect of labor costs. In the United Kingdom, labor cost is only 62% of the costs in France. This can be explained by traditionally more liberal economy of the United Kingdom, which undoubtedly stimulates internationalization of businesses from this country. There are two untypical cases in this Cluster Cyprus and Hungary. Obviously, high level of Cyprian and Hungarian OFDI is not positively correlated with labor costs in these countries. In the first of them, it is a result of locating investments for legal and tax reasons by the companies which intend to minimize tax costs, whereas in Hungary OFDI means mainly the investments carried out by MNEs having their seats in Hungary and carrying out expansion in CEE region from that country. As I have already mentioned, other countries in this group are mainly the largest EU economies.: Germany, Italy and Spain and two smaller countries – Austria and Finland.

Cluster C groups mainly new EU member states admitted to the EU after 2004 and two older member states: Portugal and Greece. As we can see, opposed to the companies in Ireland, Greek and Portuguese companies have not used their membership in the EU to increase competitiveness of their companies and were likely to base on short-term cost advantage only. Perhaps one of the reasons for insignificant internationalization was the lack of institutional system stimulating the companies to expand into foreign markets. The leaders of internationalization in Cluster C are the countries with the smallest domestic market. In their cases, the situation is the same as in case of Cluster A; small domestic market with the highest labor costs among new member states (Slovenia, Malta, Estonia) forced the companies from these countries to start

their business activities in international markets earlier and quicker than the companies in the largest economy of CEE region, i.e. in Poland.

Figure 2. Source and destination of FDI

Source of FDI	Developed countries	CEE countries
Developed countries	North- North FDI	North-CEE FDI **(Down-market FDI)**
CEE coiuntries	CEE -North FDI **(Up - market FDI)**	CEE- CEE FDI **(Mostly down-market FDI)**

Source: Based on Ramamurti (2009, p. 6).

Ramamurti (2009) presented the source and destination of FDI between developed and developing countries in a very logical manner (see: Figure 2). The diagram of investment flow between developed and developing countries proposed by him can be adapted to CEE countries. As I have already pointed it out in the section concerning IB theory, in most cases the research in this field concerns inward FDI in emerging economies, although over the last 20 years a lot of articles concerning investment flows from developing countries, mainly from BRIC, have been published. In the case of CEE countries, we observe mostly down-market FDI, although the investments are up-market FDI type.

5.1. Down-market FDI from Warsaw Stock Exchange

Among all companies listed on the Warsaw Stock Exchange, 96 have their subsidiaries outside the territory of Poland. In this group, 26 are the companies for which efficiency seeking is the main motive for internationalization. Only 6 of them are controlled by foreign capital. Among the remaining companies, Polish private capital is dominating – only 3 companies out of the whole sample are controlled by the state treasury. As opposed to other groups of motives, due to high concentration of industrial companies, more than a half of the efficiency seeking companies are those established before the system transformation started.

This thesis is confirmed by the fact that a half of the companies listed on the Warsaw Stock Exchange, for which efficiency-seeking is the main motive for internationalization, are located in the countries with lower production costs compared to the same costs in Poland. i.e. in: Ukraine, Russia, Romania, China, Lithuania, India, Belarus and Moldova. In these countries, 29 investment projects have been started, i.e., as I have already mentioned, a half of all projects related to the internationalization strategy based on efficiency-seeking. Among the aforementioned projects, investments in construction material industry, chemical, electrical machinery, metal, plastics and wood industries are dominating. Other industries are only represented by single projects.

The major part of efficiency seeking investments is down-market FDI (see Figure 2). In most cases these are the investments carried out in order to reduce production costs and increase production capacity at the same time. In many cases, the companies obtain easier access to local market through investments outside of the EU, thus avoiding various barriers related to exports. The most important investments related to reducing production costs are the investments carried out in Ukraine, Belarus and Russia, implemented by Kęty Group (metal industry), Duda S.A., Mispol (food industry), Decora, Cersanit (construction industry) Ciech (chemical industry), Inter Groclin (automotive industry), Forte (furniture industry). In many cases, in addition to getting access to Eastern market, the companies significantly increase their sales in European markets where they only develop their distribution networks (Duda, Ciech, Decora, Inter Groclin). An interesting case in this group of companies is Bioton which develops its activities in biotechnology industry, making investments in low cost countries such as India and China, but also in Switzerland and Israel.

However, in this group up-market FDI also take place, such investments took place in case of 6 analyzed cases and were directed to the countries where labor costs are higher than in Poland (Germany, Sweden, Italy and USA). All such investments were related to acquisition of the companies from the sector of capital-intensive and relatively advanced technologies – this was not, however, the high technology sector. Acquisitions carried out by Polish companies in Germany included mining equipment factory (G.K. Fasing S.A.), plastics factory (Ergis Eurofilms S.A.), fertilizer factory (Zaklady Azotowe Tarnów S.A.). In one case, a Polish company acquired its parent company in the USA (Secowarwick), and in one case, the Polish company Boryszew S.A. acquired the Italian company (Maflow) as a result of difficult position of the latter caused by the global financial crisis. The last example concerning this group is the acquisition of a paper mill in Sweden by a company listed on the Warsaw Stock Exchange but controlled by capital originating from that Scandinavian country.

5.2. Further research

In order to verify whether CEE countries loose their cost advantage and not only gradually cease to be the place where MNEs locate their investments due to low labor costs but also start to locate their production in more cost competitive countries, the analysis of motives for MNEs from developed countries investing in CEE countries should be carried out as well as the study of main motives for OFDI of the companies originating from other CEE countries – not only from Poland. It would also be interesting to identify other factors that determine now both the inflow and the outflow of OFDI from the region, such as the existing tax system, including corporate income tax rate, progress in privatization process, benefits from operating of the companies in integrated European market for the investors.

6. Conclusions

The most important conclusions of the study are:

1. I proved on the basis of the regression analysis on a sample of the EU member states that there is a positive dependence between the labor costs in manufacturing sector and the degree of internationalization measured by OFDI stock per capita. Increase in labor costs by 1 USD results in increase in OFDI per capita by 1,31 cents (with unchanged level of GNP per capita).
2. The highest level of internationalization measured by OFDI stock per capita takes place in the countries with the highest labor costs and relatively small domestic market at the same time (Belgium, the Netherlands, Ireland, Denmark, Sweden). This means that the largest EU economies are not the leaders of the internationalization process.
3. Similarly, in the case of new EU member states, internationalization of business activity is higher in the countries with small domestic market and the highest labor costs (among CEE countries). This group includes: Slovenia, Estonia and Malta. Hungary is an exception, with the highest OFDI per capita due to investments carried out from the territory of that country by MNEs controlled by foreign capital.
4. Systematic increase in labor costs in CEE countries will lead to gradual increase in the degree of internationalization. This is confirmed not only by the regression analysis but also by empirical research of the companies listed on the Warsaw Stock Exchange. Among 96 companies having their subsidiaries abroad, 26 companies are motivated by efficiency seeking in carrying out their investments. Half of them carry out down-market FDI to

the countries that are cost competitive compared to Poland. This fact confirms that cost competitiveness – being a short-term competitiveness – gradually ceases to be the most important determinant for conducting business activities by the companies in the CEE region.

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Streszczenie

POCZĄTEK KOŃCA KONKURENCYJNOŚCI KOSZTOWEJ PAŃSTW EUROPY ŚRODKOWEJ I WSCHODNIEJ – ANALIZA ZALEŻNOŚCI POMIĘDZY KOSZTAMI PRACY A INTERNACJONALIZACJĄ REGIONU

Głównym celem artykułu jest weryfikacja, czy niski poziom kosztów pracy w Europie Środkowej i Wschodniej będący do tej pory jednym z czynników wpływających na konkurencyjność tego regionu pozostanie nim w dłuższej perspektywie czasowej. W pracy na podstawie próby wszystkich państw UE zbadano zależność pomiędzy poziomem internacjonalizacji (stan odpływu BIZ per capita) a kosztami pracy w sektorze przedsiębiorstw i GNP per capita. Analiza regresji potwierdziła istnienie zależności pomiędzy wyżej wymienionymi czynnikami. Oznacza to, że stopniowy wzrost kosztów pracy w państwach Europy Środkowej i Wschodniej prowadził będzie do stopniowego odpływu BIZ z tego regionu do państw bardziej konkurencyjnych kosztowo. W celu egzemplifikacji powyższych zależności w pracy dodatkowo przedstawiono analizę inwestycji zagranicznych polskich spółek notowanych na GPW, z których to 26 dokonało inwwestycji zagranicznych o wyraźnych motywach związanych z obniżeniem kosztów produkcji. Fakt ten potwierdza powolny spadek konkurencyjności kosztowej polskiej gospodarki, tym samym zmusza do poszukiwania nowych rozwiązań instytucjonalnych mogących utrzymać konkurencyjność polskiej gospodarki w długim okresie.

10.2478/v10103-012-0004-z

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State of Play and Sectoral Differentiation of Clusters in Visegrad Group Countries and in Germany in the Context of Increasing Competitiveness

Abstract

In accordance with the definition by the European Commission regional competitiveness means the ability of companies, sectors and transnational groupings in the region exposed to international competition to generate sustainable and relatively high income and employment levels. Following this line of thinking, strengthening the potential of local economic operators and their environment should become the priority of economic policies of the governments. One among recognised mechanisms that back up enterprise potential is the organisation and fostering of the competitiveness of clusters. They are a specific case of economic networks based on cooperation and competitiveness which usually need targeted investment in order to be efficient in their operations. Cluster policy implemented by Western European countries is most often systemic, integrated between the central and the regional levels with the material scope of investment focusing on assisting innovation in clusters. From this perspective it is interesting to see the shape the policy takes in Central European countries after their economic transformation. We selected Visegrad Group countries as the subject of our analysis knowing that clusters have been known there since at least the end of 1990s. Although more than 10 years have passed the conclusions indicate that the policy is at its initial development stage and, differently from Western economies (Germany in our case), it hardly effects the innovation of national economies and regional systems of innovation.

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1. Introduction

In Eastern and Central European countries, clusters are more and more attractive subject of interest, both among theoreticians and practitioners. They are perceived as one of the most important tools for improving competitiveness and innovativeness of the economy. Because of their specific nature (logic of partnership and cooperation between many actors), clusters are often becoming a platform, where hitherto isolated: world of science, world of public sector and world of enterprises meet each other, building territorially embedded business environment. There is no doubt that clusters can contribute to competitiveness and innovativeness of National economy as well. Thus, support and promotion of cluster initiatives remains a very important development policy issue.

A question arises, however, whether actors entrusted with the implementation of the economic policy at the central level and in local authorities are aware of the fact? Can they perceive the benefits and can they correctly recognise conditions for clusters? Do they support the development of clusters which can be easily verified by their number and innovativeness dependent upon the sector they operate in which, in turn, creates competition potential for a given location?

From the perspective of the European Union these questions are especially important for countries at a lower level of social and economic development; for countries which need effective mechanisms that impact innovativeness and the rate of economic growth. That is why in our study we have focused on countries of the Visegrad Group which in our opinion should use clusters to determine the rate of their growth. As a point of reference we have identified a comparable situation in Germany, the economy which is currently the most active with respect to clusters in Europe and also politically active in this field.

2. Role of clusters in strengthening economic competitiveness - conditions, essence and benefits

New technologies allow an exchange of almost everything between different persons and places. The two fundamental dimensions: time and space do not disappear. Instead, in the information society they are subordinated to the logic of network, structure of capital flows, technology, and information. Space, as R. Domański notices, along with socio-economic developments transforms into „a relational space that possesses an ability to process or destroy incentives,

disseminate or hinder innovations, adapt to the dynamics of processes in which it is involved. (...) between enterprises, administration, scientific institutions and social organisations a value added is generated and new resources are created" (Domański 2000, pp.3-4).

The network organisation is formed as a response to challenges posed by contemporary world in the context of competitiveness and development of regions. Network, as pointed out by A. Jewtuchowicz, „is a set of selected relationships with chosen partners depicted in market relations of enterprises. The main motive for their emergence is an attempt to reduce the uncertainty of action" (Jewtuchowicz 1997, p. 14). New network ties are established depending on needs and assumed strategies. In general, networks can be divided into intraorganisational networks and interorganisational networks (Sikorski 1998, p.27).

In the context of regional development the notion of network is closely related to the entrepreneurial network (*entrepreneurial milieu*), which appears in different forms and is subject to continuous changes. Such a form of organisation of enterprises is determined by a new paradigm of post-Fordist production organisation. R. Reich distinguishes some most common entrepreneurial networks such as: autonomous profit centres, external partnerships, internal partnerships, licensing, and pure agency. (Reich 1999, pp.79-80) These are examples of two types of networks, i.e. enterprises in network and networks in enterprises.

The network theory has close relationships with the polarisation theory. (Boudeville1972, p.68) According to P. Veltz'a „a growth of pools depends on their ability to make combinations with the main streams and networks, to seize rents connected with the points where the networks cross with each other, to create network ties, etc." (Grzeszczak 1999, p.52). Therefore, the main determinants of the network effectiveness include: flexibility of its elements (ability to adapt) and complementarity of its elements. The main feature of network is that between its hubs, apart from formal, regular and relatively durable contacts, one can notice very often alliances that are characterised by occasional and informal relationships.

The creation of network structures, between entrepreneurial, is driven and motivated by aspirations to achieve a competitive advantage by individuals. Networks facilitate communication and generate in one place and time the variety and dispersion of technological (innovative), productive, organisational and managerial competences. It is a quite rare situation when a single enterprise, especially a small one, possesses them all, particularly if a reference is made to the requirements of the global market. The possession of the above competences is a starting point to achieve a competitive advantage on the market (Sikorski

1998, p. 17). Therefore, networks can be seen as „a way of oganisation of enterprises", which enable enterprises to accomplish three main goals (Jewtuchowicz 1997, p. 14):

1. gain economies of scale through coordination of production, marketing and research functions with the remaining network actors,
2. control the market of complementary products, which is a necessary condition to be able to respond quickly to external changes,
3. control the strategic directions of development of this complementary production, which enables continuous innovation of own products.

The network reduces or puts aside the hierarchy between its actors, and replaces it with a new, horizontal organisational form, where a firm's economic success is perceived as the outcome of such factors as partnership, cooperation, reciprocity and environment of the firm. „Network is a global concept that brings one fundamental advantage to the local dimension which consists in the fact that it accepts a small and medium dimension, involves it with retention of its all characteristics, gives it the possibility to communicate, get out of isolation and integrate with other networks of the contemporary world" (Arocena 1996). The formation and existence of network organisations is based on the principle of mutual advantage of its elements.

Globalisation processes highlight the local level of economy and make use of the competitiveness of places within space determined by organising innovative *entrepreneurial milieu*. Different forms of production organisation characterised by strong territorial relationships emerge locally. As pointed out by D. Maillat, they are also involved in global activities. „(…) the local scale supports the global scale through the process of territorialisation" (Maillat 2001, p. 1).

A territorial production system forms a whole characterised by nearness of production units, and as pointed out by D. Maillat, in the broad sense „including industrial enterprises and services, research centres and centres of education, supporting institutions, etc., which maintain more-intensive or less-intensive relationships, and generate the production dynamics of the whole." (Maillat, Bataini 2002, p. 8) In this sense territory plays an active role, whereas the enterprises located on its area contribute to its enrichment.

In the context of these conditions and dependencies one may explain the phenomenon and the potential of clusters in regions. The concept of the development of clusters emerged in the 19th century. It was interpreted in various countries and by different research groups both theoretically and practically and was subject to re-interpretations.

Its development was directly initiated at the end of the 19th century by A. Marshall who used the notion of an industrial district to explain growing effectiveness of economy. (Jewtuchowicz, I. Pietrzyk 2003, pp.11-12) He promoted the idea according to which growing effectiveness is not only the result of economies of scale achieved by large enterprises, but it is also obtained by means of economies of agglomeration[1] and organization generated by the industrial district.

Italian researchers (among others A. Bagnasco, S. Brusco, G. Garofoli, G. Fua, C. Zacchia, C. Trigilia, G. Becattini) enlivened the idea of industrial district in the 1970s and 1980s of the 20th century. In particular, the concept was developed by G. Becattini who made a research on the regions of „Third Italy". The success of Italian industrial districts, which emerged spontaneously during the years of a big economic crisis, brought attention to essential changes that took place in a spatial dynamics of development. The emergence of new production areas, whose success could not be explained on the grounds of the classical theories of regional development, encouraged to search for a new approach to development. G. Becattini described a district as a „spatial concentration of small and medium-sized enterprises concentrated in industrial sectors and specialised in different phases of the production process, which contribute jointly to specific production identified as the district's industrial product" (Hsaini 2000, p. 218).

French researchers (representing the so called Grenoble School and including among others C. Courlet and B. Pecqueur) enriched the concept of industrial districts with methods of regulation and introduced the notion of a *system*. When investigating French regions they formulated the concept of *localised production systems.* C. Courlet defined a localised production system as „a system of enterprises grouped in close space around one of many industrial activities. The enterprises maintain the relationships between each other and socio-cultural milieu. These relationships are not only of commercial nature. They also concern an exchange of information and create positive external effects for the group of enterprises" (Hsaini 2000, p. 219).

The American researchers (A. Scott, M. Storper, R. Walker) reinterpret the importance of external effects in their research on the location of enterprises within the space. Their interests focus mainly on large urban agglomerations, therefore in their works they underline the importance of economies of agglomeration, which „are the result of structural factors connected with the

[1] Under the notion of *agglomeration,* one should understand a set or grouping of elements which form entrepreneurial milieux, and it should not be interpreted in a traditional way as the concentration of population and buildings in a small area resulting in its strong urbanisation.

organisation of the industrial process inside the selected community. They claim that these benefits determine the choice of location of enterprises." (Despiney-Żachowska 2002, p. 239; Manuel de Jesus 2003, pp. 87-94) Now, one points to the fact that economies of agglomeration (connected with external economies) give way to network economies in the hierarchy of determinants of the firm's competitiveness (Gancarczyk, M. Gancarczyk 2002, p. 75). Benefits achieved through networks belong to the category of synergy effects. Also another American researcher M. Porter deals with the problems of competitiveness of enterprises from the perspective of industrial and spatial organisation of location. However, he does not use the notion of a territorial production system, and instead uses the term *clusters.* In the recent years, owing to M. Porter the term won renown. From the viewpoint of works of European and American researchers, the term *clusters* seems to be helpful to identify the differences that result from basically different specificity and conditions of emergence of territorial production systems on both continents. The territorial forms of industrial organisation in the USA (for example, the Sillicon Valley, Pittsburgh, Phoenix) are characterised by a usually lower impact on their appearance from the factors related to history and tradition of place, and a bigger influence of the infrastructure of technology development (universities, innovation creation institutions, etc.). Hence, on the American ground the notions of a *technology district* or *technopolis,* which constitute a specific form of an industrial district, are closer in meaning than a territorial production system[2]. Technopolises arise spontaneously or as a result of specific industrial policy of the government. (Jewtuchowicz 2001, p. 45) However, the definition proposed by M. Porter does not bring any new elements, which would differentiate it from the previous ones and it says „this is the system of interlinked firms and institutions, whose value as a whole is bigger than the sum of values of its elements" (Porter 2001, p. 266). The American research introduced to the analysis of production systems the so called governance methods[3] and highlighted big importance of institutions in their development. It should be emphasized that representatives of the contemporary stream of institutionalism are inclined to consider institutions as the rules or principles of the game, which limit activities of individuals. According to D. North, the interactions between institutions and economic organisations and entrepreneurs give a new shape and direction to the evolution

[2] *Technopolis* is the centre of technology sales. They constitute a specific form of an industrial district. They emerge as a result of the government's industrial policy, as it is the case in Japan, Germany or France, or their appearance is a more or less spontaneous result of transformations of production systems, as the US-based Sillicon Valley or Orange County. For more information, see Benko 1993.

[3] The governance methods range from pure market mechanisms to the government's regulation described as a hierarchy. For more information, see Pietrzyk 2000, p. 53.

of economy. (Morawski 2001, pp. 58-59) „Institutions are limitations invented by human beings, which structure human relationships. Firstly, they consist of formal limitations, e.g. legal regulations (...), secondly, they consist of informal limitations, that is behavioural norms, conventions, mutually recognised customs and codes of ethics" (Grosse 2002, p. 40-41).

The clusters concept is based on the spatial self-organisation theory. N. Grosjean made use of the theories of systems and indicated the characteristic features, which show the autonomy of territorial production systems (Maillat, Bataini 2002, p. 8):

- systems are autonomous if they create organisations that define them as units,
- these organisations are based on the action of dynamic processes, which allow them to maintain their cohesion,
- systems which maintain their own identity are considered as autonomous,
- autonomy makes it possible for the systems to cooperate with their environment without any breach of their own cohesion.

These features enable the systems to work in the longer period through the processes of modernisation (self-organisation).

Cluster are oriented towards the competitive economic development of the territory on which they function making use of innovations and taking into consideration the conditions of the external environment (Maillat, Bataini 2002, p. 8).

Nowadays often used definition of cluster is: a geographic concentrations of interconnected businesses, suppliers, and associated institutions in a particular field. (Porter 1998, p. 78; Porter 1990) In other words, it is a geographic agglomeration of companies, specialized suppliers, service providers, firms in related industries, and associated organizations (such as universities, standard agencies, trade associations), linked by commonalities and complementarities, where both business competition and cooperation take place (Gordon, Ph. McCann 2000, p. 513-532; Hamdouch 2007).

3. Effectiveness of cluster analysis methods in comparative studies

Effective and well directed policy to support clusters requires a diagnosis of the development of clusters and their needs. Unfortunately the array of methods used for the purpose is very limited due to the differentiation of cluster

phenomena, on the one hand, and the lack of statistical data that diagnose economic networks at the local level, on the other hand.

Among the most popular methods, one can mention at least three: an *input-output* method, an analysis of concentration and qualitative research, based e. g. on case studies. Often, these methods are combined in one research project, or are a subject of modifications (Sölvell 2009, pp. 88-90; Solvell, Lidqvist, Ketels 2003, pp. 31-42).

The *input-output*, a method of cross-examination, leads to identification of potential clusters by analyzing interconnections between industries (sectors) of a nation's (or a region's) economy[4]. It shows how the output of one industry is an input to each other industry, e.g. which raw materials or other materials are used in the various sectors as an intermediate good. This method allows an accurate presentation of characteristics of production and consumption of given sectors in given regions, as well as a nature of interrelationships between producers and their links with other producers and economic activities. At present, however, especially in the case of Poland, big gaps in the statistical data on the satisfactory level of spatial disaggregation (extremely important for cluster research purposes), is an important disadvantage of this method.

A *location quotient* method is a relatively easy and quick tool for analyzing the concentration of enterprises in specific sectors[5]. For clusters' identification, this method may be helpful at the first stage of analysis (for identifying potential clusters)[6]. However, even W. Isard already suggested that *location quotient* is meaningless if it is treated as the only method of analysis. It is, however, to some extent useful in the initial phase of the study (Isard 1965, p. 19). To conclude, this method should be treated as a starting point for more deep analyses, since it identifies only concentration of enterprises in specific industries, but does not say anything about the internal structure and functioning of potential clusters (the quality and organization of business networks).

Therefore, to meet the requirement to depict cluster structures and their specific internal nature in more accurate way, the qualitative (expert) methods are being used more and more often. They are based mainly on carrying out interviews in various forms, depending on research assumptions made *a priori*.

[4] The creator of this method was a Russian-American economist W. Leontief (Leontief 1986). On the field of regional science, it was introduced by W. Isard (Isard 1960).

[5] *Location quotient* method was previously used for so called *economic base* estimations. Its usage in urban and regional economics is very popular and broad (for more, see e.g. McCann 2001, pp. 144-146; Isserman 1977, pp. 33-41).

[6] For the first time in Poland, this method was used to map the clusters in years 2002 - 2003 (Wojnicka, Brodzicki, Szultka 2003); in a modified form, it is also used as a basis for identifying clusters in Europe by *European Cluster Observatory*.

These interviews are made among cluster members, experts involved in the cluster activity, experts and researchers from the field where cluster operates, the public authorities, etc. To avoid a subjective assessment of qualitative data obtained in this way, as well as to assure its comparability, researchers dealing with issues of clusters try to use various methods aiming at overcoming these advantages. Among the latter, one may mention a *Multi-Sectoral Qualitative Analysis* (MSQA) (Roberts, Stimson 1998, pp. 469-494). This method allows the identification of competitive advantages, business potential, market opportunities and risks, and are based on estimation of weights (strong, average, poor) to each criteria based on data obtained from various sources: *input-output* matrix, interviews with key "actors" and other information available (T. Brodzicki, S. Szultka2002, pp. 45-60). This method was used, inter alia, by Michael E. Porter in a Cluster Meta-Study project[7], where on the basis on data concerning around 800 clusters from 50 countries, it was possible to create a list of standard criteria for clusters' identification and assessment, in order to quantify data for comparative analysis purposes[8].

In practice, currently in most research, one can observe the usage of more than one quantitative or qualitative methods (so called *methodological triangulation*), in order to adapt them to the specific circumstances of a particular country or region. Thus, most of comprehenesive studies of clusters, in their initial phase, is based on an analysis of statistical data, such as the volume of exports, employment, or the number of companies being cluster's members. This allows identification of potential clusters, their location and market coverage. For further, more deep examination, researchers start to engage qualitative methods, based on case studies, interviews with entrepreneurs and the knowledge of experts.

Last five years witnessed an enhanced interest in searching for effective ways of identification and diagnosing of clusters. That is to a large extent determined by the interest in clusters shown by the European Commission (2008/824/EC; 2008/C 257/12; SEC(2008) 2637) and some important, large scale international research and application projects (such as: Clusters are Individuals NGP Cluster Excellence (2011), TACTICS, Benchmarking of clusters in Poland (2010), The Cluster Benchmarking Project). Two all-European cluster platforms were launched to promote the idea but also to identify actors interested in clusters and cluster policy and to facilitate contacts

[7] See: Institute for Strategy and Competitiveness, Ludcke House, *Harvard* Business School; ISC Cluster Meta Project: http://www.isc.hbs.edu/econ-clustermetastudy.htm, accessed 12th of April, 2009.

[8] However, currently both a method and its results are also a subject of criticism (Hamdouch 2007).

among them[9]. The most important platforms of European scale are the *European Cluster Observatory* (Europe Innova, 2007), *Europa InterCluster* (EU 2010) and *Clusters Collaboration Platform* (European Commission, 2011). Many years of Author's experience in clusters allow to assess the credibility and accuracy of data available on the latest *Clusters Collaboration Platform* as acceptable when it comes to the identified clusters and cluster initiatives. Data concerning the identification of cluster phenomena are classified here based on the correct, in the Author's opinion, definition of a cluster. The credibility is confirmed, inter alia, by a high degree of consistency with the study Benchmarking of clusters in Poland 2010 and data verified on the websites of the clusters[10]. This database was used in the comparative analysis in further part of the study. Data represent the state of play as in March 2012.

4. Identification and comparative analysis of clusters by sectors in selected countries

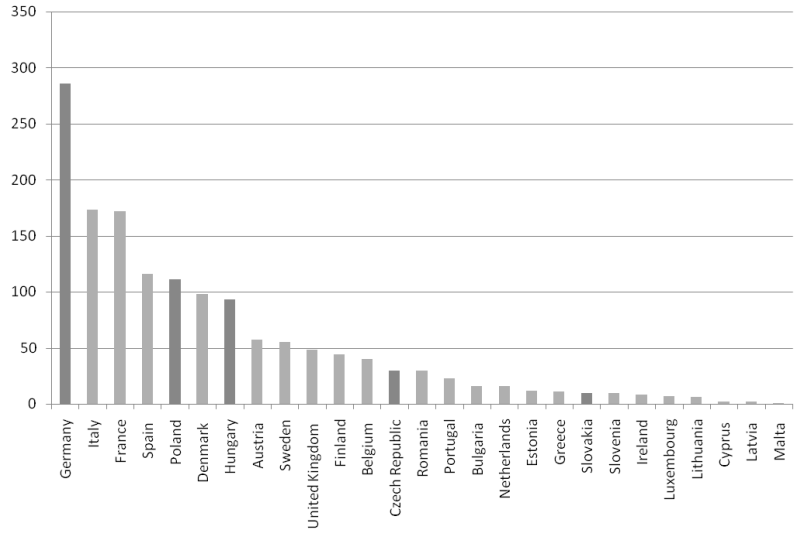
Innovation in companies is not possible if they do not find themselves in an appropriate environment, such as e.g. a dynamic cluster. According to the report ***European Cluster Policy Group*** 38% of working Europeans are employed in various sectors of industry concentrated in clusters (European Clusters Policy Group 2010). Considering only the general number of clusters it is hard to link it to indicators depicting economic competitiveness as the latter

[9] There are also many national or sectoral platforms, e.g.: *Portal Innowacji (Innovation Portal), European Aerospace Cluster Partnership, European Biotechnology Network,* The International Society for Optical Engineering.

[10] The definition by M. Porter, although used the most frequently, is rather imprecise from the point of view of cluster identification. Using it an inexperienced researcher may incorrectly classify as clusters economic phenomena which in fact are not clusters but only try to call themselves that way. That is why various methods or detailed criteria are used to identify clusters. The authors of the methodology for Benchmarking of clusters in Poland 2010 adopted an operational definition to the M. Porter's definition and identified four criteria that must be met by an economic network to be classified as a cluster: concentration around the core branch identified; geographical concentration and territorial identity of a cluster (cluster must be territorially embedded); the sustainability of cooperation (at least within the core of cluster); commonality of initiatives (e. g. in terms of common promotion, common supply and / or distribution, common training, technology transfer, lobbying, etc.) and the presence of common elements of the value chain realized by companies / institutions operating in the cluster. (A. Nowakowska, Z. Przygodzki, M. Sokołowicz, K. Matusiak, A. Bąkowski, 2010). Such a definition allowed to identify 47 clusters and 74 cluster initiatives out of all of 178 identified cluster phenomena in 2010. The list and the numbers faithfully reflect clusters identified on the platform *Clusters Collaboration*.

largely depends on two elements: natural characteristics and the organisation of the business community in a given country (1) and the degree of organisation and systemic nature of pro-cluster policy (2).

Figure 1. Number of clusters and cluster initiatives in the EU countries



Source: own calculations based on Clusters Collaboration Platforms, 09.03.2012.

At the moment German economics represents high propensity to self-organisation of economic actors, business and research communities. That is due to both a relatively high tendency among the business community to cooperate and the policy of public authorities which promote clustering in Germany, especially in highly innovative sectors. The policy is of a systemic nature both at the national and regional levels. (Borras, Dimitrios Tsagdis 2011, pp. 63-67) Poland owes its relatively high ranking (Fig. 1) mainly to high enterprise spirit of the Poles (understood as a tendency and capabilities to take advantage of emerging opportunities) and to instruments of financial support to cluster organisations provided by central authorities. Hence over a half of 111 cluster phenomena registered at the platform *Clusters Collaboration* are only cluster initiatives, not fully fledged clusters (one may estimate there are ca. 48 clusters in Poland (PAED)), nevertheless other organisations that currently are cluster initiatives (often of formalised nature registered as associations) may easily start operating as clusters if circumstances permit. The absence of a long-term vision of systemic arrangements that support clusters also result in the fact that most of

the clusters in Poland (over 50%) are in their initial stage of development and have been remaining in it for some years already (almost 90% of currently active clusters were established between 2006 and 2008) (Deloitte Business Consulting S.A 2010).

Studies show that companies in clusters achieve higher productivity and innovation and the survival rate of start-ups is higher and they grow faster. More innovative clusters operate in highly developed countries but the picture is largely differentiated. The following dependence is a rule: higher level of development of a country determines a higher proportion of clusters active in highly innovative sectors with a relatively high number of participants. The dependence results to a large extent from the concentration of public policy support on those branches and communities which are highly capable of using R&D in their operations. That is confirmed by the German practice where cluster policy has been conducted since 1980s but already in 1990s it was clearly oriented at highly innovative branches (e.g. by implementing programmes like: *BioRegio, InnoRegio, BioIndustriale, BioPharma competition* and other) (Meier do Köcker 2009, pp. 10-14). At present the European Commission has taken a similar approach. In structural support mechanisms for clusters that benefit from Structural Funds the Commission opposes public financial engagement in sectors of low innovation or in areas not linked with R&D. In the current programming period 2007-2013 Visegrad Group countries strongly defend that direction of the policy. As a result and in reflection of poor readiness of the economy and economic policy structures for new challenges and objectives under Europe 2020 strategy we experience difficulties in using financial support instruments for clusters development in Poland within the framework of Operational Programme Innovative Economy in its Measure 5.1 where the investment is directed to assist innovation of a cluster, not its organisation or promotion. Besides financial support at the central level pro-cluster policy is also conducted to a limited extent by the Polish Agency for Enterprise Development under the Operational Programme Innovative Economy and Operational Programme Human Capital but the policy consists only in projects not in systemic activities. In 2011 the Ministry of Economy faced the challenge of identifying the framework and objectives of pro-cluster policy in Poland, however, the policy has not become operational so far. At the regional level the policy to support development of clusters formally exists and is implemented in all 16 regions under the regional innovation policy. In practice, however, the outcomes of the policy are visible only in 6 regions which shows its real importance in regions.

As shown by studies on Polish clusters conducted in organisations registered on *Clusters Collabolation Platforms*, cooperation among the members

to clusters focuses mainly on common promotion and marketing, organisation of markets and only occasionally does it take the form of common research projects.

Table 1. Areas of cooperation undertaken by clusters' participants

Common projects implemented	Common promotion	Common marketing and distribution	Common supply	Common staff training	Expertise and consultancy ordered jointly	Common R&D projects	Common works on product's quality improvement
Number of indications	39	28	21	28	24	11	3
Percentage of indications	83%	60%	45%	60%	51%	23%	6%

Note: There was a possibility to indicate more than one choice. Thus, percentages do not add up to 100%.

Source: own calculations.

A similar orientation of cluster innovation policy can be observed in Hungary. *Hungarian Pole Program* (operating since 2008) supports clusters at three levels: establishing cooperation, cooperation development and support for innovation. In the first two objectives the policy is mainly of regional dimension with little involvement in innovativeness of clusters, consisting most of all in animation and coordination of structures and actors. The third objective, however, is delivered first of all by central authorities under innovation and R&D projects that currently are available only to 25 clusters. The number indicates a limited potential and importance of clusters for the Hungarian economy[11].

The Czech Republic has got the poorest record when it comes to pro-cluster policy of innovative nature as the policy practically has not been defined. Clusters are mentioned in general documents on regional policy or industrial development policy. Most often, however, public engagement in the subject focuses on infrastructural investments and interferences with labour market policy. Thus competitive potential of Czech clusters is „bottom up" driven and depends solely upon how much their members are determined to cooperate and to be competitive. In practice there are just two well developed clusters. One in

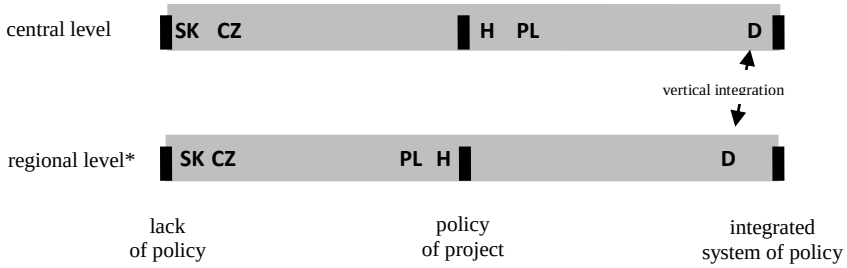
[11] Participation in these programmes requires a special accreditation available to clusters which generate important numbers of new jobs, represent high innovation potential and are international in their operations.

the automotive sector dependent in its development on the efficiency of strong foreign partners (who, by the way, are German). The second cluster is a film industry one with local, endogenous development potential.

In Slovakia the level of supporting the development of clusters is similar to that in the Czech Republic. At present the notion of a cluster can be found in strategic documents of the country but the cluster-oriented policy is of marginal importance. The policy is absent at the regional level (Borras, Tsagdis 2011, pp. 134-137).

The number and innovativeness of clusters in the countries covered by the study largely depend on how much the policy to support clusters is integrated and targeted. The conclusion in a simplified version confirms the ratio of operators active in highly innovative sectors in the overall population of clusters in a given country.

Figure 2. Integration of cluster policy in Visegrad Group countries and in German

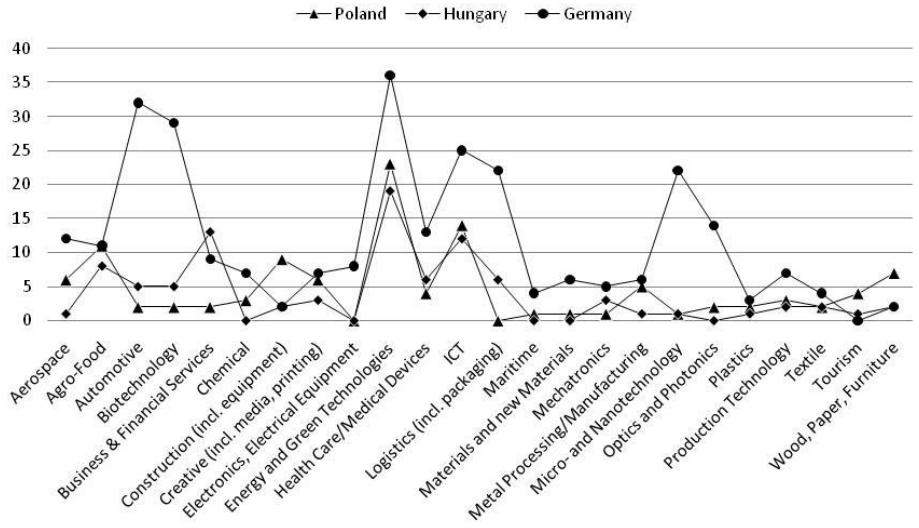


* - average assessment for all regions of the country

Source: own calculations.

It is easy to note (fig. 3) that in Germany the clusters are mostly of highly innovative nature with dominant sectors such as: biotechnology, energy green technologies, nanotechnology, production technology, optics, photonics and ICT.

Figure 3. Sectoral structure of clusters and cluster initiatives in Visegrad Group countries and in Germany in 2012



	Aerospace	Agro-Food	Automotive	Biotechnology	Business & Financial Services	Chemical	Energy and Green Technologies	ICT	Micro- and Nanotechnology	Plastics	Textile	Tourism	Wood, Paper, Furniture
Czech Republic	1	1	2	2	2	2	6	3	2	3	1	1	6
Slovakia	0	0	2	0	0	0	0	3	0	1	0	2	2

Source: own calculations based on: Clusters Collaboration Platforms, 09.03.2012; clusters websites, *Europe InterCluster* EU.

In Poland and in Hungary, similarly to Germany, one can observe the same tendency and a considerably large share of clusters in energy green technologies and ICT. These are the only highly innovative sectors which by themselves with relatively little public support are able to organise their communities. One must remember, however, that the absence of clusters and cluster initiatives in highly innovative sectors of German economy is mostly due to the combination of innovation and cluster policies at the national and regional levels and a strong promotion effect resulting from the policy of selecting and supporting the so called key clusters.

Table 2. Clusters and cluster initiatives by innovation level of a sector in Visegrad Group countries and in Germany in 2012

industry	Poland		Hungary		Czech Republic		Slovakia		Germany		total of clusters and cluster initiatives in the industry	
	number	%	number	%	number	%	number	%	number	%	number	%
Aerospace	6	5,4	1	1,1	1	3,3	0	0	12	4,2	20	3,8
Agro-Food	11	9,9	8	8,6	1	3,3	0	0	11	3,8	31	5,8
Automotive	2	1,8	5	5,4	2	6,7	2	20	32	11,2	43	8,1
Biotechnology	2	1,8	5	5,4	2	6,7	0	0	29	10,1	38	7,2
Business & Financial Services	2	1,8	13	14,0	1	3,3	0	0	9	3,1	25	4,7
Chemical	3	2,7	0	0,0	1	3,3	0	0	7	2,4	11	2,1
Construction (incl. equipment)	9	8,1	2	2,2	0	0,0	0	0	2	0,7	13	2,5
Creative (incl. media, printing)	6	5,4	3	3,2	0	0,0	0	0	7	2,4	16	3,0
Electronics, Electrical	0	0,0	0	0,0	0	0,0	0	0	8	2,8	8	1,5
Energy and Green Technologies	23	20,7	19	20,4	6	20,0	0	0	36	12,6	84	15,8
Health Care/Medical	4	3,6	6	6,5	0	0,0	0	0	13	4,5	23	4,3
ICT	14	12,6	12	12,9	3	10,0	3	30	25	8,7	57	10,8
Logistics (incl. packaging)	0	0,0	6	6,5	0	0,0	0	0	22	7,7	28	5,3
Maritime	1	0,9	0	0,0	0	0,0	0	0	4	1,4	5	0,9
Materials and new Materials	1	0,9	0	0,0	0	0,0	0	0	6	2,1	7	1,3
Mechatronics	1	0,9	3	3,2	0	0,0	0	0	5	1,7	9	1,7
Metal Processing/ Manufacturing	5	4,5	1	1,1	0	0,0	0	0	6	2,1	12	2,3
Micro- and Nanotechnology	1	0,9	1	1,1	2	6,7	0	0	22	7,7	26	4,9
Optics and Photonics	2	1,8	0	0,0	0	0,0	0	0	14	4,9	16	3,0
Plastics	2	1,8	1	1,1	3	10,0	1	10	3	1,0	10	1,9

Production Technology	3	2,7	2	2,2	0	0,0	0	0	7	2,4	12	2,3
Textile	2	1,8	2	2,2	1	3,3	0	0	4	1,4	9	1,7
Tourism	4	3,6	1	1,1	1	3,3	2	20	0	0,0	8	1,5
Wood, Paper, Furniture	7	6,3	2	2,2	6	20,0	2	20	2	0,7	19	3,6
total of clusters and cluster initiatives in the country	111	100,0	93	100,0	30	100, 0	10	100	286	100,0	530	100,0

Source: own calculations.

5. Conclusion

The European Union member states will soon enter the new programming period and will face new strategic challenges outlined in Europe 2020 strategy. Since the Lisbon Strategy was announced the EU member states have oriented themselves to invest in improved innovativeness of their economies. The policy to support innovation in businesses has been significantly amended also directions of investment are different. In short we may say that traditional, easy but little effective investment areas are not approved by the European Commission any more. More developed EU countries by promoting clusters invest mainly in their innovativeness and the same is expected from other member states including Poland.

Assuming an appropriate scale of the phenomenon we might boldly conclude that clusters may become the driving force for economic growth of countries and regions in which they operate. That is also visible in the case studies as independently of the country ca. 50% of clusters operate in highly innovative branches and sectors[12]. In highly developed countries (in our case in Germany) the category is more differentiated meaning higher competitiveness of business sectors and of the economy. Another dependence tells us that in countries where cluster policy is not clearly related to the objectives of

[12] For the needs of the paper we divided clusters and cluster initiatives into three classes of branches depending on how innovative they are: highly innovative (1): aerospace, biotechnology, energy and green technologies, ICT, mechatronics, micro- and nanotechnology, production technology; average innovative (2): automotive, business & financial services, creative (incl. media, printing), electronics, electrical equipment, health care/medical devices, materials and new materials, plastics; traditional industries (3): agro-food, chemical, construction (incl. equipment), logistics (incl. packaging), maritime, metal processing/manufacturing, textile, tourism, wood, paper, furniture.

innovation policy the share of clusters in traditional industries is substantial. On the one hand the tendency to form clusters in less innovative sectors is positive but for the growth potential partnership networks should definitely be encouraged among actors of knowledge-based economy.

Table 3. Share of branches by innovation level in total number of clusters and cluster initiatives in studied countries in 2012

Branch innovation level	Poland	Hungary	Czech Republic	Slovakia	Germany	amount of clusters and cluster initiatives
highly innovative	46,8	46,2	46,7	30	52,4	49,4
average innovative	15,3	30,1	20,0	30	27,3	24,9
traditional industries	37,8	23,7	33,3	40	20,3	25,7

Source: own calculations.

The analysis shows that less developed countries (in our study: Poland, Hungary, Czech Republic and Slovakia) should clearly: firstly, engage themselves into the construction of a systemic, long-term support for economic networks including clusters; and secondly, shift the support from the current focus on organisation and stimulating cooperation to investments in support of innovation and competitiveness of clusters in order to strengthen the potential of innovative businesses. Cluster policy should ideally become a part of innovation policy oriented at concrete results and priority sectors for economic development.

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Streszczenie

STAN I ZRÓŻNICOWANIE SEKTOROWE KLASTRÓW W KRAJACH GRUPY WYSZEHRADZKIEJ ORAZ NIEMCZECH W KONTEKŚCIE WZMACNIANIA ZDOLNOŚCI KONKURENCYJNYCH

Zgodnie z definicją Komisji Europejskiej pod pojęciem konkurencyjności regionów należy rozumieć zdolność przedsiębiorstw, przemysłu, a także ponadnarodowych ugrupowań, zlokalizowanych w regionie, wystawionych na międzynarodową konkurencję, do osiągania trwałego i relatywnie wysokiego poziomu dochodu i zatrudnienia. Zgodnie z tym rozumieniem wzmacnianie potencjału rodzimych podmiotów gospodarczych i ich otoczenia, powinno być priorytetem polityk gospodarczych rządów. Jednym z uznanych mechanizmów wspierających potencjał środowisk przedsiębiorczości jest organizacja i wzmacnianie konkurencyjności klastrów. Stanowią one specyficzny rodzaj sieci gospodarczych opartych na logice współpracy i konkurencji, których sprawne funkcjonowanie najczęściej wymaga ukierunkowanych inwestycji. Polityka klastrowa realizowana przez kraje Europy Zachodniej ma dziś najczęściej charakter systemowy, zintegrowany między poziomem centralnym i regionalnym, natomiast rzeczowy zakres interwencji dotyczy przede wszystkim wspierania innowacyjności klastrów. Z tej perspektywy interesujące jest jaki kształt polityka ta przybiera w krajach Europy Środkowej po zmianach związanych z transformacją gospodarek. Jako przedmiot analizy wybrano kraje Grupy Wyszehradzkiej, wiedząc, że zjawiska klastrowe były tutaj znane już przynajmniej od końca lat 90-tych. Mimo, iż upłynęło już ponad 10 lat wnioski z analizy wskazują, że polityka ta jest dopiero w początkowym stadium rozwoju i w przeciwieństwie do gospodarek zachodnich (w analizowanym przypadku Niemiec) w znikomym zakresie oddziałuje na innowacyjność gospodarek krajowych i regionalnych systemów innowacyjnych.

10.2478/v10103-012-0005-y

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The Role of Older People as Consumers – the Comparative Analysis of Old and New Member States of European Union[1]

Abstract

The aim of this paper is to investigate differences between the role of older people as consumers of goods and services in Old and New Member States of European Union. An ageing of society process causes changes in the structure of consumers of goods and services, in size and age respectively and therefore should be comprehensively considered. The consequences of an ageing process have been illustrated with an example of the tourism market.

To reach the goal of this paper statistical analysis has been carried out, particularly in order to examine the differences between EU New and Old Member States[2] with respect to dynamics of population ageing and characteristics of older customers. Most of the recent scientific literature considering the specific influence of demographic processes on customers behaviour has been reviewed.

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[1] The publication is financed from European Social Fund in as a part of the project "Educators for the elite - integrated training program for PhD students, post-docs and professors as academic teachers at University of Gdansk" within the framework of Human Capital Operational Programme, Action 4.1.1, Improving the quality of educational offer of tertiary education institutions.

[2] EU Old Member States (EU-15, OMS countries): Belgium, Denmark, Ireland, Luxembourg, Germany, Spain, Portugal, France, Italy, United Kingdom, Finland, Sweden, Greece, Netherlands, Austria.

EU New Member States (EU-12, NMS countries): Poland, Slovakia, Slovenia, Czech Republic, Malta, Lithuania, Latvia, Estonia, Hungary, Romania, Bulgaria, Cyprus.

The key findings prove that an ageing of societies process is significant for each European country. However EU-12 societies are generally younger in comparison to EU-15. On the other hand EU-12 societies are exposed to higher risk of rising dynamics of demographic changes. In a consequence, the increasing role of older people as customers brings also essential changes in relation between supply and demand on each markets. What is highly important, older customers needs are evolving due to their increasing purchasing power, higher education level and better consumers awareness. For instance, these relationships can be observed on tourism services markets where older people are becoming a significant and more attractive group of consumers, due to the level of their tourism expenditures. Moreover, the study described clearly considerable differences between older customers behaviour in EU Old and New Member States: in the purchase frequency of tourism services, in the length of holiday trips and in the level of expenditures. In the subsequent years, a higher homogenisation of purchasing habits of older people in European countries is expected.

This paper contributes to the most current European scientific discussions on an importance of older people for a development of economies from the perspective of their impact on goods and services markets. Furthermore, especially in a context of insufficient optimization of companies strategies, which are still directed to a shrinking group of young buyers and the lack of knowledge about changing needs of older customers need to be highlighted and analyzed to bring new solutions for producers, retailers and whole markets.

1. Introduction

The increasing role of older consumers on European markets of goods and services is strictly connected with general demographic trends of ageing of societies.

The boundary, which is separating different age groups between young and old customers is widely discussed in the literature. Depending on the author and the purpose of the division, its exact age value varies between 45 and 75 years old. Differences in approaches stem from the research areas of the conducted analysis. For example, when marketing strategies of cosmetic products are taken into account, the age of 50 is being selected in most cases. By contrast, conscientiously research in the field of medical care services for elderly define older people as those who are at least 75 years old. Due to the rising life expectancy the age level, which is used as a boundary for classifying people between young and old is increasing. As a result in recent years more interest in

scientific researches is directed toward people from the so-called ‘older-older’ group, which consists of people at the age of 75+ or even 80+ (Rosset 1959, pp. 107-134; Kurkiewicz 1992, pp. 55-56).

The age level of elderly is not absolutely clear even in statistical datasets, hence it becomes one of the most crucial limitations for deeper comparisons. This problem reveals not only in comparative studies between groups of countries or individual countries, but also in different studies prepared and published even by one institution, e.g. Central Statistical Office of Poland (CSO 2011). Widely recognized classification implemented in European statistics (Green Paper 2005, p. 4) divide age groups in society in the following categories:

- children – 0-14 years;
- young people – 15-24 years;
- young adults – 25-39 years;
- adults – 40-54 years;
- older workers – 55-64 years;
- elderly people – 65-79 years;
- very elderly people – 80 years and more.

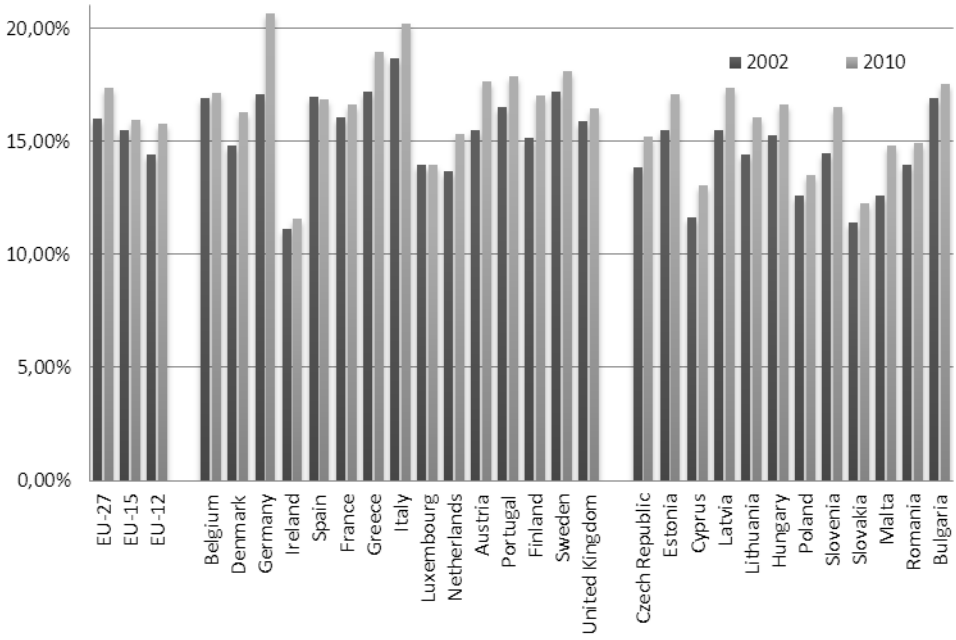
Because the aim of this paper requires statistical analysis, it is highly important to choose the correct boundary of elderly people. Most statistical datasets are based on economical activity and that is the reason why age of 65 is the most common term of elderly. The same threshold is accepted in this study, whereas it is possible. However, as it will be clarified in subsequent paragraphs, the classification where only one variable – the chronological age – is taken into account is an oversimplification and can lead to numerous inaccuracies. Categorizing by age groups is often misused in order to obtain so called homogenous cohorts, members of which can afterwards by similar features and behaviours. Notwithstanding, modern societies, as a result of progressive processes of cultural change, go beyond the accepted roles where people no longer behave as they are excepted for their age. This phenomena is called ‘age intricacy’ and is a result mainly from changes in an area of a life-style of social groups (Styś 2006, pp. 10-12). That is the reason why some more categories should be taken under consideration when describing an older consumer’s behaviour and its impact for goods and services markets. This point of view is also a part of this paper.

2. Ageing of societies process

An ageing of society process can be described as a growing participation of older people in population. To illustrate the significance of this process a proportion of people aged 65 and over is presented on the Figure 1.

Figure 1 illustrates that an ageing of society processes is a common tendency for almost every EU Member State. An average percentage of share of older people in population in 2010 for 27 countries of European Union amounted 17,38% and it was more than 1,3 percentage point higher comparing to 2002. The only exception in this statement is Spain, where a slight decrease of the elderly share in population was noticed since 2002. However, demographic projections, also for Spain, predict the growth of the index above the level of a base year.

Figure 1. The share of people aged 65+ in total population (in %)



Source: own calculations based on: (Eurostat 2011).

According to the graph above, there are significant differences between countries in the process dynamics of ageing of societies. The youngest society is in Ireland (11,60%) and the oldest is in Germany (20,66%). There are also differences in the level and dynamics of the older people share between EU New and Old Member States. UE-15 notes on average the index level of 15,93%

compared with 15,76% in twelve New Member States. This disproportion was even greater in the year 2002 (15,47% to 14,39%) due to the higher dynamics of demographic changes in EU-12, which nearly equalized values in both groups of countries. As set out in long-term demographic projections, the ageing process will continue in future decades all over Europe.

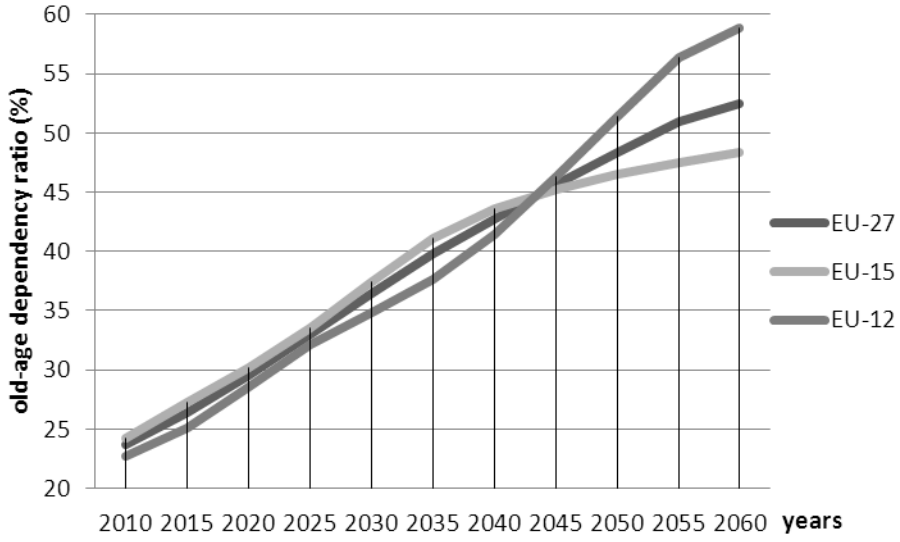
All mentioned above dissimilarities arise from several sources. First of them are so called baseline demographic conditions in each country. Among them the level of fertility, mortality and migration balance are said to be the most important factors. In addition, an indirect impact on visible differences is created by a close connection with so called 'demographic transition model'. The basic interpretation of this model demonstrates the significant impact of country development change from pre-industrial to an industrialized economy on birth and death rates. Each stage of demographic transition varies in a pace and main sources of transformation. Firstly, higher income brings new solutions in a food supply and health care systems. Next improvements are noticed in the area of work conditions as well as in the increasing urbanization process and contraceptive technologies development. All these factors lead to modification of a lifestyle and the work valuation by society members and in consequence lead to change in the concept of a family and child-raising. In addition, changes in age structures have an impact on the size of population. First stages of demographic transition bring higher dynamics in population growth rates because of significant decrease in children mortality as well as in the older people cohort. Because of further amendments the society reaches the moment of stagnation and later starts the process of shrinking and ageing of population. Some theories suggest that there are only four stages of a demographic transition, however new socio-economic circumstances brought new interesting observations. According to newest researches, countries with the highest levels of national wealth (measured by HDI – Human Development Index) experience the reversed negative trend. It is a sign that by intensify efforts to promote fertility it is possible to increase number of children in societies. It can be called as a fifth or even the sixth stage of the society transition (*Active*... 2003, pp. 29-32; Myrskylä et al. 2009, pp. 741-743).

One of the main indicators, which give a measure of an ageing of societies process is median age. In 2010 the median age of the EU-27 population was 40,9 years, meaning that more than a half of European Union citizens were aged 40 years and over. This index differs among the Member States starting from 34,3 years in Ireland to 44,2 years in Germany. This variation is a consequence of earlier observations in the degree of population ageing in particular countries of the EU. Again, in OMS countries the level of the demographic indicator explained above is higher than in EU-12. The median age of total population in

EU-27 rose steadily in analyzed period - in total more than 3 years since 2002 (*Demography Report* 2011, pp. 61-63).

The ageing process in Europe should be considered by the measure of younger age cohorts participation in population. The general tendency among European countries is accruing analogy: the larger share of older people in a society the smaller part of people aged up to 20 years. Particularly this statement is a truth for Germany (with the lowest proportion of young people) and for Ireland (with the highest share of 0-19 year olds) (*Demography Report* 2011, pp. 60-61). Those observations confirm that an ageing of society is largely determined by a low level of fertility rates and dynamic changes in age structures, which manifest itself not only in the rising number of older people but also in a decline in numbers of younger cohorts (both adults and children). Moreover, an increasing role of older people can be corroborated by an old-age dependency ratio, which shows the relative size of the old population (65 and over) to working age population (15-64 years).

Figure 2. Old-age dependency ratio



Source: own calculations based on: (Eurostat 2011).

The demographic transformation of an European society, illustrated by Figure 2, leads to significant changes in proportion of selected age groups in population. According to the previous findings, an increase in old-age dependency ratio is projected. However, these changes will not proceed with equal force everywhere. Relatively equal, but rapid growth in all 27 European countries in 2010-2060 is a result of two different, overlapping trends. Old

Member States will exceed the average value of analyzed ratio of EU-12. It will be observed by the year 2040 when the tendency is going to be reversed. These disparities are the consequence of a decreasing dynamics of a deterioration of the indicator in countries from the first selected group and a very rapid increase in its value noticed in NMS countries, ranging from 2035. All presented phenomenon have an important impact on the possibility of an economic growth, a public finances stability or pension systems effectiveness. In 2010 in the EU-27 had about 3,5 person at working age for every person aged 65 years and over. Between 2050 and 2055 this index is going to double and that means, commonly speaking, that no longer 3,5 persons, but only 2 persons will have to work for one retired person. Of course, this interpretation shouldn't be treated so directly, but it certainly shows projected burdens of development posed by demographic changes.

The analysis of demographic processes requires taking into account also the speed of projected changes. The changes occurring too rapidly and a presence of a need of extensive socio-economic adaptations put very strong demands on state policies. The necessity of constant changes monitoring must affect an amendment of implemented and planned public strategies, which in turn will be a significant measure of state actions effectiveness. Adding uncertainty of demographic projections to those considerations and difficulties in an estimation of their impact on societies and economies, it draws a complete picture of challenges faced by particular countries. Three groups of countries can be distinguished by their susceptibility of population changes (*Demography Report* 2011, pp. 64-65):

- countries that will experience a slow pattern of ageing, start with a temperate old to older population: Sweden, Belgium, Denmark, France, Luxembourg, Netherlands; slower ageing will help these states to become relatively younger compared to others
- countries that are already relatively old and are projected to age at a moderate rate: Germany, Austria, Spain, Italy, Slovenia and Greece as well as Ireland (this same age pattern but a lower level of a start point of ageing); they will experience modest ageing of population processes but only in first decades in the future (till 2040)
- countries with the highest rates of population ageing, mainly from 2040 onward: Poland, Slovakia, Bulgaria, Cyprus, Hungary, Lithuania, Latvia, Malta and Romania; currently with a comparatively low proportion of population age 65+ is projected to increase slowly until 2020 and to grow rapidly in next decades.

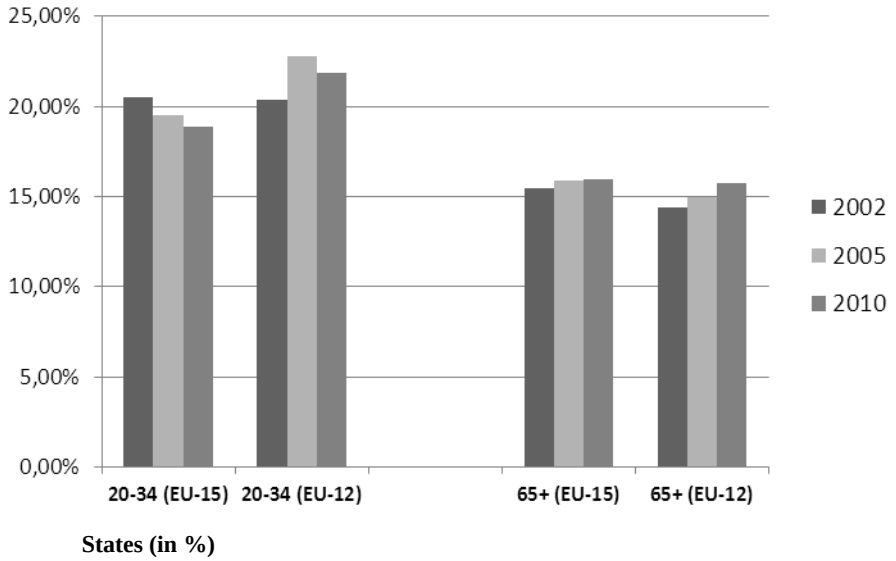
New Member States are included mostly to the last group of countries with the highest expected dynamics of changes in age patterns. In the future,

different dynamics of ageing in each country will result in much greater diversity in the level of ageing of populations across EU-27. This statement stays in line with earlier findings, that the most rapid transformation in an age structure of societies occur in EU-12 and those countries will struggle with the biggest socio-economic problems. Moreover, NMS countries are often characterized by a lack of experience in taking effective efforts to meet demographic challenges, what puts them even in a difficult position.

3. Characteristic of ageing consumers

Since in the literature the marketing's fixation on the 20-34 age group as the best target for successful business is often highlighted, it seems reasonable to consider simultaneously an evolution of a participation in population of people aged 65 and over to those aged 20-34 (Fig. 3).

Figure 3. Participation of people aged 20-34 and 65+ in population in Old and New Member



Source: own calculations based on: (Eurostat 2011).

Comparing two selected age cohorts from Figure 3, some observations can be made. First are differences between proportions of younger and older age groups in societies. Those aged 20-34 are a greater part of societies both in New and Old Member States than those aged 65+. Taking into account the observed

changes of this index during the analyzed period it is visible that in EU-15 countries the gap between older and young is narrowing, which is a consequence of an increasing participation of people aged 65+ and a dynamic decline in participation of a younger age cohort. However, this trend can't be confirmed in NMS countries, where the dynamic growth of a significance of older people is not accompanied by a comprehensible trend for those aged 20-34. The explanation leads again to the demographic transition model and a classification of each countries groups to a different stage of the transition. In general, Old Member States, as more economically developed countries, are also more advanced in demographic changes, which can be observed in earlier shrinkage of children generation and young adults. Conversely, countries included to EU-12 as less developed both in economic and demographic processes are in earlier stages of age structure changes and presumably are going to reach the comparable level to EU-15 in the nearest future.

Differences in the role of older people as consumers between Old and New Member States of European Union require to include absolute and relative sizes of each age group. Moreover it is necessary to consider additional characteristics of older buyers, e.g. purchasing power, level of education, health condition, mobility or household conditions. Some of these factors are investigated in the next paragraphs.

First indicator is describing an economical situation of older customers and it is a percentage ratio of people at risk of poverty and social exclusion in population (Tab. 1). This index is often used to show both a significant disproportion between Old and New Member States as well as changes of its level in time.

Table 1. People at risk of poverty and social exclusion (as percentage of total population of age cohort, in %)

		2005	2006	2007	2008	2009	2010
Less than 65 years	EU-27	25,7	25,4	24,4	23,7	23,4	24,1
	EU-15	21,6	22,0	21,6	21,6	21,5	22,4
	EU-12	40,8	37,9	34,8	31,3	30,4	30,6
65 years and over	EU-27	25,6	24,8	24,5	23,2	21,7	19,8
	EU-15	21,8	21,6	21,9	20,9	19,5	18,0
	EU-12	42,1	39,2	36,4	34,0	31,7	28,3

Source: (Eurostat 2011).

Data presented in Tab. 1 describe general observations from European Union and indicate that as a whole, people aged 65 and over are less exposed to poverty than younger cohorts of European citizens. Statistically one of four

persons aged up to 65 years lives on less than 60% of their country's average household income. Among older people such low level of income affects every fifth person. Moreover, during six years of the conducted analysis, the poverty ratio for older people was systematically decreasing from 25,6% in 2005 to 19,8% in 2010, while a declining tendency for younger generations is less spectacular (only about 1,5%). In addition in the year 2010 the opposite tendency could be observed among the young people. The observed changes can be taken as a sign market decision makers that older customers are not only an important, but also an economically attractive group of buyers.

Additionally, what is needed to be highlighted, there are significant differences between Old and New Member States in the exposure on the risk of poverty. In the EU-12 countries the level of this indicator is much higher. It means that, when an average household income are taking into account, inequalities between particularly countries are much more visible. For instance, the biggest risk of poverty of older people is in Bulgaria together with almost the lowest level of income, which is much lower not only in comparison with an average for EU-27, but also with the group of EU-12 countries.

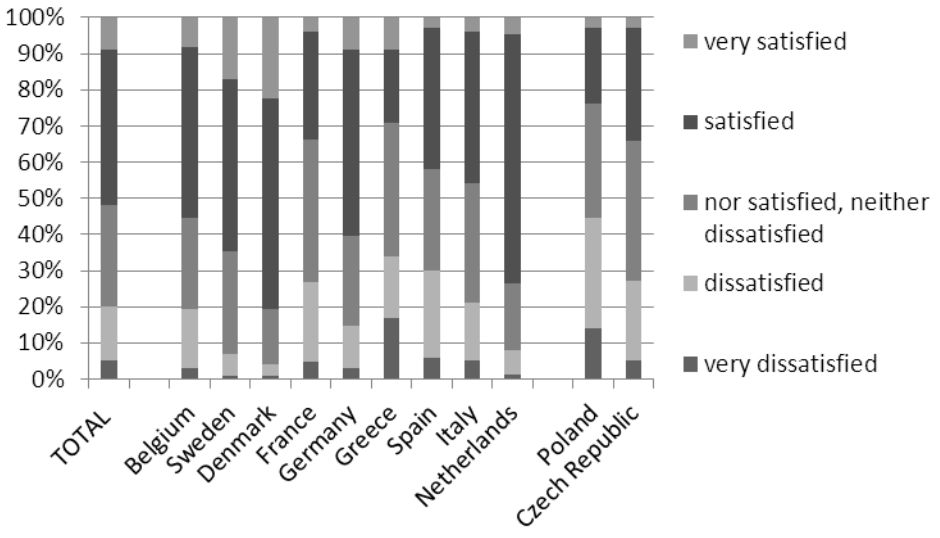
However, dynamic analysis provides more optimistic conclusions. At the beginning of the period (2005) the observed divergence between countries were much higher and were reaching about 20 percentage points. In 2010 it was not more than 10,3%, thus fewer people, both aged less and over 65 years, are exposed to poverty risk in NMS countries. Nonetheless, substantial differences between all European countries are persistent, e.g. at risk of poverty is about 6% of society in Luxembourg and Netherlands and 56% in Bulgaria (Eurostat 2011).

Additionally, some general findings from researches on household income satisfaction among people aged 50 and over can be drawn. This one of the top important component of economic well-being confirms variations between Old and New Member States (Fig. 4). Approximately 7000 older adults were asked in 2006-2007 about the level of satisfaction with the total income of their household (Bonsang, van Soest 2010, p. 6). Generally, more respondents were satisfied and very satisfied with their household income (52%) than dissatisfied and very dissatisfied (20%). About one third of respondents were not conclusive in an evaluation of their income. Considering differences between countries, Poland needs to be pointed out as a country where the biggest share of respondents were dissatisfied and very dissatisfied with the level of their incomes. In this same time, correspondingly, there the lowest percentage of satisfied and very satisfied people was noticed.

The figure (Fig. 4) also shows that Denmark, the Netherlands and Sweden unambiguously ranked in the first, second and third place report the highest income satisfaction. When income satisfaction is compared with monthly

household's net income (corrected for PPP) a strong positive relationship is noticed. Except France, it is common for each investigated state that higher average household income corresponds with higher income satisfaction. In this comparison, Poland and Czech Republic were marked by both the lowest proportion of satisfied and the lowest level of household's net income (Bonsang, van Soest 2010, pp. 6-9). However Poland and Czech Republic were the only two NMS countries, that were included in the described study, thus it does not allow for generalizations. Nevertheless, it is a important finding that disproportions within EU-27 are recognized and older citizens from New Member States are more affected by shortfalls in incomes, compared with EU-15 (see also: Puente 2005, pp. 1-6).

Figure 4. Distribution of reported income satisfaction by country (in %)



Source: (Bonsang, van Soest 2010, pp. 25-26).

Before commenting on the uneconomical elements of older consumer's characteristic, it is worth noting that living arrangements of people aged 64 and over can bring some additional information about differences in living conditions between Old and New Member States. Four situations of living of older people are generally investigated in statistical researches: alone, without a partner but with other people, just with a spouse or a partner, with a spouse or a partner plus other people. It can be said that EU-12 societies are generally more similar to Southern European countries where older people live with others much more often than in Scandinavia and Northern Europe. However,

comparing Old and New Member States as separate groups it is obvious that living with other people is much more accepted in EU-12. Increased values in all categories of common residence with third parties are crucial especially for older widows and widowers or a single in NMS countries, where this ratio is twice the average values of EU-15 countries. Slightly smaller, although still important difference occurs in the case of living with spouses. Lowest differences between two analysed groups of countries are reported in terms of people living alone (*Income and living*...2010, pp. 92-94).

This investigation also highlights the impact of a type of a household and families conditions on customers behaviour of older people. Especially it is related to an autonomy of purchasing decisions or sources and types of opinions about willingness to buy goods and services. More importantly, close connections between older customers and their families lead to abnormalities in the structure of consumption needs, comparing with decision-making and economically sovereign people that are living alone.

Next area of interest in older consumers characteristics is the level of education. Well educated society generates more aware consumers behaviours. The mechanism of that is simple: the higher development stage of society customization of societies gives higher levels of an identification of their needs and possible variations of satisfying them as well as advanced skills of making optimal purchasing skills. As a result – better education creates more demanding customers. Companies and sectors should adopt to new circumstances what can lead to developing new products, advancing of technology, and general improvement of a functioning of markets. Although, much uncertainty remains these conclusions give a sufficient basis to investigate an education level of older people.

Analyzing a percentage of persons with upper secondary and tertiary education attainment, there are no sufficient evidence confirming differences between Old and New Member States. It is true, that to the group of countries with the highest level of well educated older citizens (more than 80% of people aged 55-64 years) belong mostly countries from EU-12, e.g. Baltic States, Czech Republic and Slovakia. The Germany is the only exception. The countries with the lowest level of this indicator are Malta and Portugal (less than 20%). However, taking a closer look gives an opportunity to investigate that a theoretical border lies rather between north and south of Europe or between men and less educated women (*Active ageing*... 2011, pp. 128-132) than between New and Old Member States. General calculations leave no doubt in this regard: 57,9% people aged 55-64 years in EU-15 and 57,0% in EU-12 have upper secondary and tertiary education. More importantly the significant growth of well educated people participation can be observed in Europe. The process is

directly connected with an increasing share of students in younger age cohorts, who are becoming seniors over time (Eurostat 2011).

Higher level of education of European seniors can be also confirmed by a significant increase of Internet users among them. During the last five years (2006-2011) an average proportion of persons aged 55-74 years using Internet at least once per week has doubled in European Union. In most countries every fourth older person joined to silver surfers in this period and in this same time used this communication channel to e-mail correspondence or to find needed news and information. Naturally, the disproportion between the share of Internet users in overall population and people in older age is still high. However, in 2010 year 46% of UE-27 citizens aged 55 to 64 used Internet each week (65% of total population). Large differences are observed comparing these results with values for older age group (65-74 years) where only 25% of people are regular Internet users and 17% use it daily (Eurostat 2011).

Although, the level of education of seniors was comparable in Old and New Member States, dissimilarities in Internet use are highly noticed. On average every second person aged 55 to 74 years in EU-15 is a frequent Internet user. Those countries are characterized by a greater amount of variation – from 11% in Greece to more than 70% in United Kingdom, the Netherlands and Demark. However, silver surfers in countries that joined the EU in 2004 or later are not more than only 26% total older generation (Eurostat 2011). Reasons of the divergence between two groups of member states could be: generally lower level of Internet accessibility for the whole population and/or for the older cohorts, and/or the a lack of appropriate skills in this area. Not considering causes of the described differences there is a need to draw attention to possible results of these tendencies, e.g. dissimilarities in a consumption basket (especially in an area of e-commerce or e-banking), an utilization of Internet to communicate with clients, or a level of development of companies, markets and sectors of economy connected with network activities.

Furthermore, most of older users are assessing that their Internet skills are rather low, however the number of individuals with an average perceived degree of skills is growing (*Active ageing*... 2011, pp. 135-137). These observations should be especially important for Internet services suppliers, e.g. Internet banking or online shops. The growing number of online purchasing seniors and their increasing Internet skills may be an important sign for e-commerce marketers that older people are becoming more attractive group of online consumers. However, the role of older customers is still undervalued in a comparison to their purchasing abilities.

4. The role of older consumers in tourism

One of the core examples of a growing role of older people as consumers is a sector of tourism. General, tourism demands are highly conditioned by economic and political factors, especially when international trips are considered. A popular business myth says that only young people are a valuable target group of tourist services. This approach results in a strong undervaluation of an importance of older people for the whole tourism market.

However the group of older tourists has become a more important part of total holidaymakers in recent years. A lack of sufficient statistical data makes it impossible to conduct dynamic analysis but, data in most countries confirm the growing importance of older people among number of tourists. The highest observed rate of tourists aged 65+ in the number of total tourists was above 24% in Denmark in 2010. It means that every fourth tourist was in his/her retirement age. Denmark is also an example of a dynamic growth of this index – in 2002 it was only 10,5%. An opposite tendency can be indicated in United Kingdom with more than 7% decrease from 24,9% in 2002 year to 17,7% in 2010. In general, in EU-27 the overall trend in tourism market brings a positive correlation between a growing group of older citizens and an increasing share of older tourists.

Having the distinction between Old and New Member States, substantial differences in an older tourist behaviour can be discovered. First to mention are dissimilarities in a share of people aged 65+ in total population of tourists. According to available data for 20 EU countries in 2010, an average percentage of older tourists in EU-15 is almost two times higher (16,6%) than in EU-12 (9,2%). In this last group the highest value (above 15 per cent) was reached in Hungary and the lowest values (4% and less) were noticed in Cyprus and Lithuania. The dispersion between countries described above may be explained both by differences in purchasing power of older people in Old and New Member States as well as by a dissimilarities of consumer habits of an older age group of clients between countries, for example diverse structures of customers baskets. Similar conclusions can be formulated on the basis of statistical data not only related with a number of tourists but also with a number of longer holiday trips (4 or more overnight stays).

Taking into account tourist expenditures, it is clear that average expenses for holiday trips are lower for people aged 65 and over than for total population of tourist. However, dispersion between countries is significant. For instance, in Germany, taking into account an average expenditure for one night during a longer holiday journey, older people spend slightly more than traveller in all ages, but in comparison in Latvia they spend three times less (Tab. 2).

Despite limited availability of data, some general conclusions can be drawn on the basis of data presented in Tab. 2. Average expenses for one night during a holiday trip in Old Member States are higher than in NMS countries. This is true both for all travellers regardless of age. People age 65 and over are even more diverse in their tourist expenditure among two analyzing groups of countries. Those differences result in a greater variation in expenditures of older tourists per holiday trip as a percent of tourism expanses per one night of all travellers. In countries classified as EU-15 older customers are prone to spend more to meet their tourism needs, it goes altogether with generally higher spending on tourism in those countries. Moreover, in spite of the existing disproportions between their expenditures and tourists in all age, the level of their expenses in OMS countries is relatively comparable to population as total. In this group of countries the disproportion between spending of people age 65 and over and all age cohorts on one holiday night was not higher than 20. In contrast, the analysed proportions in New Member States remain. Except Slovenia, older people spent much less for one night of their holiday trip than younger ones (not more than 70% of tourists spending in all ages). Such significant differences must have an impact on tourist markets in every country. Lower expenditures lead to a lack of sufficient economic motivation among entrepreneurs for a dynamic development of new products and services in EU-12.

Table 2. Tourist expenditure per one night of a holiday trip (4 nights and over) of people age 65+ and tourists in all age (in 2010)

Selected countries	Tourist expenditure per night (in 1000 EUR)		Tourist expenditure per night age 65+/total tourists (%)
	Total tourist	Tourist age 65+	
Old Member States			
Germany	0,0687900	0,0688083	100,02%
Spain	0,0413300	0,0329742	79,78%
Luxembourg	0,2264100	0,2089534	92,29%
Netherlands	0,0561319	0,0490319	87,35%
Portugal	0,0408900	0,0328186	80,26%
Sweden	0,0702992	0,0594694	84,59%
New Member States			
Cyprus	0,0704684	0,0481517	68,33%
Latvia	0,0391100	0,0107572	27,50%
Hungary	0,0268707	0,0180143	67,04%
Poland	0,0204596	0,0142761	69,78%
Slovenia	0,0470000	0,0421434	89,66%
Slovakia	0,0517106	0,0278586	53,87%

Source: own calculations based on: (Eurostat 2011).

From a perspective of the aim of this paper, it is important to highlight one more conclusion. Tourism expenditures per night during longer holiday trips in European Union were generally greater in 2010 than in 2005. Own calculations based on available statistical data from Eurostat show that this tendency is irregular at least in two dimensions.

First are differences between countries, where a growth of expenses in New Member States seems to be more dynamic having it compared to EU-15 countries. One possible explanation of this phenomena is the starting point, which was significantly lower in the level. Therefore even a high increase of expenditures still does not allow to reach the level of tourism expenses of OMS countries. But on the other hand, observed differences may be related with a transformation of societies occurring in EU-12 countries. The higher economic development together with an increasing level of education and customer awareness result in changes in consumption baskets in favour of satisfying higher-order needs.

The second dimension of diversity between societies in analyzed area is dynamics of growth of tourism expenditures. For all countries presented in Tab. 2 total tourism expenditures per one holiday night increased on average during years 2005-2010 by 28% and for older tourist by 55% (Eurostat 2011). Such a comparison eliminates an effect of inflation and proves that older people are becoming an increasingly important and an attractive group of buyers of traveller services.

5. Conclusion

The aim of this paper was to investigate main differences between Old and New Member States in characteristics of an ageing of society process and the role of older people as consumers of goods and services.

Countries of EU-12 are classified as a group with the highest expected age pattern changes. It means that these countries have relatively young populations comparing to OMS. However, the dynamics of ageing will have significant impact on the possibility of an economic growth, stability of public finances and on effectiveness of pension systems in NMS countries. An age structure of ageing societies is changing in a direction of increasing participation of older people among citizens. This leads to many challenges on labour market, but also in the process of fulfilling the needs of an ageing societies on goods and services markets.

Differences between Old and New Member States are evident both in specific needs of older consumers and the way of meeting them. In EU-12 older people are generally less aware of their customer's power and are not treated as a attractive group of clients. Significant differences are a result of diversity in a level of economic development and hence substantial disparities in GDP per capita, as well as the levels of disposal income and a structure of a typical basket of goods and services. This conclusion was also confirmed by a survey on European citizens conducted in March 2009. Respondents in countries that joined the EU in 2004 or later are less likely to agree with a statement that the development of products and services responding to the needs of older people will become a key driver of their national economy (*Intergenerational solidarity* 2009, p. 23).

An increasing role of older people as consumers is more visible in EU-15. For instance, tourism sector in Old Member States can be described by much higher expenditures in absolute numbers and in a relation to average expenses of total population. There is a wider offer for that age group of customers. Indicated differences in consumer behaviour e.g. the length of holiday trips or destinations of a travel are derived mainly from their habits. In the future older consumer behaviour, not only in tourism sector but also in other branches, are projected to an evolution in a direction of a homogenisation within the whole European Union.

In addition, it has to be emphasized that New Member States are highly heterogeneous. For example, while Cyprus is often much more similar to other countries from Southern Europe, three Baltic countries manifest convergence as well as Poland, Slovakia or Czech Republic. Cultural, geographical and religious factors have significant meaning in building these similarities. On the other hand, these sub-groups of countries are not constant and their classification significantly depends on an area of conducted analysis. For instance, in Slovenia, Slovakia and Poland, just as in Cyprus and other southern countries, an extended family is still the societal norm. That means e.g. young adults are leaving their family homes late and older people often live with their adult children. In that countries three-generational households are much more typical than in Czech Republic and Hungary where, in contrast, the structure of families has more in common with Nordic countries. In this case economic reasons had the major impact for a countries classification. In future, the growing income in New Member States will have an impact on household structures and living arrangements, which can evolve in similar direction to more economically developed countries (*Income and living*... 2010, pp. 97-98).

Moreover, gender differences should also be included in future analyzes, especially because of strong differences between genders in life expectancy and

higher proportion of women in older population. In consequence, it brings much higher share of widowed elderly women, who are more frequent beneficiaries of medical services and nursing homes. Living and income conditions of older women and men are diverse and result in a substantial incompatibility of a consumer behaviour between men and women.

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Streszczenie

ROLA OSÓB STARSZYCH JAKO KONSUMENTÓW – STUDIUM PORÓWNAWCZE STARYCH I NOWYCH KRAJÓW CZŁONKOWSKICH UNII EUROPEJSKIEJ

Celem opracowania jest zbadanie różnic pomiędzy rolą osób starszych jako konsumentów dóbr i usług w gospodarkach starych i nowych Państwach Członkowskich Unii Europejskiej. Proces starzenia się społeczeństw prowadzi do znacznych zmian w liczbie i strukturze wiekowej konsumentów na poszczególnych rynkach dóbr i usług. Zjawisko to wymaga bliższych rozważań. Podstawową metodą badawczą zastosowaną dla osiągnięcia celu jest statystyczna analiza różnic pomiędzy krajami „piętnastki" i nowymi członkami UE. Rozważania zostały dodatkowo uzupełnione o przegląd najnowszej literatury w dziedzinie zachowań rynkowych starszych konsumentów.

Podstawowe wnioski płynące z dokonanej analizy potwierdzają występowanie istotnych rozbieżności pomiędzy obiema opisywanymi grupami krajów europejskich. Proces starzenia się społeczeństw jest jednym z kluczowych zjawisk demograficznych widocznych we wszystkich krajach europejskich. Generalnie, nowe kraje członkowskie są demograficzne młodsze, jednocześnie są bardziej narażone na wyższą dynamikę zachodzących zmian. Rosnący udział osób starszych w społeczeństwie prowadzi również do zaburzeń funkcjonowania rynków: zmiana struktury wiekowej nabywców, nowe potrzeby i konieczność ich zaspokojenia, adaptacja przedsiębiorstw do nowych warunków. Podkreślenia wymaga również fakt ewolucji potrzeb osób starszych, wynikająca m.in. z rosnącej siły nabywczej, wyższego poziomu wykształcenia oraz większej świadomości rynkowej. Przykładem w tym zakresie może być zachowanie starszych konsumentów na rynku produktów i usług turystycznych, gdzie wykazane zostały znaczne różnice pomiędzy starymi i nowymi Państwami Członkowskimi. Rozbieżności dotyczą w szczególności częstotliwości korzystania z usług turystycznych, długości wyjazdów wakacyjnych oraz poziomu ponoszonych na nie wydatków. Ponadto w opracowaniu wykazano, że osoby starsze stają się nie tylko coraz większą i bardziej znaczącą grupą konsumentów w Europie, ale również bardziej atrakcyjną z punktu widzenia ich zachowań nabywczych.

Studium porównawcze stanowi wkład do bieżącej dyskusji naukowej nad znaczeniem osób starszych dla rozwoju europejskich gospodarek w perspektywie ich roli odgrywanej na rynkach dóbr i usług.

10.2478/v10103-012-0006-x

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The Development of an Information Society and Electronic Commerce in the European Union in the Context of Selected Documents of the EU and International Organisations

Abstract

Due to the rapidly growing use of the Internet, the development of electronic commerce (defined by the World Trade Organization as "the production, distribution, marketing, sale or delivery of goods and services by electronic means"[1]*) has become one of the key aspects of today's sustained growth. It influences productivity, facilitates the international movement of goods and services, and stimulates export and import trade. The European Union, as well as many multinational organisations, is working towards the harmonisation of their rules, and to facilitate and streamline this kind of international exchange.*

In this article, the author presents selected documents on electronic commerce published by the United Nations Commission on International Trade Law, the World Trade Organization, the Organisation for Economic Cooperation and Development, the International Chamber of Commerce and the European Union since 1994.

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[1] WTO, 25.09.1998, Work Programme on Electronic Commerce.

1. Introduction

The emergence and increasingly widespread use of information and telecommunications technology can have a huge influence on economic growth (Feltynowski 2011, p. 57). In turn, the rapidly growing use of the Internet, which we have witnessed since the end of the 1990's, has enabled us to carry out commercial transactions much faster. Electronic commerce has been developing rapidly and has come into prominence very quickly in comparison with other channels of distribution (Czajkowski 2011, p. 67). Electronic commerce has revolutionised the way companies operate and changed the form of contact between them (B2B), and between companies and consumers (B2C). The Internet has reduced the distance between contractors, facilitated the completion of transactions, and enabled an increase in efficiency and a reduction in costs, thereby resulting in greater profitability. In the global economy, electronic commerce plays an increasingly more important role, even in the turbulent times of economic crisis (Czajkowski 2011, p. 64).

The authors of the third edition of the Global Action Plan for Electronic Commerce, prepared in July 2002 by the Alliance for Global Business, state that electronic business (including e-commerce) guarantees sustained economic growth[2]. Moreover, they underline the benefits countries receive from the deployment of information and telecommunications technologies at every stage of their development. They include among other things:

1. Increased efficiency of organisation and management;
2. Increased efficiency of transactions and reduction of transaction costs for buyers and sellers;
3. Broader market coverage and a wider selection of suppliers for both parties;
4. Improved flow of information[3].

Furthermore, the Internet offers lower costs of entering a market and gives the possibility of reaching more markets, whereas electronic commerce facilitates commercial contact between companies and consumers on national, regional and global levels (Wang 2010, p. 6).

Taking the above into account, it is obvious that international organisations and national governments intensively promote the development of electronic commerce and undertake a series of actions aimed at regulating this

[2] Alliance for Global Business, July 2002, A Global Action Plan for Electronic Commerce.

[3] Alliance for Global Business, July 2002, A Global Action Plan for Electronic Commerce.

phenomenon from the legal point of view. This article presents selected as well as the most important documents, which regulate and promote international electronic commerce.

2. United Nations Commission on International Trade Law

On 12 June 1996, the Commission adopted a Model Law on Electronic Commerce, which – in essence – was designed to facilitate the use of modern means of communication and storing information in an electronic form. It provides electronic media with the functional equivalents of expressions from written documents such as writing, signature, original[4]. Additionally, it explains certain issues connected with the compilation of electronic contracts and their legal recognition, as well as with the exchange of electronic information from a broader perspective[5]. The Law does not attempt to define computer equivalents of written documents, but presents the conditions which electronic documents need to meet to be given the same legal status as paper documents fulfilling the same functions[6]. The Law was accompanied by a Guide to Enactment, which defines all the regulations in detail.

Five years later, the same Commission adopted a Model Law on Electronic Signatures, which was to guarantee the increased legal establishment of an electronic signature[7]. The document does not favour any method of electronic signature generation[8] which meets the requirements specified in article 6 thereof. Moreover, it solves the problem of an electronic signature issued in a different country. Article 12 includes regulations which provide for a signature issued in a different country to be effective if it ensures a comparable level of credibility with an electronic signature generated in any given country[9].

On 23 November 2005, the United Nations General Assembly adopted the United Nations Convention on the Use of Electronic Communications in International Contracts (hereinafter referred to as the Convention). Its aim was

[4] UNCITRAL 12.06.1996, Model Law on Electronic Commerce, PART 1, Chapter I, art. 6-8.

[5] UNCITRAL Model Law on Electronic Commerce, PART 1, Chapter III.

[6] Moreno, Carlos, Brief Overview of Selective Legal and Regulatory Issues in Electronic Commerce,, International Symposium on Government and Electronic Commerce Development, Ningbo, China, 23-24.04.2001.

[7] United Nations, UNCITRAL Model Law on Electronic Signatures with Guide to Enactment, New York, 2002.

[8] UNCITRAL Model Law on Electronic Signature, article 3.

[9] UNCITRAL Model Law on Electronic Signature, article 12.

to facilitate international trade by means of eliminating possible legal obstacles and reducing the uncertainty connected with the legal value of electronic communications when compiling and entering into contracts between entities from different countries[10]. In order to increase confidence and trust in electronic contracts, the Convention deals with, among other points, the legal recognition of electronic communications, the requirements regarding forms of communications, the time and place of sending and receiving information in electronic communications, the use of systems for the automatic sending of messages, as well as access to contract provisions. Moreover, the Convention specifies methods of dealing with errors in electronic communications[11].

It is worth noting that the Convention does not apply to electronic communications connected with entering into individual, family or household contracts; neither does it include certain financial markets[12].

In 2009, UNCITRAL published a report entitled "Promoting confidence in electronic commerce: legal issues on international use of electronic authentication and signature methods"[13]. It was prepared as a result of the need to update the regulatory framework in this regard. Previous solutions were in force for more than 10 years, which is a very long time in the fast-changing world of new technology. This report can be treated as a supplementation of both model laws and the Convention.

3. World Trade Organization (WTO)

The declaration on global electronic commerce, adopted at the second Ministerial Conference in Geneva on 20 May 1998, imposed an obligation on the WTO General Council to prepare a work programme (hereinafter referred to as the programme) aimed at exploring all aspects of global electronic commerce development[14]. Moreover, the Declaration included a moratorium,

[10] United Nations Convention on the Use of Electronic Communications in International Contracts, New York, 2007.

[11] United Nations Convention on the Use of Electronic Communications in International Contracts, Chapter III, art. 8-14.

[12] Explanatory note by the UNCITRAL secretariat on the United Nations Convention on the Use of Electronic Communications in International Contracts.

[13] UNICTRAL, Promoting confidence in electronic commerce: legal issues on international use of electronic authentication and signature methods 2007, United Nations, Vienna, 2009.

[14] The Geneva Ministerial Declaration on Global Electronic Commerce, WTO, Geneva, 25 May 1998, WT/MIN(98)/DEC/2 (98-2148).

in which WTO member states undertook to continue the practice of not levying any customs duties on electronic transmissions. The Consul-General approved the programme on 25 September 1998, which triggered a series of discussions on electronic commerce and traditional commerce by the Committee for Trade and Development.

For the purpose of the programme, electronic commerce was defined as "the production, distribution, marketing, sale or delivery of goods and services by electronic means"[15]. Selected organisational units of the WTO were asked to carry out analyses of all aspects connected with electronic commerce. The tasks were divided into four entities that were designed to include in their research the work of other intergovernmental organisations.

The Council for Trade in Services was given the task of anchoring electronic commerce in the General Agreement on Trade in Services (GATS). The issues that were selected to be analysed included among others:

- Most Favoured Nation clause (GATS, article II);
- Transparency (GATS, article III);
- National regulations, standards and recognition (GATS articles VI and VII);
- Competition (GATS, articles VIII and IX);
- Privacy protection and fraud prevention (GATS, article XIV);
- Access to and use of public information and telecommunications services (telecommunications annex); and
- Customs.

The Council for Trade in Goods was ordered to prepare a report on electronic commerce in the light of the General Agreement on Tariffs and Trade (GATT), international trade agreements which meet the conditions of Annex 1A, and the programme. The following issues were examined:

- Access to markets and products connected with electronic commerce;
- The principle of origin;
- Electronic commerce standards;
- Problems arising from the agreement of licence import procedures;

The TRIPS Council focussed on the problems connected with the commercial aspects of intellectual property rights in the context of electronic commerce. The most important included protection of copyright and related rights, protection of trademarks, as well as new technologies and access to them.

[15] WTO, 1998, Work Programme on Electronic Commerce.

Finally, the Committee on Trade and Development dealt with the development of electronic commerce taking into account the economic, financial and developmental needs of developing countries.

During the 4th Ministerial Conference in Doha in 2001, a decision was made to continue the previously approved programme and the decision of not imposing customs duties was renewed. In paragraph 34 of the Declaration adopted on 20 November 2001, emphasis was placed on the current contributions to the research of electronic commerce, which proved that e-commerce provided all member states with numerous benefits, irrespective of their level of economic development. The Council was commissioned to present another report during the 5th Conference in Cancún, Mexico, in 2003[16].

In the declaration from Hong Kong, adopted on 22 December 2005, paragraph 46 acknowledged that the work in the field of electronic commerce was not complete. The ministers agreed to accelerate the work, also in the area of development.

4. Organisation for Economic Cooperation and Development (OECD)

On 7-9 October 1998, a conference of the Organisation for Economic Cooperation and Development (hereinafter referred to as OECD) was held in Ottawa entitled "A World Without Borders: Realising the Potential of Electronic Commerce". For the first time in the history of this type of conference, representatives of member state governments, heads of the most important international organisations, representatives of business, consumers, employees and interested social groups were brought together. The three-day discussion was devoted mainly to the challenges, problems and plans connected with the promotion of global electronic commerce. Four areas of discussion were specified:

- Building trust among users and consumers;
- Establishing the fundamental principles of digital market operations;
- Development of the information infrastructure for electronic commerce; and
- Maximisation of benefits.

[16] WTO, Doha, 20.11.2001, Ministerial Declaration, WT/MIN(01)/DEC/1.

Three documents were submitted during the conference:

- OECD Action Plan for Electronic Commerce adopted by ministers from OECD member states during the conference[17];
- Report on International and Regional Bodies: Activities and Initiatives in Electronic Commerce[18] prepared by twelve international and regional organisations, including WTO, UNCITRAL, EFTA and UNCTAD;
- Global Action Plan for Electronic Commerce[19] Prepared by Business with Recommendations for Governments. BIAC, GIIC, ICC, INTUG and WITSA contributed mostly to its compilation.

Moreover, the ministers adopted three declarations in areas of exceptional importance, which specified the priorities for the years to come:

- The ministers' declaration on the protection of privacy in global networks (SG/EC(98)14/FINAL Annex I);
- The ministers' declaration on consumer protection in the context of electronic commerce (SG/EC(98)14/FINAL Annex II);
- The ministers' declaration on authorisation in electronic commerce (SG/EC(98)14/FINAL Annex III).

On 9 December 1999, the OECD Council adopted the Guidelines for Consumer Protection in the Context of Electronic Commerce (hereinafter referred to as Guidelines 1999). They related to commercial transactions between companies and individual consumers (B2C)[20], and were designed to lead to a situation whereby a consumer who makes a purchase online feels as safe as if they were shopping at a local store. The Guidelines explain a series of issues concerning electronic commerce, such as fair commercial, marketing and advertising practices (part II of Annex), disclosure of information on the Internet – about the entrepreneur (part III A of Annex), about the goods and services offered (part III B of Annex), as well as about the conditions and costs connected with transactions (part III C of Annex). Moreover, the processes of order confirmation, payment and dispute resolution were discussed. In order to ensure execution of the main objective, i.e. guaranteeing the best possible protection of consumers on the Internet, it was established that cooperation

[17] OECD, Ottawa, 1998, OECD Action Plan for Electronic Commerce, SG/EC(98)9/FINAL.

[18] OECD, Ottawa, 1998, Report on International and Regional Bodies: Activities and Initiatives in Electronic Commerce, SG/EC(98)10/FINAL.

[19] OECD, Ottawa, 1998, A Global Action Plan for Electronic Commerce Prepared by Business with Recommendations for Governments, SG/EC(98)11/FINAL.

[20] Recommendation of the Council Concerning Guidelines for Consumer Protection in the Context of Electronic Commerce, OECD, 1999, C(99)184/FINAL.

between governments, companies and consumers, as well as multi-level international cooperation would be needed[21].

In 2003, OECD adopted the Guidelines for Protecting Consumers from Fraudulent and Deceptive Commercial Practices Across Borders[22]. They define the general rules of international cooperation in this scope and include specific regulations concerning notifications, information sharing and help in conducting investigations.

A very important meeting of ministers was held in Seoul on 17-18 June 2008. Leaders of international governmental organisations, business leaders and representatives of the Internet technologies industry took part in the meeting. The whole spectrum of problems connected with the future of the Internet economy was discussed and many significant documents were adopted.

As a part of building trust and confidence to the Internet, the following issues were raised: online identity theft[23], malicious software[24], mobile commerce[25] and protection of critical information infrastructure[26].

Other areas of interest included new technologies, the public sector in the Internet (signatories of the Declaration agreed that public sector information should be available to the public for free or a minimum charge) and digital creations.

The Seoul Declaration for the Future of the Internet Economy[27] was signed, which summarised all the arrangements made during the three-day-long meeting in South Korea. The participants reached an agreement that governments – in order to support competition, promote consumer protection and increase access to the Internet – should cooperate closely with entrepreneurs, technology specialists and Internet users themselves. The Declaration provided a framework for updating policies in the scope of

[21] Recommendation of the Council Concerning Guidelines for Consumer Protection in the Context of Electronic Commerce, OECD, 1999, C(99)184/FINAL.

[22] OECD, 2003, Guidelines for Protecting Consumers from Fraudulent and Deceptive Commercial Practices Across Borders, C(2003)116.

[23] OECD, Seoul, 17-18.06.2008, OECD Policy Guidance on Online Identity Theft.

[24] OECD, Seoul, 17-18.06.2008, Malicious Software (Malware): A Security Threat to the Internet Economy, DSTI/ICCP/REG(2007)5/FINAL.

[25] OECD, Seoul, 17-18.06.2008, OECD Policy Guidance for Addressing Emerging Consumer Protection and Empowerment Issues in Mobile Commerce.

[26] OECD, Seoul, 17-18.06.2008, OECD Recommendation of the Council on the Protection of Critical Information Infrastructure, C(2008)/35.

[27] OECD, Seoul, 18.06.2008, The Seoul Declaration for the Future of the Internet Economy.

telecommunications and contributed to making the Internet a flywheel of the economy. During the last session, Angel Gurría, OECD Secretary-General, said:

"Policies affecting the Internet can no longer be seen as narrow policies only relating to the telecommunications sector, but as mainstream economic policies reflecting the fact that the Internet has become a fundamental economic infrastructure. Given that this infrastructure has become critical to our economies and societies, we should all engage in developing better, more broad-based, management arrangements and policies"[28].

5. European Union

Back in December 1993, the European Commission adopted a document entitled "The White Paper on Growth, Competitiveness and Employment. The Challenges and Ways Forward Into the 21st Century", in which attention was paid to the role of the "digital revolution" and the structural changes caused by it. The authors of the document emphasised that telecommunications technologies and services connected with them could ensure permanent and sustained growth, improve competitiveness, increase employment levels and improve the quality of life of European citizens.

In a report entitled "Europe and the Global Information Society: Bangemann Report Recommendations to the European Council"[29], the authors underlined the need to facilitate the processes of liberalisation together with introduction and maintenance of the freedom of movement principles in accordance with the ideas of a universal service and an internal market.

On 19 July 1994, the European Commission issued a communication to the European Parliament and the Council entitled "Europe's Way to the Information Society. An Action Plan"[30]. The communication included the first drafts of the EU's policy on an information society. It comprised four parts, which were dedicated to the legal frameworks (standardisation, tariffs, privacy, electronic protection, competition and others), networks and applications, social and cultural aspects, as well as promotional activities.

[28] Closing remarks by Angel Gurría, OECD Ministerial Meeting on the Future of the Internet Economy, Seoul, 18.06.2008.

[29] Europe and the Global Information Society: Bangemann Report Recommendations to the European Council, Brussels, 26 May 1994.

[30] Brussels, 19.07.1994, COM(94) 347.

In a communication of 24 July 1996 entitled "The Information Society. From Corfu to Dublin. New priorities"[31], the European Commission verified the previous action plan and determined four new areas to accelerate the development of an information society. Business environment improvement was the major one. The necessity for full liberalisation of telecommunications services beginning from 1 January 1998, creating transparent legal regulations as regards an information society and enabling faster use of telecommunications services by various sectors of the economy was underlined. Building a common market was yet another challenge, without which new products and services could not be used to the fullest. Another important task was to meet the expectations of citizens and respond to their demands concerning, for example, access to a broad spectrum of services and contents.

On 18 April 1997, the European Commission issued a new communication entitled "A European Initiative in the sector of Electronic Commerce" (hereinafter referred to as the Initiative), whose aim was to enable the fast development of electronic commerce in Europe. Its main elements included the promotion of modern information and communications technologies, using a single market to increase competitiveness, and promotion of the skills connected with information and communications technologies.

Another step towards an information society was a communication issued by the European Commission on 8 December 1999 entitled "eEurope: an information society for all". It was a political initiative which was designed to enable the European Union to make full use of the changes taking place in an information society. The main objective of the initiative was to:

a) Introduce each citizen, household, school, enterprise and office to the digital and online era (enable access to the worldwide web);
b) Create a digital Europe supported by an entrepreneurial culture, ready to finance and develop new ideas;
c) Ensure that this process is socially consistent and builds consumers' trust[32].

Less expensive access to the Internet, the introduction of public services online and connecting all schools to the Internet were among the ten points for action that were to help realise these ambitious objectives.

On 8 June 2000, the European Parliament and the Council adopted a Directive on Electronic Commerce[33], which eliminated obstacles in the cross-border provision of online services as well as guaranteeing legal security

[31] Brussels, 24.07.1996, COM(96)395 Final.

[32] available at http://europa.eu/legislation_summaries/information_society/l24221_en.htm.

[33] Directive on Electronic Commerce (2000/31/EC).

to entrepreneurs and consumers. It additionally established the principles concerning transparency, the required information presented by Internet service providers, commercial communications, electronic agreements and the limitations of intermediaries' liability.

The Directive, among other things, imposed an obligation on service providers to clearly present prices of information society services with details as to whether value-added tax or delivery costs have been included or not.

Member states were obliged to implement the statutory as well as executive and administrative regulations necessary to execute the Directive by 17 January 2002.

On 13 March 2001, the Commission published the eEurope 2002 Impact and Priorities Communication[34] programme, in which the contribution of the Europe initiative to the development of a knowledge-based society was described. In the part dedicated to priorities for the future, the need was underlined to continue increasing access to the Internet, along with the need to implement the Directives on Electronic Commerce and Electronic Signature, as well as prepare system regulations for online dispute resolution (ODR).

Helping SMEs to Go Digital[35] Communication issued by the European Commission was a supplementary element to the eEurope 2002 plan, one of the priorities of which was to help small and medium size enterprises (SMEs) with the application of new technologies. The programme was organised around three main axes of action. The first one was connected with the creation of an electronic commerce-friendly environment; the second was dedicated to promoting electronic commerce and its rapid development. Finally, the third area addressed the development of skills within the scope of telecommunications technologies.

On 7 March 2002, the European Parliament and the Council adopted four directives connected with the development of electronic commerce, mentioned in the eEurope 2002 Communication. They were:

- Access Directive[36]
- Framework Directive[37];

[34] Brussels, 13.03.2001, COM(2001) 140 Final.

[35] Brussels, 13.03.2001, COM(2001) 136 Final.

[36] Directive 2002/19/EC of the European Parliament and of the Council on access to, and interconnection of, electronic communications networks and associated facilities.

[37] Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services.

- Authorisation Directive[38];
- Universal Service Directive[39].

On 28 May 2002, the European Commission presented a communication entitled "eEurope 2005 Action Plan: an information society for all[40]", which assumed the quick application of a high level of electronic communications in increasing economic productivity and improving the access of European citizens' to high-quality services. The main objectives included, for example, the introduction of electronic public services, universal broadband access to the Internet and creating a secured information infrastructure.

On 1 May 2005, the Commission proposed a new strategic framework referred to as i2010: European information society by 2010. This proposal supports an open and competitive digital economy as well as underlining the role of telecommunications technologies as a factor responsible for the dynamisation of social integration and improvement of the quality of life[41]. For this purpose, the Commission proposed three new priorities:

a) Completion of creating a uniform European information area;
b) Strengthening innovation and investments in research into ICT;
c) Creating an integrated European information society that will contribute to growth and new jobs in a manner compatible with the principles of sustainable development.

6. The United Nations Conference on Trade and Development

Among many documents published with the authority of the United Nations, a report issued in 2008 on the state of the information economy and recommendations for the future in developing countries is particularly interesting. The Information Economy Report 2007-2008: Science and Technology for Development – the New Paradigm of ICT[42] confirms the enormous influence of information and communications technologies (hereinafter referred to as ICT) on increased productivity, economic growth,

[38] Directive 2002/20/EC of the European Parliament and of the Council on the authorisation of electronic communications networks and services.

[39] Directive 2002/22/EC of the European Parliament and of the Council on universal service and users' rights relating to electronic communications networks and services.

[40] Brussels, 28.05.2002, COM(2002) 263 Final.

[41] Brussels, 01.06.2005, COM(2005) 229 Final.

[42] New York, Geneva, 2007, UNCTAD/STDE/ECB/2007/1.

international trade and better employment, especially in developing countries. However, the authors of the report state that in order to ensure full utilisation of the possibilities guaranteed by new technologies, particularly as regards developing countries, it is necessary to coordinate the operations of their governments as well as regional and international organisations.

The impact of ICT on economic development can be observed on several planes:

a) ICT is deployed in various branches of the economy;
b) Due to ICT, the method of production and consumption organisation changes. Consequently, it leads to lower costs of production and consumption;
c) A fast pace of innovation enables access to ICT also for the less affluent and the poor;
d) New types of services arise due to ICT such as e-commerce, e-finance, e-government. These services can contribute to increased economic effectiveness. However, serious challenges connected with security and trust arise within this field;
e) The application of ICT requires skills and abilities; training and coaching sessions are extremely important in the process of building a knowledge-based economy.

7. Conclusions

The rapid development of technology has changed our way of functioning. It has altered the way companies operate and the habits of consumers. Selling and buying online is becoming a common and universal phenomenon as we speak.

Based on the documents presented in this text, e-commerce plays an important role in the new perception of economic theories. Many documents have been compiled on the basis of research results, which unambiguously show the strong interrelations between electronic commerce development and long-term economic growth in all countries[43], regardless of their degree of development[44]. Moreover, some authors suggest that due to the rapid

[43] New York, Geneva, 2007, UNCTAD/STDE/ECB/2007/1.

[44] WTO, Doha, 20.11.2001, Ministerial Declaration, WT/MIN(01)/DEC/1.

development of digital technologies, electronic commerce in particular, it is possible to talk about a completely new model of global economic growth[45].

Electronic commerce contributes to an increase in effectiveness, competitiveness and employment[46].

From the practical point of view, the enormous commitment of international organisations in the creation of conditions that are conducive to electronic commerce is clearly visible. It mainly concerns the principles of recognizing electronic documents and electronic signatures in international trade. The OECD approved the guidelines for consumer protection in the context of electronic commerce, whereas the European Parliament and the European Commission adopted the Directive on Electronic Commerce.

Many documents include recommendations for the closer cooperation of governments with entrepreneurs and consumers, and on an international level[47]. Other demands relate to the full liberalisation of telecommunications services.

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[45] New York, Geneva, 2007, UNCTAD/STDE/ECB/2007/1.

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Streszczenie

ROZWÓJ SPOŁECZEŃSTWA INFORMACYJNEGO I HANDLU ELEKTRONICZNEGO W UNII EUROPEJSKIEJ W KONTEKŚCIE REGULACJI ORGANIZACJI MIĘDZYNARODOWYCH

W związku z szybko pojawiającymi się nowymi sposobami korzystania z Internetu i rosnącym dostępem do niego na całym świecie, rozwój handlu elektronicznego (zdefiniowanego przez WTO jako "produkcję, dystrybucję, marketing, sprzedaż i dostawę dóbr i usług za pomocą komunikacji elektronicznej) stał się jednym z kluczowych aspektów zrównoważonego wzrostu. Handel elektroniczny wpływa na produktywność, ułatwia międzynarodowy przepływ dóbr i usług oraz stymuluje eksport i import tychże. Unia Europejska i wiele organizacji międzynarodowych od wielu lat pracują nad harmonizacją prawa dotyczącego handlu elektronicznego oraz nad pobudzeniem i usprawnieniem tego typu wymiany międzynarodowej.

W niniejszym artykule autor prezentuje wybrane dokumenty dotyczące handlu elektronicznego opublikowane przez Komisję ONZ ds. Prawa Handlu Międzynarodowego, Światową Organizację Handlu OECD, Międzynarodową Izbę Handlu oraz Unię Europejską od roku 1994.

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