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European Union Entrepreneurship and Innovativeness Support Policy for Businesses

Abstract

The development of entrepreneurship as well as research and innovation have direct impact on growth in the level of economic development as well as the prosperity of individual citizens and society in general. The primary goal of policies involving research and technological development is establishing the European Union as a leading knowledge–based economy. Innovativeness is also the main factor in improving the competitiveness of companies.

The key to improving the economic situation in Poland is the strengthening of innovative attitudes among entrepreneurs. An efficiently running institutional system guaranteeing effective support instruments for entrepreneurs and the scientific–research sphere as well as guaranteeing the unhindered transfer of knowledge should prove helpful.

As the main factor in improving the competitiveness of companies, innovativeness is mainly the result of the development of collaboration between the spheres of science and business as well as the use of patent achievements in companies.

The drive behind future growth in the European Union will be sectors based on knowledge and innovation. However, these require a solid industrial network and resources allowing the utilization of new technologies.

To a great extent, growth in entrepreneurship and innovativeness as significant factors in the economic development of Europe and Poland is dependent on the elimination of administrative barriers for companies and the introduction of the facilitating of information and communication (ICT) as needed for them to function.

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1. Introduction

The development of entrepreneurship as well as research and innovation have direct impact on growth in the level of economic development as well as the prosperity of individual citizens and society in general. The primary goal of policies involving research and technological development is establishing the European Union as a leading knowledge–based economy. Innovativeness is also the main factor in improving the competitiveness of companies.

2. Policies Aimed at Small and Medium Enterprises (SMEs) and Their Internationalization and Growth in Competitiveness and Innovativeness

The SME sector provides employment for approximately 66% of professionally active people in the European Union. Its turnover accounts for approximately 55% of the turnover of all companies operating on the European Internal Market. On average, approximately two million new companies are established each year in the European Union, which creates approximately one million new jobs annually. Most of the newly registered companies are one–man operations. The dynamics of the creation of new companies exceeds that of the withdrawal from the market of small businesses by approximately 6%. Although the typical company in the European Union employs an average of six people, major companies, usually transnational corporations, have an average employment of 1,035 workers. However, companies employing less than ten workers are dominant on the Internal Market, which means that none–tenth may be ranked as micro–businesses. Of these, almost 50% are one–man companies in which only the company owner works. Companies consisting of only one worker make up approximately eight million Community businesses. The share of employment in small companies varies by individual Member States and ranges from almost 60% in Greece through approximately 48% in Italy and Spain, to just over 20% in Ireland, Finland, Luxembourg, and Germany.

Micro–businesses employing up to ten workers account for almost 90% of the total number of 19.4 million companies in the private sector registered in the European Union. Companies of this size provide jobs for over 38 million people. The average micro–business employs two people. The smallest companies mainly dominate industries such as housing construction, the retail trade, and

hotel as well as restaurant services[1]. Small companies employing from ten to forty–nine workers provide employment for approximately one–fifth of all people employed within the territory of the European Union. There are over one million small companies that employ an average of twenty workers. Companies of this size mainly dominate in metalworking, clothing manufacturing, the leather industry, and wholesale trading.

There are approximately 165,000 companies registered within the territory of the European Community that qualify as being medium–sized. They make up just under 1% of the total number of companies. They provide employment for over 15 million people, where the average medium–sized company employs approximately ninety people. Most of them are active in the manufacturing sector, with the exception of countries such as the Netherlands and Luxembourg, where they dominate in services.

Studies on newly registered companies have demonstrated that 80%–90% of them launch operations employing a maximum of one worker. Almost 80% of the newly started up economic entities continue to be in operation after one year. After three years 65% are still on the market, but only 50% after the elapse of five years. Moreover, attention has been called to a certain regularity: Companies employing at least one worker upon start up have significantly greater chances of survival as compared with those in which only the owner is involved. In line with characteristics culled from European Union statistics, the average entrepreneur establishing a company is thirty–five to forty years of age. Persons with a college education prefer commerce and services, while those with secondary or primary education establish manufacturing companies or render construction services. An owner's prior experience in the field of management has great significance for the potential success of the company.

A key task facing European Union policy with respect to the SME sector is assistance for companies in surviving significant competitive pressure on the European Internal Market and the guaranteeing of an opportunity for company development on the global market as well as in its taking advantage of opportunities and potential in connection with the globalization of the economy.

[1] Wysokińska Z. and Witkowska J., *Integracja Europejska. Europeizacja polityki ekonomiczno–społecznej i umiędzynarodowienie rynków* [European integration: The Europeanization of economic–social policy and the internationalization of markets], PWN, Warsaw, 2010, pp. 30–31.

3. Growth in the Competitiveness of the SME Sector

Growth in the competitiveness of SMEs is chiefly identified with an increase in the productivity of the resources they use. Businesses are competitive when they achieve sustained growth in labor productivity as well as in the whole range of production factors. This also allows them to lower the unit costs of their own production as well as influence other companies on a national and international level. Growth in productivity facilitates the financing of company plans for expansion. Citizens benefit from better and cheaper market products in the short term as well as increased employment in the medium term. This also makes it possible to achieve sustained growth in real salaries. As a result of achieving sustained growth in productivity (productivity on a macro scale), the standard of living in the country improves. Thus, the company plays a basic role in generating income and employment, and has a part in enduring and sustainable economic and social development.

Growth in productivity is dependent on several factors, primarily on ones such as innovation and investment in the information and communication technology sector (ICT) and in the development of human capital. Educated workers are the basis for growth in productivity. Human capital, especially in the technological sector, plays a role in the growth of productivity in both the accumulation of knowledge and in its dissemination. Knowledge and the ability to use it effectively are the key to a competitive company. It is purposeful to develop and implement actions that make sure the people of Europe are provided with sufficient knowledge, relevant strategies, and practical methods for accelerating education for all[2].

Thus, growth in productivity is both prerequisite for the improvement of the competitiveness of companies and the economy as a whole, and for the achievement by that economy of sustainable social and economic development[3].

4. The Industrial Competitiveness of the Enterprises of the European Union

Looking back at longer–term changes in the industrial structures of the Member States over the years 1999–2007, industries have followed different

[2] "Making a European Area of Lifelong Learning a Reality," Communication from the Commission to the European Parliament and the Council, COM (2001) 678 final, November 21, 2001.

[3] Council and the European Parliament, Commission of the European Communities, Brussels, May 21, 2002, p. 4.

paths towards higher technology or higher skills that tend to have higher productivity growth. Moreover, their prices have suffered less from global competition. For analytical purposes, the industrial structures of the Member States can be looked at on the basis of similarities in character and trade trends. However, this can still mask substantial differences within each group.

In the **first group** of countries, the industrial structure is dominated by technologically advanced sectors. A key development over this period was the specialization of this group in technology–driven industries and sectors with high innovation or high education intensity, which increased further. The countries in this group are Austria, Belgium, Denmark, Finland, France, Germany, Ireland, the Netherlands, Sweden, and the United Kingdom. The value added contribution of industry varies from 10.6% in France to 24.2% in Ireland.

The **second group** includes countries with industry specialization in less technologically advanced sectors. This is in spite of the presence of some highly competitive industries. The prevalence of labor intensive industries, low innovation, and relatively low knowledge intensity leads to fewer high–growth companies, at least compared with the first group of countries. The countries in this group are Cyprus, Greece, Italy, Luxembourg, Portugal, and Spain, with industry value added varying from 6.5% in Luxembourg to 16.1% in Italy.

The **third group** consists of countries that are catching up in terms of GDP per capita, and whose trade specialization is in high–innovation intensity sectors and technology driven industries. They have achieved a structural change from labor–intensive industries towards technology–driven industries in both production and trade. The group consists of the Czech Republic, Hungary, Malta, **Poland**, Slovakia, and Slovenia, with industry value added between 13.3% and 23.6% of the total.

The **fourth group** of countries encompasses those that are catching up, but with trade specialization in technologically less advanced sectors. These countries resemble those of the second group with which they also share a trend towards sectors with higher educational intensity. However, a major difference is the much stronger than average presence of high–growth firms in this group and the large increase in industry and trade specialization in technology–driven industries. This group consists of Bulgaria, Estonia, Latvia, Lithuania, and Romania, with industry value added between 9.9% and 22.4%.

There are competitive industries and growing companies within each group of countries. It is necessary to move towards innovative, knowledge–based sectors and to take decisive actions to facilitate change by improving

product market regulation, support innovation, and invest in education and training throughout on a lifelong basis—all necessary to boost competitiveness[4].

5. Supporting the Improvement of SME Competitiveness on the European Internal Market

Awareness of a need to provide policies aimed at the development of SMEs in the European Community came about together with the coming into effect of the program for the building of the Internal Market. Bringing this program to life was both an opportunity and a threat to small and medium enterprises. The opportunities came about thanks to the elimination of barriers through the establishing of four basic freedoms and the potential to operate on a large market. Threats stemmed from the increased competitive pressure that small and medium enterprises were less capable meeting than major companies. The *Action Program for Small and Medium Sized Enterprises* was approved in 1986. This is seen as the start of policy aimed at SMEs[5]. The year 1989 saw the creation within the structures of the Commission of a new general directorate (XXIII) tasked with action aimed at small and medium enterprises. It is concerned with the development and implementation of multiannual action programs for SMEs. The Concentrated Action project was launched in 1995 and is an element of the Integrated Program for Small and Medium–Sized Enterprises and the Craft Sector. Over successive years, the Third Multiannual Program (1997–2000), which targeted the maximizing of the potential of SMEs in employment, growth, and competitiveness, introduced the following instruments and actions:

- Simplification and improved efficiency of action in the administrative and regulatory sphere,
- Improvement in the financial conditions for company operation,
- Assistance for small and medium enterprises in the process of internationalization of their action strategies (the development of information services),

[4] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Industrial Policy: Reinforcing Competitiveness, European Commission, Brussels, October 14, 2011; COM(2011) 642 final; pp.4–5.

[5] COM (86) 445 J. O. CE C287 of November 14, 1986, as cited in Enterprise Policy in the European Economic Community, Commission of the European Communities, Brussels, 1990, p. 3.

- Increasing the competitiveness of SMEs as well as improving access to the results of scientific research, innovative achievements, and training programs, and
- The promotion of entrepreneurship.

The year 1999 saw the appearance of the European Commission Report evaluating the preliminary results of integrated actions, indicating a need for their continuation. At its summit in Feira in June of 2000, the Council of Europe approved the *European Charter for Small Enterprises*. In it, it calls on Member States and the Commission to take action in support of small businesses[6]. It is the view of the Commission that this Charter is a pillar of European Union policy aimed at entrepreneurship and the core of national policies of the Member States with respect to enterprises[7]. The Council approved the Multiannual Program for Enterprise and Entrepreneurship in December of 2000. It is particularly aimed at small and medium enterprises and encompasses the years 2001–2005[8].

The Lisbon Strategy[9] raised the development of entrepreneurship based on deregulation, the elimination of administrative barriers and bureaucratic impediments, better access to capital and technology, and the creation of uniform rules of competition for companies active on the European Internal Market to the rank of a basic strategic instrument in the European Union up to the year 2010.

Companies in the European Union are offered a series of instruments supporting their competitiveness, including outside the European Internal Market. It is especially SMEs investing abroad, exporting and importing, operating within the framework of the "network of company ties" being created at home and abroad, as well as institutions making up the business environment that provide specialized information and inexpensive services for companies operating abroad that can benefit from financial assistance and support programs[10].

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[6] The European Charter for Small Enterprises, www.europa.eu.int

[7] OECD Small and Medium Enterprise Outlook, OECD, Paris, 2002, p. 222.

[8] More on this topic in Z. Wysokińska and J. Witkowska, *Integracja Europejska. Dostosowania w Polsce w dziedzinie polityk* [European integration: Adaptation in Poland in the area of policies], PWE, Warsaw, 2004.

[9] Lisbon Strategy, http://europa.eu.int/comm/lisbon_strategy/intro_en.html

[10] Summary Report: The Public Debate following the Green Paper "Entrepreneurship in Europe," Commission of the European Communities, Brussels, October 19, 2003, www.europa.eu.int

Benchmarking—a program for comparisons among companies—has become the core of activities aimed at developing good examples (Best Practice) supporting the operations of SMEs. The experience of many countries demonstrates that the effect of disseminating benchmarking is not only an improvement in the condition of companies implementing various techniques intended to improve productivity, but also the overall improvement in productivity on a scale encompassing the entire national economy. Acquiring data for comparative purposes is very difficult, however. This is an area occupied by specialized consulting companies that have their own databases to which they provide access for a fee as a part of their advisory services.

The Lisbon Strategy of 2000 gave new impetus to policies aimed at companies. A new strategic goal for the European Union—intent on becoming the most competitive and dynamic economy of the world economy, knowledge based, capable of enduring and sustainable development, with a greater number of better jobs as well as greater social cohesion—has been formulated. The achievement of a so–formulated strategic goal is not possible without the creation of conditions fostering the development of companies, including small and medium enterprises.

European Union policy with respect to companies is addressed to the whole of the business environment. Its overall objectives are[11]:

- Promoting entrepreneurship and encouraging innovation,
- Strengthening commercial and regulatory conditions fostering the development of business and innovation,
- Eliminating administrative barriers for companies,
- Strengthening company competitiveness in a knowledge–based economy as well as improving the financial environment for business,
- Promoting collaboration among companies and the guaranteeing of support for business as well as services for business,
- Improving market access and the utilization by companies of the potential of the Internal Market as well as possibilities for operations on third party country markets, and
- Promoting better utilization of provided services.

The European Union applies a whole series of instruments in order to achieve these aims. The center of gravity is being shifted from direct action to new ways of coordinating national policies and new initiatives in the realm of support for enterprises as well as measurements of their impact. Member States

[11] Towards Enterprise Europe: Work Program for Enterprise Policy 2000–2005, Activities of the European Union, www.europa.eu.int

are encouraged to exchange their experiences, to mutually learn from each other, and to disseminate best practice. Procedures such as the Business Environment Simplification Task Force (BEST) are used in conjunction with prior actions and incorporate benchmarking, seminars, conferences, and policy overviews. These procedures are supported by statistical work, research, and analyses. Together, they are to help the European Union and Member States to adapt their policies aimed at companies to meet the requirements of the European Internal Market.

6. The European Strategy for Scientific Research and Innovation in the Field of Information and Communication Technology in the Perspective Period up to the Year 2020

The European Commission commenced public consultations in search of a better strategy for strengthening the role of Europe in scientific research and innovation in the field of information and communication technologies (ICT) over the upcoming ten years. The opinions of representatives of the sector, experts in the field of ICT, political decision–makers, and the public at large shall be taken into account in the new strategy on scientific research and innovation in the field of ICT, which shall be presented next year. The goal of the strategy is to make it possible for the European ICT sector, especially small and medium enterprises, to take up a leading position in the race aimed at guaranteeing worldwide competitiveness. Information and communication technologies are the driving force behind innovation and development in the world economy. It is for this reason that Europe is interested in attracting investment in scientific research and the development of these technologies as well as the best scientists and ideas. It is also facing challenges in the realm of energy, health, and the aging of society, which can only be met by applying solutions in the area of information and communication technologies. The launching of consultations is a first step in the development of an integrated strategy for scientific research and innovation in the ICT sector. Europe's poor results, especially in terms of level and intensity of investment in research and innovation, where the world's developed economies devote 33% of their research and innovation on information and communication technologies, while the figure for Europe is less than 25%, is primarily caused by its significant fragmentation. Moreover, the European Union accounts for 32% of the world's ICT market, but European companies have captured only 22% of that world

market[12]. Thus, investment in information and communication technologies is of prime importance in increasing the innovativeness of companies, economic growth, improvement in competitiveness, curbing administrative formalities, and the creation of new jobs.

In certain fields, especially those where ICT brings with its major social benefits, structural barriers may make entering the market of solutions utilizing revolutionary technologies impossible. Such barriers must be eliminated on regional, national, and European Union levels. It is for this reason that the Commission is implementing programs supporting the utilization of the innovative gains of information and communication technologies by small and large European companies.

The goal of the program for support of this technology (ICT PSP, 2007–2013), whose budget amounts to EUR 728 million, is the support of innovation and competitiveness through the dissemination of the most effective use of ICT by citizens, state administration, and companies. It is an element of a broader framework program of the European Commission in the area of competitiveness and innovation—the Competitiveness and Innovation Framework Program 2007–2013 (CIP).

The ICT PSP is based on the experience of an earlier program—e–TEN—which was concluded in 2006. e–TEN was a program supporting the development of electronic trans–European services in the public interest. The program was aimed at accelerating the undertaking of services intended to make permanent the European social model for the achievement of greater social and economic cohesiveness. This program encompassed six topics—e–Government, e–Health, e–Inclusion, e–Education, Services for SMEs, and Trust and Security.

The e–Contentplus (2005–2008), whose budget amounted to EUR 149 million, is intended to eliminate organizational barriers and promote the use of novel technical solutions in order to raise the level of accessibility of digital content in the multi–lingual environment. The program is a continuation of the e–Content program. It is primarily applied to specific market areas where progress is slow—i.e. the public sector (in its geographical layout), with respect to the educational sector, and the creation of electronic libraries with cultural, scientific, and academic input[13].

Competitiveness and Innovation Framework Program (CIP)

Research on the relation between competitiveness and innovation indicates the key role of innovation in sustaining competitiveness. Of prime

[12]http://europa.eu/rapid/pressReleasesAction.do?reference=IP/08/1287&format=HTML&aged=0&language=PL&guiLanguage=en

[13] http://ec.europa.eu/information_society/tl/research/innov/index_pl.htm

importance in this case is technological competitiveness, but so is the capacity to compete in the distribution of goods[14].

The Competitiveness and Innovation Framework Program (CIP) supports innovative activities (including environmental innovation) and guarantees better access to financing and business support in the regions while using information and communication technologies as well as creating better possibilities for the building of a communication society. It is also aimed at promoting growth in renewable energy and energy efficiency.

CIP Operational Programs

- The Entrepreneurship and Innovation Program (EIP),
- The Information Communication Technologies Policy Support Program (ICT–PSP), and
- The Intelligent Energy Europe Program (IEE)[15].

The CIP budget for the years 2007–2013 amounts to EUR 3.621 billion. The program has been divided into three operational sub–programs where each one has its specific tasks aimed at improved company competitiveness and the building of their ability for innovations in various areas, especially including information and communication technologies (ICT) and sustainable energy. The budget is subdivided as follows: 60% of the budget is earmarked for the Entrepreneurship and Innovation Program (EIP), of which 20% is allocated for the promotion of environmental innovation. The Information Communication Technologies Policy Support Program and Intelligent Energy Europe Program are assigned 20% each out of the budget.

The Entrepreneurship and Innovation Program (EIP)

The Entrepreneurship and Innovation Program (EIP) supports small and medium enterprises (SMEs) in the European Union in the area of:

- Access to financing in various phases of company activity that target investment, technological development, environmental investment, technology transfer, and company transnational activities,
- Business services rendered by the Enterprise Europe Network in the area of support for company competitiveness,
- Improvement in innovation policy involving support for the building of networks of various market participants and commercial partners, and incorporating innovative practices such as benchmarking and best practice,

[14] More in Wysokińska Z., *Konkurencyjność w międzynarodowym i globalnym handlu technologiami* [Competitiveness in international and global technology trading], PWN, Warsaw, 2001, I and II.

[15] http://ec.europa.eu/cip/index_en.htm

- Environmental innovation involving support for pilot projects and projects targeting the market for testing conditions for innovative products, processes, and services that are not fully marketable due to high risk, but are aimed at significant effects in improving the state of the environment and the prevention of pollution, and play a role in the better use of natural resources, and
- Support for innovation and policies targeting SMEs through contracts and grants (including analytical work, expert reports, and research into defined sectors of industry) as well as recommendations for policies with respect to SMEs in order to achieve increased cooperation among European Union Member States[16].

The Information and Communication Technologies Policy Support Program (ICT–PSP)

The objectives of this program are primarily aimed at pilot schemes for companies, especially for SMEs[17], taking into account innovative ICT technologies directed at overcoming the absence of interoperability and market fragmentation, especially in such sectors as:

- ICT for "health," the "aging of society," and for inclusion,
- Digital libraries,
- ICT for improving public services,
- ICT for energy efficiency and the mobility of intelligence and knowledge, and
- Multi–lingual Web pages and the evolution of the Internet.

There is also a striving to monitor the Information Society through benchmarking, analyses, and improving awareness.

The Intelligent Energy Europe Program (IEE)

The objective of this program is to support projects aimed at research into climate change as well as procure energy and improve energy efficiency. This program supports concrete projects, initiatives, and best practice within the framework of annual competitions.

Examples of projects financed within the framework of this program are:

- Training in the field of new construction technologies that can provide up to 50% in energy savings as compared with conventional building construction,
- Improved effectiveness of support plans for electrical networks built on the basis of renewable energy sources in Europe, and

[16] http://ec.europa.eu/cip/eip/index_en.htm

[17] http://ec.europa.eu/cip/ict-psp/index_en.htm

- Support for cities in Europe in developing a more energy–efficient and clean transportation system[18].

The Competitiveness and Innovation Framework Program (CIP) is tied with other European Union programs and initiatives in the field of research, education, cohesion, environment, and training. This is especially true of the 7th Framework Program for Research and Technological Development(FP7–RTD).

7. Support for Innovativeness and Increased Competitiveness in Programs for Reforming Higher Education in Europe

The European Commission announced the year 2009 the European Year of Creativity and Innovation in order to call attention to the two most importance factors playing a role in increasing the long–term competitiveness of the European economy[19].

The locomotive behind future growth in the European Union shall be sectors based on knowledge and innovation that require a solid industrial network and resources allowing for the utilization of new technologies.

This means that it is vital to decrease the distance between the academic community and the world of business so that good ideas developed in laboratories can be reborn as world–class products.

The European Institute of Innovation and Technology is playing a role in this by creating "communities of knowledge and innovation"—strongly integrated public–private networks for collaboration among universities, research organizations, and companies, regardless of size.

European Union Strategic Documents Identifying Directions of Reform in Europe's Colleges

The Bologna Process initiated a new phase in internationalizing higher education in Europe through a clear establishing of tasks related to the need for structural reform in this sector, especially the reform of curricula and an improvement in the quality of education[20].

[18] http://ec.europa.eu/cip/iee/index_en.htm

[19] http://www.create2009.europa.eu/

[20] Internationalization of European Higher Education: An EUA/ACA Handbook, RAABE – Dr. Josef RaabeVerlag, 2009, pp. 18–19.

Reform of the Management of Colleges in Europe

Reform of higher education in Europe, which boasts over 4,000 colleges teaching approximately 20 million students and employing 1.5 million staff[21], is based on three main pillars:

- **Curricula reform** within the framework of a three–level system—i.e. Bachelor's (engineering), Master's, and Doctoral level studies as stemming from the Bologna Process, with greater flexibility in possibilities to choose an educational path, recognition of diplomas, and greater mobility of students and academic teachers.
- **College management reform** based on the autonomy of universities, strategic partnership, including aimed at greater collaboration with companies, and the evaluation of the quality of education with the purpose of improving it, while simultaneously increasing the openness of universities throughout Europe to students from other countries—European as well as countries in other regions of the world.
- **Financial reform** aimed at seeking out diverse sources for attracting funding targeting improvement in competitiveness and efficiency, and stronger links between revenues and effects, including revenues from tuition, entry fees, grants, and loans.

One of the basic instruments for implementing the objective of the reform of higher education in the European Union is the Lifelong Learning Program (LLP)[22]. The European Union has designated approximately EUR 7 billion for actions making possible learning throughout the whole of life. Primarily, it will be the implementation of the following programs that will make this possible:

- **Leonardo da Vinci:** Professional training, especially internship programs for young staff members and trainers with companies outside their home country and projects involving collaboration between institutions providing professional training and companies.
- **Erasmus**: Student mobility and collaboration among universities. From the start of its operations (1987), a total of 1.5 million students have participated in the Erasmus program. Furthermore, within the framework of the recently created **Erasmus Mundus** program, post–graduate students and scientific staff from the whole world can receive a Master's degree through studies organized by a syndicate of at least three European universities. The

[21] http://ec.europa.eu/education/lifelong-learning-policy/doc62_en.htm

[22] http://eacea.ec.europa.eu/llp/index_en.php

Tempus program is aimed at developing cooperation with neighboring countries in order to develop strong cooperation with the European Union.

There are successive program providing resources. **Grundtvig** finances educational projects catering to adults, especially in the area of international partnership, networks of cooperation, and the mobility of students and staff. **Comenius**, for its part, provides funds for collaboration among schools and the teachers working in them.

Financial resources have also been earmarked for the support of cooperation in the area of molding educational policy as well as for the study of foreign languages, e–learning, and the dissemination and exchange of best practice.

The reform of curricula is intended to adapt them to the needs of the modern world, taking into account the needs of economic practice, including companies striving to increase their international competitiveness, where colleges should also have their significant share (Bache 2006, p. 234).

Colleges fill a triple role. They serve as centers for both teaching on the highest level and for advanced research, as well as breakthrough innovation. They are a key element of the knowledge triangle in Europe. They have the potential to be the main driving force for realizing Europe's ambition of becoming a world scale economic leader and a society based on knowledge. This is taken into account in the shaping of European Union policy as of the summit at Hampton Court in October of 2005. However, at the same time, the implementation of this potential clearly requires the conducting of certain changes. The Communication from the Commission "Delivering on the Modernization Agenda for Universities – Education, Research and Innovation" of May of 2006 identifies nine recommendations, presented below, to accelerate the building of universities based on knowledge:

- Boost the proportion of students spending at least one semester abroad or in industry,
- Allow students to make use of loans and grants for study or do research,
- Bring procedures for the recognition of academic qualifications in line with diplomas and make European degrees more easily recognized outside Europe,
- Introduce training in intellectual property management, communication, networking, entrepreneurship and teamwork as part of a research career,
- Refocus courses and programs to allow greater participation at later stages of the life–cycle, thereby addressing the skill needs of Europe's workforce, and ensuring that universities are able to adapt to Europe's ageing population,

- Review national student tuition and support schemes so that the best students can participate in higher education and further research careers whatever their economic status,
- Review systems for funding universities so they are more focused on outputs and give universities more responsibility for their own long–term financial sustainability, particularly in research,
- Allow universities greater autonomy and accountability, so that they can respond quickly to change, which could include revising curricula to adapt to new developments, the building closer links among disciplines, and focusing on overall research areas domains (e.g. renewable energy, nanotechnology) rather than disciplines,
- Include more autonomy at individual institution level for choosing teaching and research staff[23].

A successive step aimed at indicating the need for the development of collaboration between colleges and business was the organizing by the European Commission of the University–Business Forum—European platforms for dialogue between the higher education and business communities. The first meeting of the Forum took place in February of 2008. Its continuation was the organization during that same year of three thematic workshop sessions. The second plenary meeting of the Forum in February of 2009 gathered together over 400 participants. In addition to workshops covering the individual topics it included a summing up of conclusions and a discussion on possible directions of the work of the Forum in the future, especially on the adapting of new curricula to meet the needs of the labor market as well as improving academic entrepreneurship of students and staff[24]. It also stressed that representatives of people studying, companies, and society as a whole should be present in accreditation agencies[25]. In an effort to provide training in increasing entrepreneurship, colleges should involve business—e.g. by creating visiting professor positions for prominent entrepreneurs. Professors and teachers should

[23] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/592&format=HTML&aged=0&language=EN&guiLanguage=fr; also compare with Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, "A New Partnership for the Modernization of Universities: The EU Forum for University Business Dialogue," COM(2009) 158 final, April 2, 2009.

[24] Ibid., pp. 3–4.

[25] Ibid., pp. 4–5.

simultaneously have access to training in teaching in entrepreneurship and an opening up to the business world[26].

The European Commission announced the year 2009 the European Year of Creativity and Innovation in order to call attention to the two most importance factors playing a role in increasing the long–term competitiveness of the European economy[27].

The locomotive behind future growth in the European Union shall be sectors based on knowledge and innovation that require a solid industrial network and resources allowing for the utilization of new technologies.

This means that it is vital to decrease the distance between the academic community and the world of business so that good ideas developed in laboratories can be reborn as world–class products.

The European Institute of Innovation and Technology is playing a role in this by creating "communities of knowledge and innovation"—strongly integrated public–private networks for collaboration among universities, research organizations, and companies, regardless of size.

Assistance for Small Enterprises

Although most people associate the term *company* with an international corporation, the fact is that almost all companies in the European Union (92%) are small companies employing less than ten people.

It is obvious that it is this kind of company that guarantees two–thirds of all jobs in the European Union and is deserving of special attention on the part of European Union programs and funds supporting companies such as:

- The program in the field of competitiveness and innovation with a budget of EUR 3.6 billion for the years 2007–2013, which is primarily designated for the rational utilization of energy, renewable energy sources, and information and communication technologies.
- The FP7, the main European Union program for financing scientific research (implemented by collected and companies) with a budget amounting to EUR 7 billion per annum[28].

The goal of such action is the promotion of entrepreneurship and raising qualifications, improving the access of SMEs to markets, and facilitating the development of their capacity in the area of research and innovation.

[26] See paragraph 2 and 3 of the working document of Commission service staff, the "Global Entrepreneurship Monitor Report 2007," which demonstrates that the entrepreneurship indicator for China is two to five time greater than for the countries of the European Union.

[27] http://www.create2009.europa.eu/

[28] http://cordis.europa.eu/fp7/home_pl.html

Small companies that need information and advice can find them through the Enterprise Europe Network. It consists of approximately 500 information centers throughout the European Union that are partially financed out of European Union resources. The European Union is striving to curb formalities required in taking care of business matters.

The European Commission is planning to oversee an appropriate balance between the need for regulations (thanks to which markets will stay open and consumers, the environment, workers, etc. will be protected) and restrictions that stem from them for businesses. For the moment, this balance has been disrupted. This is why the European Commission is planning to curb administrative burdens by one–quarter by the year 2012[29].

8. Entrepreneurship and Innovativeness Support Policy in Poland

Compared with other European countries, Poland is one of the least innovative economies. Poland has been ranked as a moderate innovator in the European Union table of results in the area of research and innovation in 2012. Specifically, it is characterized by a relatively low share of innovative companies as well as business outlay on research and development. In terms of share of graduates majoring in the sciences and technology, Poland is average for the European Union[30].

Overall, Polish companies rarely base their business strategies on innovation in spite of the fact that the level of investment in innovation is growing. Instead, they tend to concentrate on short–term investments in new machines and equipment. In part, this is caused by low absorptive capacity and a lack of any long–term vision among entrepreneurs, especially in the SME sector. This situation is also the result of frequent changes and uncertainty as to the legal framework working to dissuade companies from a more strategic approach to planning.

Recently, Poland has conducted comprehensive reforms in the scientific and higher learning sector. The objective was to stimulate research and innovation as well as to improve the functioning of the system of higher

[29] http://europa.eu/pol/enter/index_pl.htm

[30] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Industrial Policy: Reinforcing Competitiveness, European Commission, Brussels, October 14, 2011, COM(2011) 642 final, pp. 4–5.; compare also Overview of Competitiveness in 27 Member States, MEMO/11/702; Brussels, October 14, 2011, pp. 1–3.

learning. Reform of the scientific sector involved the introduction of more competitive principles for financing research and the decentralization of implementation of scientific policy through the establishing of the National Science Center (NCN), which is involved in basic research, and the National Center for Research and Development (NCBiR), which is responsible for applied research and collaboration with industry. Pursuant to the reform, priority research areas are defined by the National Research Program (NPB) and strategic programs for scientific research. Priority research projects and programs are to be chosen applying technological foresight, aimed at identifying growth potential in the industry and services sector as well as key technologies for the future. The first strategic research programs and projects that scientific units and entrepreneurs are engaged in involve technologies for capturing and storing carbon dioxide and nuclear technologies. Research aimed at promoting the intelligent specialization of regions has also been undertaken, but it seems that strict coordination is essential in order to guarantee a more realistic and cohesive planning of scientific policy on the local level.

The main goals of the National Reform Program (KPR) up to the year 2012 is the creation in Poland of the best conditions in Europe for the conducting of economic activity, while simultaneously guaranteeing possibilities for development and a high living standard for inhabitants.

Reforms within the framework of the National Reform Program are conducted in three priority areas:

- An active society – Implementation of the National Reform Program is to bring about an improvement in the quality of education and adapt education to the needs of the economy, better prepare graduates to enter the labor market, and develop lifelong education. Significant stress was placed on actions supporting professional activity, including that of people aged over fifty.
- An innovative economy – Growth in innovativeness will have a significant impact on long–term economic growth. The program aims at improving the competitiveness of scientific entities as well as support for pro–innovation activities and the research and development (R&D) sector. Reforms are also to serve the effective improvement of transportation, industry, and tele–information infrastructure, applying new innovative solutions in environmental protection and the conclusion of main privatization processes.
- Efficient institutions – The effective use of public resources (without placing additional burdens on citizens and entrepreneurs) shall make possible the efficient implementation of pro–development policy and public investment, while guaranteeing a proper level of social security. The program aims at the development of electronic administration, improvement in the management

of public finance, further decentralization of public tasks, and the promotion of the Polish economy.

The basic principle behind the planned reforms is sustainable development in terms of the economy, society, and the environment as well as better lawmaking, support for entrepreneurship, the development of innovativeness, and influence over the small and medium enterprise (SME) sector. The following factors were taken into account in developing the draft program:

- Globalization processes increasing competitive pressure on the economy, entrepreneurs, and citizens,
- Demographic factors, mainly including the aging of society, and the related need to modify the model for professional activity and migration, and
- Challenges in the area of eliminating the negative effects of Man's impact on the environment[31].

According to the Report of the Ministry of the Economy[32], almost 300,000 entities commence economic activity in Poland in 2007. Over 96% of these are private companies. The tendency to start up one's own business is continuously increasing in Poland, which is demonstrated by the report developed by the Ministry of the Economy.

The Report proves that the development of entrepreneurship has a positive impact on economic growth and the labor market. Last year's GDP grew by 6.6% as compared with the previous year. According to experts from the Ministry of the Economy, this was a reflection of the very good condition of Polish companies. The financial result of companies employing over nine people surpassed a gross amount of PLN 127 billion. This is an increase of 26% as compared with 2006. Companies also noted the highest rate of profitability in ten years. The improving financial situation of companies also bore fruit in a high, 5% growth in employment as well as a record growth in investment of 27%.

In line with the Report, revenues from company operation exceeded PLN 2 billion in 2007. Private companies generated a total of 86% of this figure, with the remainder coming from companies of the public sector.

[31] Krajowy Program Reform na lata 2008–2011 [National Reform Program for the Years 2008–2011], www.mg.gov.pl, economics section.

[32] Przedsiębiorczość w Polsce 2008 [Entrepreneurship in Poland 2008], report of the Ministry of the Economy, September 10, 2008 version, http://www.mg.gov.pl/NR/ rdonlyres/7121FF59-AE29-456D-A96D-DE64F089444A/48017/Przedsiebiorczość_w_ Polsce1.pdf

Moreover, investment outlay by companies employing over nine workers increased in 2007 by 27% to a level of PLN 126 billion. From among all enterprises, it was the major companies that invested the most. They account for 64% of completed investment ventures. The participation of medium–sized companies in such outlay was one–quarter, while the figure for small companies was 11%.

The value of exports in 2007 exceeded EUR 100 billion. Polish businesses sold goods on European Union markets for over EUR 80 billion. At the same time the value of imports amounted to EUR 77.3 billion. The goods structure in foreign trade also changed to the benefit of a greater share of goods on a high or medium high technological level.

In spite of a certain improvement in the level of innovativeness in Polish companies, analysts from the Ministry of the Economy continue to deem this progress as insufficient. This is seen in the continuously low share of outlay on research and development in GDP. In 2006 it amounted to 0.56%. A positive signal was the nominal growth by almost 6% of outlay on research and development[33].

Thus, the key to improving the economic situation of Poland is a strengthening of innovative attitudes among entrepreneurs. An efficient institutional system guaranteeing effective support instruments for business and the scientific–research sphere as well as guaranteeing the unhindered transfer of knowledge may be helpful in this[34].

Instruments Providing Direct Financial Support for Entrepreneurs in Research and Investment in Poland

- Innovation vouchers,
- Loans for the undertaking of investment projects of an innovative character,
- Technological Initiative I[35],
- Support for research and specifically targeted projects aimed at companies and the implementation of research and development work in companies,
- Stimulation of research and development activities in companies and support in the area of industrial design,

[33] Ibid.

[34] Ibid.

[35] Technological Initiative I is an initiative of the Minister of Science and Higher Education aimed at the development of new products and technologies based on Polish scientific and technical achievements. The novel element of this program is that it is addressed to entrepreneurs, especially to those managing small– and medium–sized companies as well as to those research teams that are directly linked to industrial activity.

- Technology Credit,
- New investments with high innovative potential,
- Investment support in the production sector,
- Investment support in the modern services sector,
- Support for the development of cooperative links of supra–regional importance,
- Intellectual property management,
- Support for economic activity in the area of the electronic commerce,
- Support for the implementation of B2B electronic commerce,
- Guaranteeing Internet access on the "last mile" phase of the Innovative Economy Operational Program (PO IG) 2007–2013, and
- Support in procuring product certification as required on foreign markets[36].

9. Conclusion and recommendation for Poland

The key to improving the economic situation in Poland is the strengthening of innovative attitudes among entrepreneurs. An efficiently running institutional system guaranteeing effective support instruments for entrepreneurs and the scientific–research sphere as well as guaranteeing the unhindered transfer of knowledge should prove helpful.

As the main factor in improving the competitiveness of companies, innovativeness is mainly the result of the development of collaboration between the spheres of science and business as well as the use of patent achievements in companies.

The drive behind future growth in the European Union will be sectors based on knowledge and innovation. However, these require a solid industrial network and resources allowing the utilization of new technologies.

To a great extent, growth in entrepreneurship and innovativeness as significant factors in the economic development of Europe and Poland is dependent on the elimination of administrative barriers for companies and the introduction of the facilitating of information and communication (ICT) as needed for them to function.

[36] http://www.mg.gov.pl/NR/exeres/6FD36BE7-5ABB-4DDF-8B9299A91DA51814,frameless.htm?NRMODE=Published

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Council and the European Parliament, Commission of the European Communities, Brussels, May 21, 2002

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http://ec.europa.eu/cip/ict-psp/index_en.htm

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http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/592&format=HTML&aged=0&language=EN&guiLanguage=fr; also compare with Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, "A New Partnership for the Modernization of Universities: The EU Forum for University Business Dialogue," COM(2009) 158 final, April 2, 2009

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Technological Initiative I is an initiative of the Minister of Science and Higher Education aimed at the development of new products and technologies based on Polish scientific and technical achievements. The novel element of this program is that it is addressed to entrepreneurs, especially to those managing small– and medium–sized companies as well as to those research teams that are directly linked to industrial activity

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Streszczenie

POLITYKA UNII EUROPEJSKIEJ WSPIERANIA PRZEDSIĘBIORCZOŚCI I INNOWACYJNOŚCINA RZECZ PRZEDSIĘBIORSTW

Rozwój przedsiębiorczości oraz badania i innowacje bezpośrednio przyczyniają się do wzrostu poziomu rozwoju gospodarczego oraz dobrobytu poszczególnych obywateli i ogółu społeczeństwa. Głównym celem polityki w zakresie badań i rozwoju technologicznego jest ustanowienie Unii Europejskiej jako wiodącej gospodarki opartej na wiedzy. Innowacyjność jest też głównym czynnikiem poprawy konkurencyjności przedsiębiorstw.

Kluczowe dla poprawy sytuacji gospodarczej w Polsce jest wzmocnienie postaw innowacyjnych wśród przedsiębiorców. Pomóc może w tym sprawnie działający system instytucjonalny, który zapewni efektywne instrumenty wsparcia dla przedsiębiorców i sfery naukowo-badawczej oraz zagwarantuje swobodny transfer wiedzy.

Innowacyjność jako główny czynnik poprawy konkurencyjności przedsiębiorstw wynika głównie z rozwoju współpracy między sferą nauki i biznesu oraz z wykorzystywania osiągnięć patentowych w firmach.

Motorem przyszłego wzrostu w UE będą sektory oparte na wiedzy i innowacjach, wymagające jednak solidnej sieci przemysłowej i środków pozwalających na wykorzystanie nowych technologii.

Wzrost przedsiębiorczości i innowacyjności jako istotnych czynników rozwoju gospodarczego w Europie i w Polsce zależą w dużym stopniu od znoszenia barier administracyjnych dla przedsiębiorstw i wprowadzania ułatwień informacyjnych i komunikacyjnych (ICT) dla ich funkcjonowania.

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JOLANTA MŁODAWSKA*

Venture Capital in Japan: A Financial Instrument Supporting the Innovativeness of the Japanese Economy

Abstract

Venture capital (literally "high–risk capital") is designated for the financing of small companies that by themselves lack sufficient resources, but whose activities indicate potentially high profits in the future. It can play a special role in the development of the technologically advanced industries as well as in the growth of entrepreneurship understood as a readiness to establish new companies ("start–ups").

Two factors: First, the relatively small number of new companies as well as the number of companies subject to liquidation over the year ("firm turnover") in Japan, and second, the insignificant prestige associated with the profession of entrepreneur do not foster growth in the dynamics of this form of financing ventures. The cited indicator for Japan in among the lowest in comparison with other highly developed countries[1], while the profession of entrepreneur is not the foremost dream of college graduates. They would much rather prefer realizing their professional careers as members of the government bureaucracy or employees of a major corporation[2]. However, this mindset is slowly changing, if for no other reason then, in spite of popular conviction, because most small companies are not established during periods of prosperity, but near the end of the downward phase of the economic cycle. That is exactly the phase Japan has been dealing with for several years now. Young, creative

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[1] Grabowiecki J. (2000), *Japonia: powojenna dynamika i równowaga gospodarcza* [Japan: Postwar economic growth and balance], SGH Press, Warsaw,p. 221.

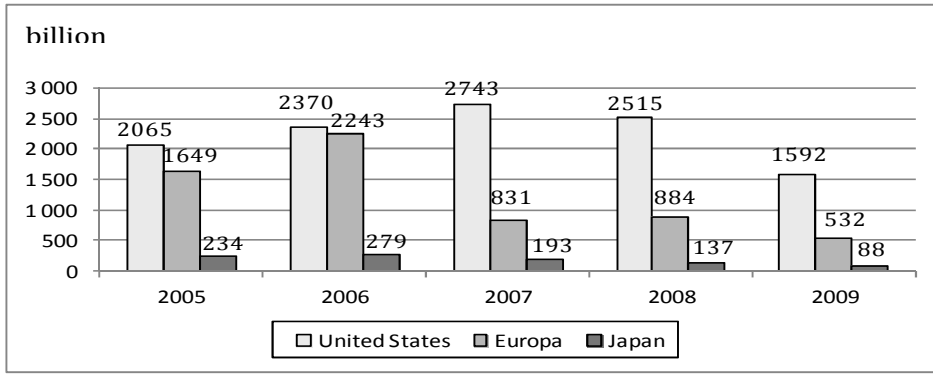
[2] Corver M. (2008), "Evolution of Japanese Venture Capital" Global Venture Capital inaugural lecture, p. 2,
http://iis-db.stanford.edu/events/5317/Evolution_of_Japanese_Venture_Capital

people, recruited from the unemployed, are seeking self–employment, using all possible opportunities embedded in the "again starting up" machinery of the economy[3].

1. Introduction

Perhaps, in addition to the relatively low public opinion of the profession of entrepreneur and the low "inter–generational" replacement of companies ("firm turnover"), there are two other phenomena determining the relatively small—as compared with the United States and Europe—level of involvement in VC investment in Japan. These two factors are the generally disdainful attitude of the inhabitants of the Land of the Cherry Blossom with respect to risk and actual, functioning legal regulations that impede the emergence and operation of VC companies. Figure No. 1 depicts the level of investment outlay on high–risk ventures over the years 2005–2009 for the United States, Europe, and Japan.

Figure 1. Venture capital investment in the United States, Europe, and Japan over the years 2005–2009 (billion yen)



Source: "2010 Survey Results on Trends in Venture Capital Investment," Venture Enterprise Center, Japan, p. 3, http://www.vec.or.jp/download/125

Analysis of data contained in Figure No. 1 indicates a falling trend in outlay in the case of Japan. An exception is the year 2006, when growth was noted. This is probably tied with the expansive monetary policy of that period

[3] Yonekura S. and Lynskey M. (2003), "Nothing Ventured, Nothing Gained," paper presented at the Global Forum – Entrepreneurship in Asia: 4th U.S.–Japan Dialogue, April 16, 2003, available from the Maureen and Mike Mansfield Foundation, p. 11.

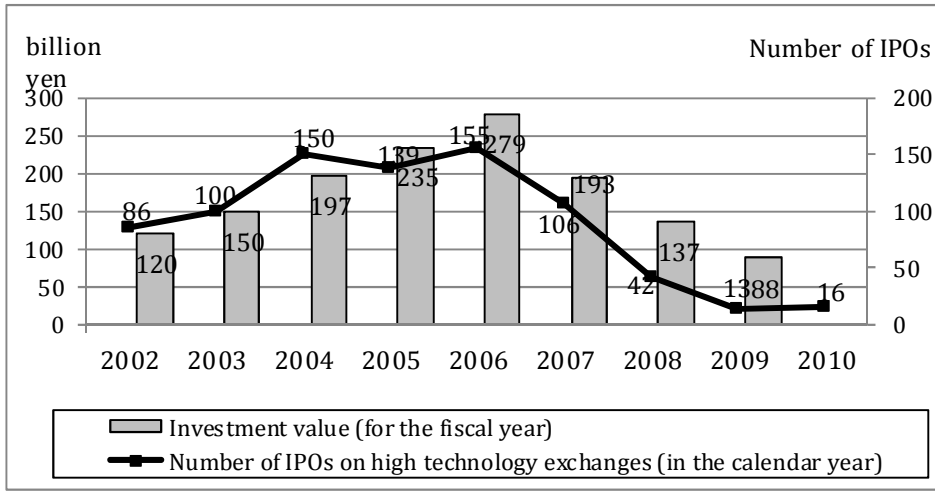
and a short–term acceleration of the economy. The situation returned to normal following this "one–time incident" and the economy again plunged into recession. This was duly followed by a fall in VC investments.

2. Characteristics of Venture Capital (VC) in Japan

Figure No. 2 shows the shaping of high–risk capital expenditure in Japan in greater detail, including for the years 2002–2010—the first initial public offerings (IPOs) for Japanese high technology stock exchanges. Both indicators are seen to gradually grow over the 2002–2006 period following the breaking of the "Internet bubble" over the years 2000–2001. Starting with 2007, it is possible to note a successive drop in both. The dynamics of changes in VC investment is reflected in the fluctuations of the JASDAQ securities exchange index, where small and medium enterprises as well as VC companies are noted[4]. This is confirmed by the observation that the rate of IPO growth is, to a great extent, dependent on the state of the economy. It is relatively high during lively and blossoming phases and low during crisis and recession stages of the economy.

[4] Six security exchanges are currently functioning in Japan—Tokyo, Osaka, Nagoya, Fukuoka, Sapporo, and JASDAQ. April 1, 2010 saw the merger of JASDAQ (including the segment of NEO–New Entrepreneurs' Opportunity high technology companies) with HERCULES, which is a part of the Osaka exchange for new, innovative entities. JASDAQ, inclusive of the NIKKEI stock exchange index, remain the most renowned VC market. The others are MOTHERS, AIM, etc.

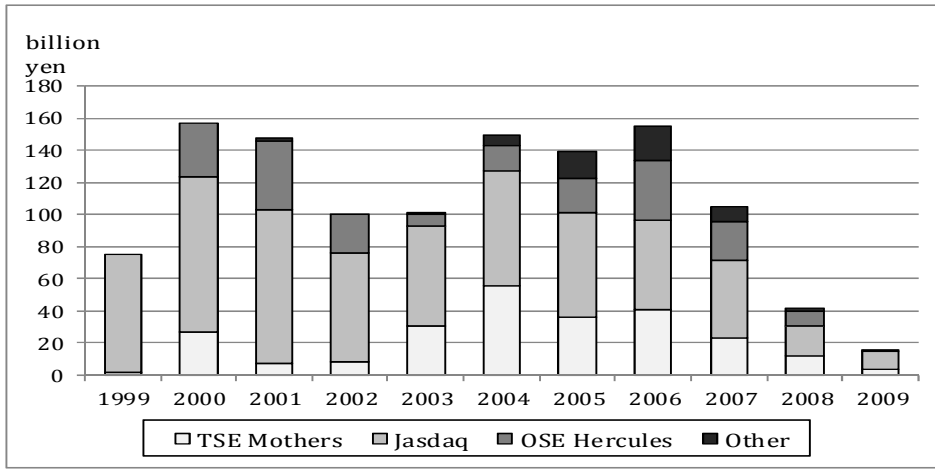
Figure 2. Venture capital investment in Japan over the years 2002–2010 (billion yen)



Source: "2010 Survey Results on Trends in Venture Capital Investment," Venture Enterprise Center, Japan, p. 2, http://www.vec.or.jp/download/125

Figure No. 3 presents the number of initial public offerings financed using high–risk capital in Japan over the 1999–2009 period subdivided into concrete stock markets.

Figure 3. Number of initial public offerings (IPOs) of companies supported by venture capital in Japan over the years 1999–2009



Source: 12. OSE/JASDAQ merger's significance and the future of Japan's venture markets, NRI Financial Research Paper "lakyara," Nomura Research Institute, vol. 78, p. 3.

T. Kirihata[5] (2006) states that a lion's share of VC investment went to the processing industry, followed by food and beverage wholesale and retail trading (Table No. 1). In the United States over the same period the breakdown of outlay achieved using the same method was ultimately different and preferred software and information processing, tele–information technologies, and medical products (Table No. 2). The enclosed data again confirm the premise regarding the leading role, including in chronological sequence, of the United States in initiating technological progress and investment. However, changes should be noted on the Japanese side. For example, VC investments in biotechnology increased from 3.7% (the whole of outlay in 1998) to 7.7% in 2008. In their turn, VC investment expenditures on health care grew from 1.5% to 9.4% over the same period[6].

[5] Kirihata, T., "The Formation Process and Characteristics of the Japanese Venture Capital Industry," Working Paper, No. 113, Kyoto University, February 2010, p. 6.

[6] Research was conducted by the Ministry of Posts and Telecommunications in 2002 and was subsequently repeated in 2008.

Table 1. VC investments in Japan (amounts and percentage shares) in billion yen in 1998

	Processing industry	Food and beverage wholesale/ retail trade	Other services	Construction	Finance and insurance	Software	Information processing/ Services	Telecommunications	Agriculture and forestry / fishing / mining
Levels of investment outlay (in absolute figures)	240.9	105.8	99.1	41	38.6	3.23	9.0	2.2	1.9
Levels of investment outlay(percentages)	42.2	18.5	17.4	7.2	6.8	5.7	1.6	0.4	0.3

Source: Ministry of Posts and Telecommunications (2000), p. 110, in T. Kirihata, "The Formation Process …," op. cit., p. 6.

Table 2. VC investments in the United States (in billion dollars) in 1998

	Software/ Information processing	Telecommunications	Medical products	Wholesale/ retail trading	Biotechnology	Semiconductor manufacturing equipment	Computers and elements tied with computer manufacturing	Machine tools	Other
Levels of investment outlay (in absolute figures)	5.7	2.8	2.3	1.2	1.0	0.8	0.6	0.4	1.8
Levels of investment outlay (percentages)	34.4	17.0	13.7	7.1	6.2	5.0	3.4	2.3	9.2

Source: Ministry of Posts and Telecommunications (2000). p. 110. in T. Kirihata. "The Formation Process …." op. cit.. p. 6.

In their turn, Mayer et al. (2005) prove in their comparative study on VC investment in Japan, Germany, Israel, and Great Britain, based on *Nikkei Kinyu* (Financial Nikkei) data for sixty–two high–risk companies, that resources are primarily applied to the needs of the tele–information and software industry, with biotechnology, the life sciences, and environmental protection second. The authors contend that a relatively small share of outlay supporting the development of electronics and semiconductors as well as products and technologies from the processing industry (including chemicals) stems from the fact that most serious research and development work in Japan in this field is conducted in the laboratories of major companies of the "keiretsu"[7].

3. The Entity Criterion for VC Investment in Japan and Its Importance to Efficiency

There are various sources of "venture capital" investment financing throughout the world. In the United States, the dominant role is played by the stock exchange and corporate investors as well as individuals—"angel investors." Corporate investors are mainly recruited from among former executive or financial managers. Retirement funds (both state and private) are of significant importance in supplying high–risk financing, as are insurance companies. In Great Britain, the most frequently met sources are retirement funds, but also insurance companies as well as individual and government partners[8]. In economies where the financial system is based on banks (e.g. Germany and Japan), there can be an overwhelming preponderance of banks as the basic entity providing resources. This is the case in Germany. In Japan, it is the non–banking financial institutions that are of greatest importance (securities companies, credit card companies, leasing companies, and mortgage credit institutions), followed by banks and insurance companies. However, a large share of these is at least in part owned by banks.

A specific feature of activities in the high technology industries is the long period of return and the related uncertainty as to the final results (what is known as the "novelty risk"). This means that, in general, individual and corporate investors are more inclined to allocate outlay in these fields as opposed to institutional investors (banks, retirement funds, and insurance companies).

[7] C. Mayer et al., "Sources of Funds and Investment Activities of Venture Capital Funds: Evidence from Germany, Israel, Japan, the United Kingdom," *Journal of Corporate Finance*, No. 11, 2005, p. 593.

[8] Ibid., p. 587.

However, if that is the case, "crafty" banks, including Japanese ones, try to tie the financing of small innovative companies with their own main objective, which is the quick multiplying of money (more on this topic below).

The relatively small interest of banks in commercial credit for small hi–tech companies is linked with their weaker (as compared with major corporations) position in terms of assets. This translates into creditworthiness. Moreover, although new ventures may be characterized by high development potential, the discussed entities usually do not have real estate of other forms of security for loans at their disposal.

Although it is true that Japanese banks—when so requested by government financial institutions (Japan Development Bank)—agreed to accept intellectual property (brands and patent) as collateral (Yonekura and Lynskey, op. cit, p. 3), the precise assessment of its value and low asset liquidity are a significant barrier. After all, banks prefer security that, if necessary, can be sold almost at a moment's notice. On the other hand, intangible assets (e.g. patents) are subject to quick "depreciation," especially in cases of an absence of developed trading markets and the Japanese system of protection for inventors, which is not overly rigorous. Moreover, high technology companies generally demonstrate long periods of research and development before any new product or new implementation makes its appearance.

In such a context, there is nothing strange in the fact that Japanese financial sector entities invest by way of specially created VC companies that are affiliated to them. There is also nothing strange in the concentration of outlay in later stages of project implementation[9], just before the public debut of the new companies. This way, financial resources are frozen for a short period of time and support is given to companies whose success is "in the bag." In the mean time, from the point of view of promotion of authentic progress, funds are necessary that will reward the risk, costs, and courage in the early stages of innovation (obviously after the presentation of a convincing business plan) at least in part.

If one subdivides the entire period of operations into four phases—(1) Seed money, (2) The establishing of new VC companies (start–ups), (3) A one to five year period, and (4) A five to ten year period—the United States is in the forefront with respect to involvement in the first and second phases, while the

[9] Hellmann, T., Lindsey, L., and Puri, M., "Building Relationships Early: Banks in Venture Capital" (April 2008), *Review of Financial Studies*, Vol. 21, Issue 2, pp. 520–521, 2008. These observations apply to relations between banks and VC companies in the United States. They confirm the overall conclusion that in starting cooperation banks look to future profits—e.g. projections as to the possibility of granting credit. This principle is also in force in Japan (Kirihata, "The Formation Process …," op. cit., pp. 8–9).

majority view in Japan is a "late appreciation" orientation. It is not without import that former bank officials hold seats on company boards. They, as claimed by Kuemmerle[10] (1999), know how to assess the value of credit security, but lack sufficient general economic knowledge making possible the drafting of a good business plan or technical know–how that is prerequisite to the identification of promising advanced technology projects.

Table No. 3 presents the ten largest VC investors in Japan in 2007. Analysis of the data found in the table indicates that they are indeed giants in the Japanese financial sector. Thus, in their 2009 order, SBI Holdings (1999) is derived from Softbank Investment, JAFCO – Japan Associated Finance Co. Ltd. (1973) is affiliated with the Nomura brokerage house, and Mizuho Capital (2002) is tied to the Mizuho financial group, or more specifically, the Mizuho Bank. The remaining companies have a similar pedigree: Chuo Mitsui Capital was a company established as a subordinate of the merged Mitsui Bank and Sumitomo Bank (2002), while NIF SMBC Ventures is closely connected to the Daiwa brokerage house.

Table 3. Japan's larges venture capital investors, 2007

Venture Capital	Investments (billion yen)
SBI Holdings	1170
Chuo Mitsiu Capital	769
JAFCO	603
NIF SMBC Venture	370
Nikko Antfactory	239
JAIC	227
Mizuho Capital	90
Tokyo Marine Capital	81
ORIX Capital	80
Mitsubishi UFJ Capital	79

Source: M. Corver, op. cit., p. 4.

The only entity in the table that is not an "extension" of the financial sector is JAIC – Japan Asia Investment Co. Ltd. (1981). It was founded with the mission of supporting innovative advanced technology projects.

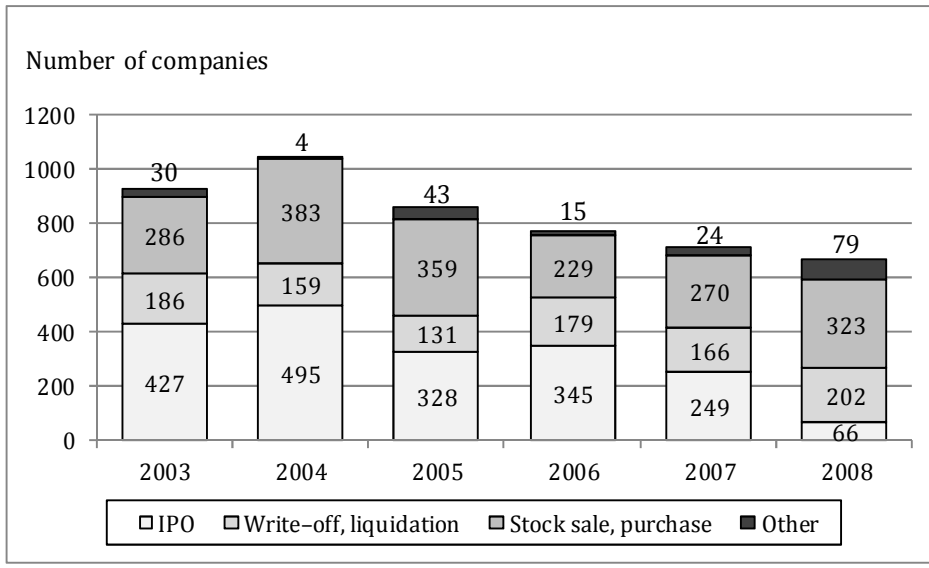
[10] Kuemmerle W. (2001), "Comparing Catalysts of Change: Evolution and Institutional Differences in the Venture Capital Industries in the US, Japan and Germany," Chapter 7, *Comparative Studies of Technological Evolution, Research and Technological Innovation, Management and Policy*, edited by. R. Burgelman and H. Chesbrough, Amsterdam and Oxford, Elsevier Science, vol. 7, p. 36.

According to the VC Fund Benchmark Report, there were eighty–five high–risk capital companies in Japan in fiscal year 2007. They managed 451 funds (Corver 2008, p. 12). The average fund volume was approximately USD 40 million (after conversion). Fund resources were, on average, supplied by ten partners—investors.

The fact that it is primarily entities of the financial sector that are engaged in VC processes also finds its reflection in the characteristics of the methods used in withdrawing capital from the modern technology investment market (compare Figure No. 4). The most frequently applied form is the initial public offering (IPO). It is with the trading debut that the first profits make their appearance. These are consumed by the suppliers of funds. There are other methods that are less popular: debt write–off, company liquidation, stock repurchase by the investor, and the sale of the ennobled entity. It should be added that the last form is used particularly often in the United States, the country of origin of VC, because it is at that moment the investors in stock receive cumulative profits. In analyzing the data in the figure in detail it is possible to notice the falling number of IPOs (both in terms of relative volumes and absolute values). This may point to a growing role of other methods for withdrawing capital. It may also be the result of over ten years of recession in Japan.

The priority assigned to the IPO generally stems from the fact that financing by way of high–risk capital conducted by entities that have ownership ties with the banking sector and securities institutions remains in agreement with the goals of that segment of the economy—i.e. maximizing quick cash turnover. Thus, the mission behind these actions is not innovation and diffusion, care for the development of the co–created company, or the sale of patents and products for industry, but primarily the multiplying of profits.

Figure 4. Methods of withdrawing VC over the year 2003–2008



Source: *Venture Business Review in Japan, 2008–2009*, Venture Enterprise Center, Japan, p. 2, http://www.vec.or.jp/download/114

4. Legal Solutions in the Area of Financing High–Risk Capital

The first private VC company in Japan was established in 1972. Kyoto Enterprise Development, a "daughter" company of Kyoto Association of Corporate Executives, was created on the basis of American models (Kirihata 2010, p. 3). Its operations concentrated on support for the development of high technology small and medium enterprises in the Kyoto region. It made investments valued at approximately JPY 300 million in forty–two local corporations, financial institutions, and other entities listed on the Kyoto stock exchange over the eight years of its existence. Most probably, one of the major reasons for its liquidation was organizational excess when compared with similar ventures in the United States (as a rule made up of only a few private entrepreneurs in collaboration with financial institutions). The first investment fund was established by Nihon Godo Finance in 1982 (Kirihata 2010, p. 5).

Significant progress has been made in legislation governing the functioning of enterprises. Representatives of companies investing high–risk capital had no rights to sit on the boards of subsidiary companies prior to 1995, limited liability companies were not allowed up to 1998, and there was also

a ban on investment in retirement funds. There was no use of stock options as an instrument motivating management staff, too. With the introduction of amendments to the Commercial Code in 1997, permission was granted for the use of stock options in the case of the management of new advanced technology companies. The following year saw the introduction of laws allowing the creation of limited liability companies in this field in order to attract funds from institutional investors.

Successive solutions were passed in 2001. Up to that time a company was not allowed supplementary financing from the capital market from the start of the fiscal year of the planned public debut to the moment of actual registration (Yonekura and Lynskey 2003, p. 6). Moreover, all preferred stock as well as guaranteed and converted bonds had to have been transformed into stock (common stock) prior to the end of the fiscal year preceding going public. These requirements were executed even in situations where there was no certainty as to whether or not the IPO would actually take place.

The year 2002 saw further modifications to the Commercial Code. Regulations restricting the operations of small emerging companies were changed. The minimum price rule for issued stock (JPY 50,000) was eliminated. A similar rule relating to the minimum stock price following a split was also stricken. These regulations greatly restricted the liquidity of companies undertaking high–risk investments. Other rules complicating mechanisms for capital market financing were also removed. Principle 4:1. is one such example. It insisted that in each and every case of a new issue of stock, the volume of common stock could not be greater than four times the volume of preferred stock. Moreover, the actual ratio had to receive approval by two–thirds of the stockholders. Also eliminated were "draconian"(Yonekura and Lynskey 2003, p. 8) restrictions tying the rights to stock options with preferred stock as well as guaranteed and converted bonds.

5. Unsolved Problems

Apart from the lowest indicator of GDP share in VC investments of all OECD countries (OECD Economic Surveys: Japan 2011)[11] with a level of approximately 0.01%, among the most important unresolved matters is the already mentioned preference for incurring expenditures in the mature phase of the investment process. This is a characteristic quality of the activities of entities

[11] *OECD Economic Surveys: Japan 2011*, OECD Publishing, 2011, http://dx.doi.org/10.1787/eco_surveys-jpn-2-11-en, p. 93 (statistical data for Japan for 2006).

of the financial sector that minimize the period during which resources are frozen.

Other authors (Mayer et al., 2005, p. 593) point to insufficient internationalization of VC investments in Japan. Out of the fifty–five examined funds, 44% only allocated their resources domestically, 13% in a single region of the country, 38% less than one–half of outlay abroad, and only 5% more than one–half. Apart from the domestic orientation of VC activities, the small number of ventures with the participation of foreign partners is a cause for concern. Such participation is certainly not fostered by the 20% tax on the profits of mixed–capital limited liability hi–tech companies collected from foreign investors, introduced in 2007[12].

The last phenomenon that must be noted is linked with what is known as the "grandstanding" effect. It was observed by Gompers (1966, pp. 17–53) and described in the case of Japan by three economists—Getsu, Uchida, and Matsumoto (2007). Pursuant to the "grandstanding" hypothesis, newly established high–risk capital companies that as yet have no standing on the market are enticed into going public too quickly in order to build a standing. The case of Japan confirms this hypothesis. This is especially true with respect to independent companies that have no capital ties with the institutions of the Japanese financial sector.

An analysis conducted over the years 1986–2006 indicates that independent Japanese companies are listed on the stock exchange earlier and with lower share capital than other VC entities affiliated to the financial giants[13]. This tendency may be explained by the fact that, in contrast to their competitors, they do not have resources from a "mother" company or from the internal financial market of the given "keiretsu" industrial group. Lacking close ties with financial institutions, they must depend on external sources of additional capital. Moreover, it has been observed that independents, for the most part, make their debut on less rigorous markets—i.e. mainly MOTHERS (Market of the High–growth and Emerging Stocks), the floor for advanced technology on the Tokyo stock exchange, and HERCULES that, up to 2010, served similar entities within a part of the securities exchange in Osaka. The rigors of the most important hi–tech investment market—the JASDAQ securities exchange—are too difficult to meet in this case.

The fate of the AIM (Alternate Investment Market) is interesting against this backdrop. This is a new high technology market that was established as

[12] Compare M. Corver, op. cit., p. 19.

[13] Getsu S., Uchida K., and Matsumoto M., "The Dark Side of Independent Venture Capitalists: Evidence from Japan," pp. 12–13, http://ssrn.com/abstract=1928586

a "joint–venture" of the Tokyo and London stock exchanges in 2008. It was founded after the Japanese corruption scandals of the nineteen–nineties and the bank crisis of 2007. The new market was intended to be different from MOTHERS with its significantly stricter registration criteria. Required on this market are transparency, accounting in agreement with international standards, listings in the English language, and observance of the requirement for company results to be public and for strict control over "insider trading" (illegal benefits derived from access to information about a company prior to its public listing, for example). According to data from the close of 2011, only one company—i.e. Mebiopharm Co. Ltd.—entered this market!

Significant underpricing of IPOs may be observed in the case of VC companies that are not linked to the financial sector[14]. To a great extent, this is the result of *ex ante* uncertainty with respect to the value of the company. It is a situation in which the price of company stock at the moment of its going public is lower than the market value because issuers are afraid of excessive risk. There is also a second aspect—long–term economic results. These also note significantly lower profits than in the case of companies acting in the name of financial giants (Wang, Wang and Lu 2003, pp. 2015-2034). Thus, both phenomena—the underpricing of stock prices in the IPO process and long–term results—seem to positively confirm the hypothesis of the "immaturity" of independent VC companies in Japan.

6. Conclusions

1. The role of VC investment in Japan measured as the share of outlay in GDP is not large and Japan itself is in last position from among OECD countries in this respect.
2. Most investments in the advanced technology industries, apart from the financing system, are also dependent on other factors such as availability of investment projects, alternative sources for financing innovation, tax incentives, legal regulations, the degree to which innovative activities are conducted by major companies, and overall macro–economic conditions.

[14] Theories interpreting the phenomenon of IPO underpricing may be subdivided into those derived from the asymmetry of information (especially important in the hi–tech sphere), institutional, control, and behavioral. For example, Kirkulak et al. (2005, pp. 451–470) demonstrates that Japanese IPOs during the information technology (IT) boom of 1999 were significantly more underpriced than over other years.

3. The low rate at which new companies are established in Japan as well as their relatively small size seem to be a reflection of problems with credit by small enterprises. It is for this reason that the development of VC financing is considered to be favorable for both already existing small innovative entities and new technological start–ups.
4. Investment allowances should be proposed more broadly in order to utilize the potential embedded in high–risk capital companies, and the creation of databases relating to achieved results with respect to already operating VC firms. The adding of intellectual property to the arsenal of security instruments also seems to be a good solution.

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Streszczenie

VENTURE CAPITAL W JAPONII JAKO INSTRUMENT FINANSOWEGO WSPARCIA INNOWACYJNOŚCI GOSPODARKI JAPOŃSKIEJ

„Venture capital" (dosłownie kapitał wysokiego ryzyka) przeznaczony jest do finansowania małych firm, które same nie posiadają wystarczających zasobów, lecz ich działalność wskazuje na potencjalnie duże zyski w przyszłości. Szczególną rolę może on pełnić w rozwoju branż zaawansowanych technologicznie, a także we wzroście przedsiębiorczości, rozumianej jako gotowość do zakładania nowych firm („star-ups").

Dwa czynniki: pierwszy – stosunkowo mała liczba nowych firm, a także firm likwidowanych w skali roku („firm turnover") w Japonii oraz drugi – niewielki prestiż, jakim cieszy się zawód przedsiębiorcy, nie sprzyjają dynamizacji omawianej formy finansowania przedsięwzięć. Cytowany wskaźnik, dla Japonii należy do najniższych w porównaniu z innymi krajami wysoko rozwiniętymi (Grabowiecki 2000), zaś profesja przedsiębiorcy nie jest szczytem marzeń ludzi po studiach. Znacznie bardziej chcieliby oni swoją karierę zawodową realizować jako członkowie rządowej biurokracji lub pracownicy dużej korporacji (Corver 2008, s. 2). Ta świadomość ulega jednak stopniowej zmianie, chociażby dlatego, że wbrew popularnym przekonaniom, większość niewielkich przedsiębiorstw, powstaje nie w okresie prosperity, lecz pod koniec spadkowej fazy cyklu koniunkturalnego. Z taką fazą mamy do czynienia w Japonii od paru lat. Młodzi, kreatywni ludzie, rekrutujący się z bezrobotnych, poszukują samozatrudnienia, wykorzystują wszelakie szanse, tkwiące w „ruszającej na powrót" maszynerii gospodark (Yonekura, Lynskey 2003, s. 11).

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Management Accountant's Role and Functions in the Enterprise Resource Planning Environment – Author's Own Research into Enterprises in Poland

Abstract

ERP systems have revolutionized practically all aspects of business processes in enterprises. They help improve the processes by ensuring their integration. Ensuring integration between financial and non-financial data, an ERP package gives new quality to the management of enterprise value. All these features make ERPs particularly important for specialists responsible for providing management information and measuring performance of the company.

This article seeks to answer whether the implementation of an ERP system has an effect on the management accountant's tasks and functions, especially in the field of performance measurement and internal reporting. The ERP impacts on the controller's role in the organization will be evaluated using field studies on six enterprises owned by multinational corporations. The question that should be asked here is whether controller's functions and tasks will also be unaffected.

1. Introduction

The new economic reality characterised by hypercompetition calls for the development of competitive business strategies addressing customers' needs, quality, time and product prices. Management accounting which provides information necessary to make decisions and manage an organization grows

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increasingly important in this demanding business environment. Financial controllers and management accounting specialists become one of the more important employees, without whom effective management is not possible.

The role and functions of the controller have been evolving, driven by factors such as changing business environment and business management methods and the introduction of new management accounting practices, but also due to the availability of new information technologies, particularly of integrated solutions called Enterprise Resource Planning systems (ERP).

ERP systems have revolutionized practically all aspects of business processes in enterprises. They help improve the processes by ensuring their integration. Data are entered into an ERP system only once and can be accessed through any of its modules immediately afterwards, thus becoming a valuable source of information about the enterprise. Ensuring integration between financial and non-financial data, an ERP package gives new quality to the management of enterprise value. All these features make ERPs particularly important for specialists responsible for providing management information.

This article seeks to answer whether the implementation of an ERP system has an effect on the management accountant's tasks and functions, mianly in the field of internal reporting and performance measurment. The ERP impacts on the controller's role in the organization will be evaluated using field studies on six enterprises owned by multinational corporations. The study is consistent with the research into ERP effects on management accounting and confirms the existing findings. This field is interesting to explore, because the studies carried out so far indicate that the implementation of an ERP package does not induce major changes (mainly Scapens, Jazayer, 2003 and Granlund, Malmi, 2002). The question that should be asked here is whether controller's functions and tasks will also be unaffected. Because of its subject, this study contributes to the volume of research into ERP effects on management accounting and complements author's earlier investigations into ERP systems. It also indirectly addresses changes in the perception and definition of the controller's role and functions in an enterprise, which have been broadly discussed in the recent years.

2. Controller's role and functions in an enterprise

Over the last three decades management accounting has been growing increasingly important for business management processes. This trend makes enterprises lay stronger emphasis on the functions of controllers and

management accountants. The requirements that these specialists are expected to fulfil, their job descriptions, roles and functions have been the subject of numerous studies. Researchers are increasingly interested in issues arising from the evolution in the roles and functions of management accounting specialists, seeking also to establish where the changes come from (in Poland Sobańska, 2003; Sobańska, Wnuk 2000; Szychta 2002, etc.; and abroad Burns, Scapens, 2000; Scapens et al. 2003).

The position and functions of a controller are determined by many factors, such as the degree of sophistication of enterprise's management accounting system, the methods and tools used in this area, as well as national, cultural and economic determinants (Szychta 2005). According to the IFAC experts (International Federation of Accountants), a management accountant is expected today to provide enterprise managers with decision-making information and to actively support business management processes in the organization. A. Szychta stresses that instead of being an analyst working in isolation from the enterprise management, a management accountant should be ,,a pivot point of [the enterprise's] information transmission system", thus making it easier for the enterprise to achieve its objectives and to improve its performance on a regular basis (Szychta, 2005).

The role that R.S. Kaplan (1995) gives to controllers is even broader, as he suggests that they should belong to the enterprise's value-adding team. He also underlines that management accounting specialists may be instrumental in developing and implementing business strategies and in streamlining business processes.

A very interesting approach from the ERP perspective was presented by R. Cooper (1996). Cooper's vision of the future was that the management accounting functions would be decentralised and that, for instance, one of them – the delivery of information – would be taken over by other staff in the organization. This means that the main function of the controllers would consist in designing and implementing information systems supporting management accounting, rather than delivering data and generating reports.

The management accounting literature owes the term "hybrid accountant" to J. Burns and R. Scapens (2000). According to the authors, today's management accountants are not only "suppliers" of information, but also, to a great extent, advisors on the financial and non-financial impacts of enterprise's activities and processes. In addition to having financial and accounting knowledge, ,,hybrid accountants" possess an unusually good understanding of the processes run in the enterprise and its special character. These specialists are most common in the process-oriented organizations, where they cooperate with process managers while being also managers, advisors and consultants on

a given process. They are members of the accounting team, but they primarily belong to the process management team.

J. Burns and R. Scapens as well as other authors continued their research on the role and tasks of management accountants. Financed by the Chartered Institute of Management Accountants (CIMA), the research involved three decades of interviews with these specialists, as well as analyses of CIMA periodicals published in the same period and of management accounting job ads (Balvinsdottir et al., 2009 and Balvinsdottir et al., 2009a). The conclusions the authors reached were rather surprising. They found that notwithstanding all the changes in how management accountants and their tasks were perceived (a perceptive shift from a "bean counter" to a modern business partner) over the three decades, the accountants' primary function in the organization remained the same. According to the authors, a controller should perform the traditional role of an analyst of board's decisions and of a supplier of vital information for managers to make decisions on long-term growth. This double role is particularly welcome in a time of crisis – a management accounting specialist should be "a pessimist expert" limiting the symptoms of ungrounded corporate optimism.

CIMA is not the only organization to trace controllers' evolving responsibilities. In 2007 Ernst&Young interviewed 44 financial controllers, financial directors and external consultants in order to determine the role of financial controllers vis-à-vis managers' needs and the Sarbanes-Oxley and IFRS standards, and to formulate guidelines for these specialists to further their careers. The main tasks of controllers as arising from the survey are, among other things, adding value to the organization, improving the reporting solutions, and making the organization more effective (Ernst & Young research report, 2008).

In recent years controllers' functions have been decentralised. It is currently believed that some of the management accountants' tasks should be assigned to managers or operational staff (e.g. the preparation of some reports, variance analyses), while the controlling staff should concentrate on designing, implementing and improving management accounting systems.

Very interesting studies are those trying to explain why the functions and the role of controllers change. The changes are mainly attributed to the economic situation in the 1990s, particularly to the strong competition in the global markets. In a difficult business environment management accounting and management accountants become very important for their organizations.

J. Burns and R. Scapens (2000) found that controlling processes in enterprises faced by strong competition are customer oriented and lay emphasis on the customers and the market.

Controllers' responsibilities are also affected by technological progress, particularly the availability of modern IT solutions. Today's advanced computer technologies offer very efficient hardware platforms; at the same time, hardware prices are going down, so even the small and medium-sized companies can afford to use sophisticated computer systems.

Some authors indicate that management accountants' functions change following major modifications in the organization of modern enterprises. In the 1970s and 1980s enterprises merged to form conglomerates, but in the 1990s a reverse trend could be seen: enterprises concentrated on their core activities, while other services were outsourced. These trends affected the scope of controllers' responsibilities too (Burns, Scapens 2000).

A. Szychta (2005) characterised management accountants in the context of the standards and guidelines developed by their professional organizations, as well as presented their functions and tasks in relation to the changing scope and methods of management accounting.

3. The nature of ERP systems

As a result of the enormous progress in computer science that has taken place in recent years, financial controllers have received new tools that improve their performance in various ways. An IT solution that started to develop in the 1960s and has revolutionized processes in controlling departments is integrated information systems known as Enterprise Resource Planning systems (ERP). The systems use the available, minimal set of data to generate all information one needs to make decisions and prepare the required reports. This feature allows shutting down all independently running and overlapping systems for data collection and processing that can be found in many enterprises. The ERP systems give managers access to each unit's data as soon as they are entered into the system, as well as enabling all employees in the organization to exchange and distribute information – this functionality has become characteristic of the turn-of-the-century information technologies (Granlund, Malmi 2002).

In addition to being multi-modular structures, the ERPs are also special in that all data are entered only once and immediately afterwards they become accessible through all system modules. Their other features include functional

comprehensiveness, the ability to integrate data and process, customization, ease of configuration and compliance with local laws (Shang, Seddon 2002).

The main purpose of an ERP package is to ensure that all management levels in an enterprise are integrated as much as possible. The package covers all production and distribution processes in the enterprise, integrates various business areas, streamlines flows of critical information and enables instant responses to changes in the market. The ERP data are updated in real-time and can be accessed whenever needed (Spathis, Constantinides 2004, p. 235).

Integrated information systems known as ERPs have revolutionised the way enterprises do their business. They are readily implementable sets of integrated modules that can handle all business functions (Kavanagh 2001). They are also dynamically customizable, which means that they can be adapted to address the needs of any industry. ERPs can build comprehensive models of business processes, which places them among all-embracing solutions containing large numbers of modules characterised by different complexity (Scapens, Jazayer 2003, p. 202).

A particularly valuable feature from the management accounting perspective is that not only can the ERP data be used multiple times, but they can also be accessed by the system's different modules, which saves additional and frequently unnecessary data processing. Moreover, the main advantage of an ERP system – the accessibility of a wide range of newly entered data from any place or geographical location – gives a new value to the work of a financial controller or a management accountant. This feature brings controllers closer to their area of responsibility. It is particularly important for multinationals, whose management accounting staff is frequently required to service remote branches (Quattrone, Hopper 2001).

4. A review of the literature about ERP impacts on management accounting systems

The influence exerted by ERPs on management accounting and management accountants has become the subject of research relatively recently, because the first studies from this field started to be published in early 21st c.

Booth at al. (2000) reviewed the experiences of Australian enterprises implementing ERP systems to determine their benefits for broadly understood accounting. According to the enterprises, the ERPs proved useful in processing transactional data and as a source of information necessary to make short-term decisions. At the same time, though, their capability of supporting more

advanced strategic decisions was very limited. In general, the systems did not have effect on accounting practices.

One of the most interesting studies discussing ERPs' impacts on management accounting and management accountants was conducted by M. Granlund and T. Malmi (2002). They showed that the examined ERPs only moderately affected control and management accounting systems. The sampled companies did not implement new management accounting solutions, preferring to improve the methods and tools they already used. Moreover, their more advanced management accounting tools functioned outside the ERPs. The authors noted, however, that the implemented ERP systems had a considerable and positive influence on the management accountant's role in the enterprise. The representatives of the controlling departments stated that owing to the systems their work added more value to management control and managers' decisions.

Analysing the SAP implementation in BM (Europe), a branch of the global BM Corporation, R.W. Scapens and M. Jazayer (2003) also found that although the system did not contribute to changes taking place in the corporate management accounting system, it made their introduction much easier. They additionally established that following the introduction of the ERP system the role of the management accounting specialists was broadened in the enterprise and that the traditional functions of the controlling department were decentralised at the same time.

C. Spathis and S. Constantinides (2004) surveyed Greek enterprises to find out why they chose to implement ERP systems and what accounting practices were used in the new environment. Their findings showed that more than half of the enterprises used ERPs to calculate financial and non-financial indicators of performance, to carry out multidimensional analyses of profitability, to plan and control budgets, and to manage cash. Only few added operational management, activity-based costing, target costing or marginal costing to this list.

In 2005 P. Quattrone and T. Hopper compared SAP R/3 implementations in two multinational corporations. The authors' main goal was to establish how the systems affected the exchange of information between the branches and the headquarters, as well as the solutions applied within management accounting and internal control. The implemented ERPs did not bring about the expected changes in the internal control system in any of the corporations, although the authors pointed to different causes of the situation.

An extensive study analysing ERP impacts on the accountant's role and functions was carried out by A. Caglio (2003). The author maintains that the

introduction of an ERP system contributes to the creation of new hybrid jobs in the enterprise, including the position of a "hybrid accountant". She also found hybridisation between particular groups of professions. The implementation of an ERP system leads to redefinition of accountants' tasks. Some of them are taken over by employees in other departments, which opens the door to their professional development and is likely to increase their importance in relation to other stakeholders in the enterprise.

Having interviewed the representatives of the management accounting department and financial department in the enterprise they chose, O`Mahony and J.Doran (2008) concluded that while the interviewed employees benefitted from ERP implementation, the department's responsibilities changed little.

The Griffin and Dempsey study (2010) had a slightly different character and aims, as the authors concentrated their efforts on establishing accountants' influence on an ERP implementation in a public sector enterprise. Their research is very interesting, because it underlines the importance of the contribution made by the financial accounting and management accounting departments to ERP design and implementation. When an ERP implementation team does not have these specialists among its members, then a consistent system meeting legal requirements and able to handle the organization' business model is not likely to be created.

5. Presentation of the field studies

This study sets out to determine how an ERP implementation affects the management accountant's role in the enterprise. An attempt is also made to find out about the ERP-induced changes in controller's responsibilities and tasks. The exploration of this subject area was inspired by earlier, similar studies conducted by M. Granlund and T. Malmi (2002), R.W. Scapens and M. Jazayeri (2003), A. Caglio (2003). R.W. Scapens and M. Jazayeri (2003) suggested that further interviews and in-depth field studies were necessary to confirm their findings. It is interesting to note that all studies mentioned in this article show that an ERP system has only limited effect on the enterprise's management accounting system and that controllers' tools and methods remain virtually the same following its implementation. On the other hand, though, the studies by M. Granlund and T. Malmi (2002), R.W. Scapens and M. Jazayeri (2003), and A. Caglio (2003) indicate that an ERP system significantly affects the practices of management accountants.

The following research hypothesis is formulated:

HYPOTHESIS: The implementation of an ERP system induces changes in controller's responsibilities, tasks and role in the company.

Between 2010 and 2011 the author of this article interviewed the representatives of six Poland-based enterprises, seeking to establish how their management accounting solutions changed with the introduction of an ERP system. The analysis of the six cases showed that the change did not entail major modifications in the management accounting systems. In addition to trying to identify the changes in the range of management accounting tools and methods, the survey also asked questions about the controlling department's role, functions and scopes of responsibilities before and after the system was implemented. In the course of the discussions about ERP systems' bearing on the controller's job, the management accountants were asked to describe how the systems impacted on their work.

A field study analysis was chosen as a research method, because this approach is used increasingly often to study management accounting. The list of authors who have used it to analyse ERPs and the relationships between them and management accounting, financial accounting and internal control systems includes, *inter alia*, M. Granlund and T. Malmi (2002), S.C. Lodh and M. Gaffikin (2003), R.W. Scapens and M. Jazayeri (2003), A. Caglio (2003), as well as P. Quattrone and T. Hopper (2005). According to M. Granlund and T. Malmi (2002), the method offers more possibilities of explaining the occurring phenomena than a questionnaire survey, and does not suggest any answers to the respondents. R. W. Scapens and M. Jazayer (2003) also recommend a field-study analysis as a tool providing a better insight into management accounting changes induced by ERP systems. Although the approach does not justify deriving generalizations from the findings, it seems to be the most suitable tool for explaining the questions raised in this study.

Research conclusions were drawn from the interviews with the representatives of six enterprises being Poland-based manufacturers owned by multinational corporations. The interviews involved 2 financial directors, 3 financial controllers, 2 heads of controlling departments, and 2 representatives of IT departments. The interviews were scheduled for around 2 hours and were conducted based on a questionnaire outlining the points for discussion. The same form was used to take down respondents' answers. In addition to giving interviews, two manufacturers made available their working documentation that they used to parameterize and implement their ERP systems, as well as user instructions.

In the course of the survey major changes in the management accounting systems, such as the introduction of a new cost accounting system or a redefined concept of budgeting, were found in only two enterprises, but the reason why they occurred were the information needs of the new corporate owners of the enterprises and the owners' wish to standardize management accounting tools and methods across the global organization. Moreover, two enterprises ran their more advanced cost accounting systems, i.e. target costing and ABC, outside the ERP packages. As in the case of the Granlund and Malmi findings (2002), it can be concluded that ERPs consolidated the organizations' management accounting methods and tools rather than making them innovative.

Three of the sampled enterprises used traditional cost accounting systems and budgeting methods that they had introduced many years before. The fourth enterprise also chose to implement traditional standard absorption costing. One enterprise in the survey used *kaizen* costing and target costing in parallel with standard absorption costing, another used ABC.

The interviews allowed drawing conclusions on how ERP implementation affects the role, functions, tasks and the scope of responsibilities assigned to the management accounting departments.

A different role of a management accountant in the organization

All representatives of the surveyed enterprises agreed that their roles changed significantly and became more important, and that they constituted an important link in the information distribution and enterprise management network. To some extent they became partners to managers, who not only ask the controlling departments for information and analyses they need to make decisions, but also seek their advice beforehand. One of the management accountants commented that after the ERP system was implemented he started to collaborate with departments (e.g. the quality assurance department) and colleagues with whom he had had limited professional contacts before. Another specialist stated that some jobs in the controlling department, such as analyses of new investment projects or of the impacts of some short-term decisions, were more effective now, because of the contribution of other departments that had rarely cooperated with the controlling department before the ERP system was installed.

The role of the management accounting departments became more important in the enterprises largely because of their active involvement in designing and implementing ERPs. Three of the six management accountants in the survey were even appointed as managers for ERP implementation projects. Although each implementation project had the support from external consultants (e.g. Accenture, Siemens, BCC), the management accounting departments

played a vital role as advisors and in-house consultants co-designing the final solutions. One of the controllers commented that over the twelve months before the system went live more than half of the controlling department' working time was allocated to setting the system's parameters.

With their extensive knowledge of the system, the management accounting departments played the role of consultants and a resource of information even after the system became operational. For instance, they showed other employees which transactions must be used in order to obtain the necessary data, or what parameters a given transaction involved. One interviewee from the management accounting department stressed that because of his involvement in the ERP implementation process he could better understand in-house processes and the linkages between them, so now his analyses were more precise.

According to the controllers' own words, the ERP systems "pulled them from behind their desks". In the system customization stage they had to go out to employees in other departments to inquire them about internal processes, which improved the cooperation between them also in the post-implementation period. This leads to a conclusion about stronger integration between management accounting and other business areas following from this process.

In three enterprises the representatives of the controlling departments were asked to deliver ERP training and to support other users in the post-implementation period. This strengthened business relations between the controlling department and other departments, as well as creating a climate of mutual trust and healthier relations between the employees. One of the interviewed accountants suggested that the respect for the accounting department that other departments showed seemed to be greater.

Changes in the scope of management accountants' responsibilities

One of the major changes in management accountants' responsibilities was that they were asked to participate in the ERP implementation process. Three of the six management accountants in the survey were project managers, whose regular duties were suspended until the end of the implementation period. Their new tasks included also training and support for other ERP users.

Other major changes in the scope of controlling departments' duties that could be attributed to ERP implementations were not reported. The duties of the staff in the management accounting departments invariably included the coordination of budgeting processes and budget control, calculation of the cost of a product, multidimensional analyses of profitability, evaluation of investment projects and control over investment budgets, reporting on the financial and non-financial indicators, and management of net working capital.

There were only two enterprises in the sample where the responsibilities of the controlling departments somewhat changed following the introduction of new cost accounting methods (target costing and *kaizen* costing in the first enterprise and the previously unused standard absorption costing in the other) and of more complicated budgeting methods than before (respectively rolling budgeting and traditional operational budgeting). However, the main reason for the surveyed enterprises to implement new management accounting tools was the aforementioned demand for information from the new corporate owners, who proposed that the same management accounting tools as those used in their other factories be implemented to make sure that the management accounting systems delivered standard and consistent information. In other words, the controllers' duties did not change because of the ERP systems, but following the introduction of new management accounting tools.

New functions of management accountants in the enterprises and the decentralisation of some of their tasks

The ERP systems implemented in the enterprises substantially automated some of the tasks performed by management accountants, thus reducing the amount of time the specialists needed to prepare routine reports or to carry out manual operations, and giving them more time to prepare precise, multidimensional analyses. Operations that did not add value and evidently wasted the time of the controlling staff were removed (for instance, at each month end, at night, one of the controllers had to "close" the previous month and to "open" the next one, so that the costs of a product, the sale of finished products and business events could be respectively accounted for and recorded).

Moreover, following the integration of the business data, some reports and analyses that had been previously prepared by the management accounting departments were assigned to other departments. One of the management accountants illustrated the change by pointing to control over the budgets of particular cost centres. Before the ERP system was implemented the controlling department would regularly prepare weekly cost variance reports on particular cost centres. When the installation was complete, the managers of the respective cost centres could generate such detailed reports themselves. This saved the controlling department around 3 hours of its working time a week, the cost control was tighter than it had been, and the managers felt more responsible for their costs. In another enterprise in the survey, its controlling department previously calculated the key financial and non-financial indicators with different frequencies (e.g. the efficiency of the direct production workers was calculated daily, defective product rates weekly, and the number of the items sold twice a day) and distributed them among all department managers and the

top management; after the ERP system was implemented, each manager could see the indicators for themselves, without having to ask the controlling department.

An interesting fact is that three controllers were of the opinion that the implemented ERP packages also increased the other employees' knowledge of cost control, budgeting and of the causes of variances, all of these items being elements of management accounting. This change may be attributed to employees' involvement in the ERP implementation process and their ERP training, or to easier access to the data. The managers learnt more about the enterprise's chart of accounts and about the methods employed to calculate most indicators, and skilfully analysed variances from their costs.

Particularly important for multinational corporations is that an integrated system ensures standard reports, procedures and interfaces. In one enterprise owned by a multinational the interviewed controller made a comment that his knowledge of the ERP system implemented in his workplace allowed him to do his job even in a factory that the corporation ran on another continent. Controllers gained new opportunities to exercise their profession and develop in the controlling departments located in different parts of the world.

Changes in employment in the controlling departments

In the preparatory phase for ERP implementation employment did not change in any of the management accounting departments in the six enterprises. The numbers of staff remained the same, but some employees were either appointed as project leaders or were involved in the implementation process. Even after the system went live, the departments did not downsize their employment. Consequently, smaller costs of salaries paid to this category of employees that the ERP developers promote as associated with their products were not noted.

It must be stressed, however, that while the number of employees did not decrease as expected, the enterprises significantly increased their scopes of activity.

Better quality, more time

One result of ERP implementation that was appreciated by every management accountant in the survey was the automation of many previously manual procedures and actions. All these specialists agreed that this feature allowed them more time to make more useful analyses, to meet people from other departments to support them in making decisions, or to actively participate in the implementation of new projects.

Moreover, every representative of the controlling departments stated that the reports, analyses and statements they prepared after the ERP packages were implemented were of better quality and had fewer errors. Previously, most of the documents were prepared manually with spreadsheets, and now the processes were automated. The automation also increased the frequency with which some analyses were made; for instance, before one of the surveyed enterprises installed its ERP package, performance was measured weekly with a spreadsheet; afterwards, the measurements could be repeated several times a day. This means that the benefit of having on-line access to the data was also reaped. Instead of having to wait for most key analyses until the end of the month, the major trends could be followed on an on-going basis. The time needed to close a month or a year was also considerably shorter and the whole process was automated to a large extent.

Although the controllers pointed to the complexity of the ERP systems that made it very difficult for a person without extensive training to use them, they were also satisfied with the systems' friendly and comprehensible interfaces, and with their high functionality that made their work much easier. One of the interviewed management accountants even mentioned that the ERP increased the „quality of work".

The surveyed management accountants indicated that the implemented ERP systems brought new problems. Implementations were not perfect and well planned in as many as three instances, as a result of which numerous technical problems making it difficult for the controlling departments to fulfil their tasks kept appearing long after the systems were launched. The interviewees also complained about the low quality of training and of working materials, which particularly in the early stages made them learn the system and its particular transactions by 'trial and error' and considerably reduced their efficiency.

The financial and management accounting modules are the "kernel" of an ERP system, so they are affected by errors that the users of other modules made and failed to correct, as well as by the problems arising therefrom. Because they also show imperfections in system customization and parameterization, the controllers stressed that they were involved in time-consuming clarifications and discussions of the spotted errors and technical problems. This situation apparently challenges the popular opinion that an ERP system creates an environment where even individuals with limited accounting knowledge can work as controllers. In fact, enterprises that use these systems have a special need for management accounting specialists who are competent, experienced and knowledgeable of in-house processes.

Other changes

The representatives of the surveyed enterprises were of the opinion that the data integration in the ERP systems contributed to more effective flows of information and communication between the controlling department and other departments. One of the controllers formulated an interesting comment, stating that the ERP system made everyone in the organization "speak the same language".

Another interesting finding is that all respondents believed that the ERP technology stimulated their professional development and allowed them to learn many new things. On the other hand, though, all of them were aware that their knowledge of it was insufficient and that they did not utilise their systems' capabilities to the full extent. Although the parameterisation, implementation and operation of an ERP system are a real challenge, each controller perceived their involvement in the processes as a very valuable professional experience that was likely to help them achieve professional successes in the future.

6. Conclusion

Most studies indicate that ERP packages have limited effect on enterprises' management accounting systems and that their role in the introduction of new management accounting tools and methods and in the evolution of this business area is small.

However, the interviews with the representatives of the management accounting departments indisputably showed that integrated information systems such as SAP or BAAN affected the practices of this group of specialists. The implementation of an ERP system allowed the controllers to learn much more about their in-house processes and the linkages between them, as well as about the logic of integrated information systems. Moreover, the system enabled them to take a more active part in business management and to become partners to managers, offering valuable support for decision-making processes. These findings show that the role of management accountants has evolved in the last decade, from suppliers of information to highly specialised advisors and competent consultants.

Although the implementation of an ERP system did not significantly change the general job descriptions of the management accountants, some of their tasks were either assigned to the managers of particular centres or automated to a high degree. Having more time, the controllers could undertake

more in-depth analyses or actively participate in business management in the enterprise.

According to the surveyed management accounting staff, the ERPs improved the quality and timeliness of their reports and analyses.

Each of the controllers indicated that in their particular case the main burden of ERP implementation and operation rested on the controlling department. In other words, the controlling staff had to spend a large portion of their time on implementing the system or on solving the arising technical problems. Although the implementations were very demanding on the surveyed specialists, they also offered them many professional benefits and broadened their horizons. The specialists expected that their knowledge of the ERP environment would further their development.

The conclusions that the survey offers coincide with those reached by other authors, although the sample contained only six enterprises. For the validity of the findings to be verified, the sample should be extended to other enterprises and the surveyed enterprises should be monitored for changes. In this way, ERPs' long-term impacts on the practices of management accountants will be able to be reliably identified.

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Streszczenie

ROLA I FUNKCJE SPECJALISTY DO SPRAW RACHUNKOWOŚCI ZARZĄDCZEJ W WARUNKACH ZINTEGROWANYCH SYSTEMÓW INFORMATYCZNYCH– BADANIA WŁASNE PRZEDSIĘBIORSTW W POLSCE

Zintegrowane systemy informatyczne rewolucjonizują praktycznie wszystkie obszary działalności przedsiębiorstwa. Przyczyniają się one do ulepszenia procesów biznesowych poprzez integrację wszystkich obszarów działalności przedsiębiorstwa. Co więcej dzięki tej technologii następuje zintegrowanie danych finansowych i niefinansowych przedsiębiorstwa, pozwalając na jeszcze lepsze zarządzanie wartością przedsiębiorstwa. Toteż systemy ERP szczególne znaczenie odgrywają dla specjalistów zajmujących się dostarczaniem informacji niezbędnych dla zarządzania przedsiębiorstwem.

Celem badania jest próba odpowiedzi na pytanie czy zastosowanie zintegrowanego systemu informatycznego w przedsiębiorstwie zmienia zadania i funkcje specjalisty do spraw rachunkowości zarządczej. Na podstawie studium przypadku sześciu przedsiębiorstw będących częścią koncernów międzynarodowych zostaje dokonana ocena wpływu zastosowania ERP na rolę kontrolera w organizacji. Autor odpowiada również na pytanie czy w funkcjach i zadaniach kontrolera nie zaobserwowane zostaną zmiany w związku z implementacją ERP.

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Fiscal Rules and Effective Fiscal Policy

Abstract

This article examines and assesses the influence of political factors on the effectiveness of pursuing fiscal policy. These factors usually cause and maintain a high budget deficit and public debt. Moreover, the problems of influence of fiscal rules on increased effectiveness of the pursued fiscal policy have been discussed. The fiscal rules are to assure macroeconomic stability in economy and improve credibility of the pursued fiscal policy by reducing the deficit, government spending, and public debt. Examples of applicable fiscal rules in the EU and Poland are presented and an attempt is made to evaluate the effectiveness of these rules in the process of consolidation of public finances.

1. Introduction

In recent years one can observe an increasing interest of economic literature in fiscal policy and its impact on the economic activity. One of the main reasons for this interest is the fact that indicators of public debt-to-GDP ratio, caused by a long-lasting budgetary deficit have increased over the last several decades in many developed countries. In recent years this situation has dramatically deteriorated due to the global financial crisis, which turned out to be acute for the economies of many countries. Currently, deterioration of public finances seems to be the biggest threat to global finance.

It seems that one of the reasons for this state of affairs is the fact that many countries fail to pursue responsible fiscal policy. The responsible policy is

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one that stabilizes public finances in the medium and long run, by correcting inconsistent budget policy over time and by reducing predisposition to create deficit resulting from the influence of external factors on fiscal policy. The responsible fiscal policy results in increased reliability and transparency of fiscal policy and consequently increased macroeconomic stability and long-term fiscal stability which in turn improves investors' confidence in the economy and promotes economic growth (European Commission 2010).

It should be emphasized that the difficulties in implementing responsible fiscal policy may result not only from economic factors (e.g., economic recession), but may also result from political reasons. It is believed that politicians tend to use the power they exercise in order to pursue their own interests. In order to achieve their goals they use fiscal policy, thereby it often becomes irresponsible. This paper aims to analyze and assess political factors which hinder the efficiency of fiscal policy and generate high and permanent budget deficit and public debt. Moreover, the issue of the impact of fiscal rules on the increase in the effectiveness of fiscal policy has been mentioned. The paper ends with conclusions.

2. Factors impeding the pursuance of effective fiscal policy

Liquidity constraints and polarization of social preferences

One of the factors that may induce pro-cyclicality of fiscal policy may be the access to external financing sources under different economic conditions. This is especially true in the case of developing countries, whose liquidity during stagnation/recession is significantly smaller due to lower reliability of these countries (as compared to the developed and economically stable countries), or these countries are offered high-interest loans. Consequently, the developing countries must reduce spending and cannot excessively increase the budget deficit. The situation changes during booms when it is easier to borrow money, resulting in increased borrowing and increased spending. Therefore, as a result of limited access to international financial markets in times of recession, the developing countries are somehow forced to conduct pro-cyclical fiscal policy (Gavin, Perotti, 1997; Catao, Sutton, 2002; Kaminsky, Reinhard, Vegh, 2004).

One of the latest hypotheses explaining the reasons of pro-cyclical fiscal policy is a hypothesis about the social polarization of preferences resulting from social income inequality (Woo 2006). The strong polarization of social preferences can make it hard for politicians to pursue and implement optimal economic policy on the grounds that they represent the interests of different

social groups. The tendency of different social groups to put pressure on politicians is particularly strong in the period of economic expansion, when increased budget revenues increase the likelihood of meeting the specific demands. In this case, the pressure exerted by various social groups on politicians is such that they will make political decisions which are rational from the perspective of one social group, but inefficient in terms of economy and society as a whole.

Conflict of interests (budget deficit as a strategic variable)

In a situation of conflict of interest between political parties, politicians use budget deficit as an instrument of their strategy aimed at preventing or at least impeding the takeover of power by political parties with different preferences in regard to shape of fiscal policy. The ruling parties may tend to use the deficit as a tool with which potential successor will encounter limitations and difficulties in pursuing economic policy. This argument is based on the fact that the current budget deficit causes future costs in the form of lower spending and/or higher tax burden.

Alesina and Tabellini (1990) present a model in which politicians have different preferences as to the structure of budget expenditure. The ruling party which fears losing power to the opposition tends to maintain excessive budget deficit and to make such expenses, that they prefer. If the party actually loses power, the costs of the budget deficit in the form of future spending cuts will affect its successors in the sense that they will have to spend less on objectives they prefer, and which had not been preferred by the party which lost power. In this model, the budget deficit grows when the probability of losing power by the ruling party increases. Moreover, the deficit increases along with polarization of political parties, because the higher the polarization, the more disparate are the objectives and preferences of each party.

A common-pool resource problem

An important factor that makes it difficult to pursue a good fiscal policy is a common pool problem. A lot of public spending is targeted to specific groups of voters, while it is financed by all voters (taxes). So we are dealing with redistribution of financial resources, because often those who benefit from certain government spending are not those who pay for. In addition, a group of people who pay (all taxpayers) is larger than the group of beneficiaries. Consequently, there is a difference between the benefit of a group of beneficiaries and the benefit of general public. Politicians tend to over-estimate the social benefits of a particular fiscal policy because they see general benefits for the social groups whose interests they represent, and only a part of the costs in the form of taxes paid by these groups. The result is a common pool problem,

which leads to an increase in budgetary expenditures, especially those which provide local benefits (Von Hagen 2005b).

Therefore, the varied interests of different groups of voters may become a cause of excessive spending and consequently, of excessive budget deficit. The problem arises when politicians who are making decisions regarding the budget represent different regions of the country and want to truly represent the interests of their constituents. In such a situation the politicians will be interested in the implementation of these projects financed by the budget, whose benefits accrue to the region, but the costs are incurred by all the voters (taxpayers). Consequently, the particular region of the country absorbs all the benefits of the expenditure incurred by the budget, but only part of the costs. Subsequently, there is a "surplus supply" of government projects directed to those regions whose interests are most strongly represented by political parties. Therefore, the increase in spending and, consequently, in deficit is the greater, the more regions of the country are represented in the parliament (the government), and thus the greater is the geographical fragmentation (polarization) of the government (Działo 2009).

The agency problem and asymmetry of information

The agency problem occurs when one entity (the principal) hires another (agent or contractor) to pursue a specific task assigned by the principal. As a rule, however, the agent who implements assigned tasks, is not only guided by the good of the principal, but pursues his own interests, often different from the interests of the principal.

In the context of fiscal policy, the voters are principals and politicians are contractors, but only the latter have full information about activities they perform. As a result, fiscal policy becomes sub-optimal, since the decisions taken by politicians often do not have a direct relation with the economy and are intended to "please" voters.

Voters do not have full information about the activities of politicians, but are aware that government officials are corrupt to some degree and appropriate part of tax revenues to pay the so-called political rent, i.e. that is to finance their private interests. Therefore, during booms, the voters demand greater utility for themselves (e.g. in the form of lower taxes or higher quality and / or more public goods). This in turn forces the government to increase government spending to finance the production of public goods. In this way, voters are somehow forcing the government to pursue pro-cyclical fiscal policy, demonstrated by lowering taxes, increasing budget expenditure, and increasing the public debt when the economy is in the boom (Alesina, Tabellini, 2005).

3. The main types of fiscal rules

To constrain the freedom of politicians in shaping fiscal policy fiscal rules are often introduced, that is quantitative constraints of the deficit, government spending and public debt, which are usually legitimated by constitutional regulations or related acts of law[1]. Consequently, the fiscal rules are to ensure macroeconomic stability in the economy and improve the credibility of fiscal policy and reduce excessive government deficits. The purpose of the rules is also to maintain the stability of adopted fiscal policy in the long run, as well as to reduce the negative externalities of independent fiscal policies pursued by the countries belonging to a specific federation of countries (e.g. EU countries).

Fiscal rules are usually classified in three groups:

- Deficit rules
- Expenditure rules
- Public debt rules[2]

The deficit rules are in the form of limits, which the deficit cannot exceed in the fiscal year. A special type of deficit rule is a balanced budget rule, which for a long time has been the most popular and in fact the only applicable rule of fiscal policy. As set out by his rule, the total state budget revenues in a given fiscal period must be equal to the total expenditure, while the fiscal period need not be identical with the calendar year (since it can be longer). This rule may also allow for a temporary deficit due to unusual circumstances (a strong recession, natural disasters, war).

One of the modifications of the described deficit rule is the so-called golden rule. Application of the golden rule allows for the deficit only to finance investment spending, while balancing current expenditure[3]. Public debt is a financial source of investment spending. According to advocates of the golden rule, it provides a proper distribution of wealth between generations[4]. Investment expenditures create assets, which will greatly benefit future generations, so it is appropriate in this case, to burden these generations with costs in the form of public debt repayment. It should also be noted that it is important to precisely

[1] A. Schick, Post-Crisis Fiscal Rules: Stabilising Public Finance while Responding to Economic Aftershocks, OECD Journal on Budgeting, vol. 2010/2.

[2] Ch. Wyplosz, Fiscal Rules: Theoretical Issues and Historical Experiences, paper presented at the NBER conference on „Fiscal Policy after the Financial Crisis", Cambridge, July 1-15, 2011.

[3] C. Cottarelli (approved), Fiscal Rules-Anchoring Expectations for Sustainable Public Finances, IMF, the Fiscal Affairs Department, November 11, 2009.

[4] M. Kell, An Assessment of Fiscal Rules in the United Kingdom, International Monetary Fund, Washington DC, "Working Paper", no. 01/91, 2001.

define the current and investment expenditure in order to prevent possible abuses of the fiscal authorities, who may try to treat the part of current expenditures as investment (Działo 2009).

One of the varieties of sustainable budget rule are also deficit limits. Frequently, they take a form of a regulation that over a certain time (fiscal period); the budget deficit should not exceed a certain fixed, border value, expressed as a percentage of GDP. An example of such a rule is the deficit limit enshrined in the Maastricht Treaty, according to which the deficit in the Member States should not exceed 3% of GDP.

The expenditure rules make take various forms due to the considerable diversity of budget expenditure categories. The vast majority of these rules, however, concern the aggregate expenditure. Probably the most popular are spending growth limits, according to which government spending is to grow at a specified rate, regardless of the changes taking place on the revenue side of the budget. Expenditure rules may also concern particular types of expenditure and usually take the form of long-term limits imposed on various parts of budget spending.

The public debt expenditure rules are fairly uniform and practically not subject to modification. They are based on imposition of limits on the total level of public debt as a ratio of debt to GDP. The best-known public debt rule is the one included in the Maastricht Treaty and repeated in the Stability and Growth Pact according to which the public debt of EU Member States must not exceed 60% of GDP. A similar rule can be found in Poland and is enshrined in the Constitution. The ratio of public debt to GDP should not be higher than 60% of GDP.

4. Advantages and disadvantages of fiscal rules - effective fiscal rules

Each of the existing fiscal rules has advantages and disadvantages. In this context it is important to select rules used in a given country in such a way so as to use their advantages to the greatest extent and at the same time to try to minimize their disadvantages. The basic advantages of the fiscal rules include:

- The rules help reduce the tendency for the deficit and improve the condition of public finance sector, especially when they have strong legitimacy and are supported by mechanisms enforcing their adherence to the rules;
- The rules provide a market signal which increases the credibility of macroeconomic policy;

- The rules can help reduce the cost of raising capital through lower interest rates on bonds (which is the indirect effect of higher credibility of macroeconomic policy).

The fiscal rules have also the following disadvantages:

- Some rules result in reduced flexibility of fiscal policy (e.g. the budget deficit rules and public debt rules);
- The rules can lead to reduction of budget expenditures at the expense of capital expenditure;
- The rules may cause aspiration to "bypass" the rules by the so-called creative accounting, or development of extra-budgetary units to which budgetary funds would be transferred in order to spend these funds outside the central budget, etc.[5].

However, the rules usually combine the advantages and disadvantages; there is no rule that would be optimal. For example, the deficit rule based on the structural balance is flexible, sensitive to economic fluctuations, but complicated and not transparent (flexibility for the price of simplicity). The public debt rule is simple, transparent, but it is not enough sensitive to economic fluctuations and may contribute to the pro-cyclicality of fiscal policy[6].

Therefore, it is extremely important to select fiscal rules that would help to implement effectively the objectives set. In this context, it seems that an effective fiscal rules should have the following characteristics:

- The rules should be properly defined (a specific fiscal indicator, precise definition, rules of wide coverage with no exclusions which would reduce their effectiveness);
- The rules should be characterized by simplicity and transparency;
- The rules should be flexible (on the one hand sensitive to economic fluctuations but should also include escape clauses which allow actors to temporarily opt-out of the rule without leaving the rule entirely e.g. in the case of natural disasters;
- The rules should be the most suitable for the objective it serves;
- Conditions for enforcement of rules should be ensured;
- The rules should be supported by a consensus.

[5] IMF Annual Report 2009.

[6] IMF Annual Report 2010.

5. International fiscal rules (European Union)

Joining the Economic and Monetary Union required from the EU countries to fulfill fiscal criteria enshrined in the Protocol on the excessive deficits procedure, annexed to the Treaty on European Union (Maastricht Treaty), signed in 1992. The first criterion assumes that the budget deficit should not exceed 3% of GDP. Since this rule provides some exceptions, e.g. when a high deficit is being reduced in a permanent way and is clearly approaching the designated limit. It is allowed to exceed the limit when it was caused by a strong economic recession. The second criterion refers to the level of public debt and shows that the debt to GDP ratio should not exceed 60%. Also in this case there are exceptions, as long as the rate of debt reduction is strong[7]. Fiscal rules enshrined in the Maastricht Treaty were quite effective and in many EU countries resulted in a significant decrease in the deficit and debt. In 1993, the average deficit in the candidate countries to the euro zone was 5.5% of GDP, while in 1997 the average deficit amounted to only 2% of GDP. In 1999, all countries met the required criteria.

It was only the global economic crisis that caused a sharp deterioration of budget balances in EU countries. However, many countries (including the four largest: Germany, France, Spain, and Italy) maintained budget deficits close to or higher than 3% of GDP even during relatively good economic conditions (before the financial crisis).

Since the Maastricht Treaty has not defined what fiscal policy should be pursued by the EU countries belonging to the Monetary Union, in 1997, new fiscal rules were adopted, enshrined in the Stability and Growth Pact. The Pact imposed on euro area countries the obligation to prepare annual stability plans and convergence programmes for countries outside the Eurozone. The programs include scenarios of changes in public finances for several years, and the so-called medium-term budgetary objective (MTO). According to the objective, the target structural balance should be zero or positive (surplus or structural budget balance[8]) and the EU Council is required to monitor programs and make recommendations to take corrective measures in case of discrepancies between the actual state and the MTO.

The growing budget deficits and debt in many countries, resulting from the recent economic crisis, led the European Commission to strengthen fiscal discipline by introducing changes to the Stability and Growth Pact and in the

[7] The Treaty on European Union, www.europarl.europa.eu/parliament/archive

[8] Structural budget balance is a hypothetical value of the budget balance with potential economic growth.

national fiscal framework. The definition of "prudent fiscal policy," was introduced, that is the policy when nominal growth rate of spending does not exceed or is less than the nominal rate of economic growth from the period of several years. A provision was also added that countries with high levels of debt or excessive economic imbalance should improve structural balance by more than 0.5% of GDP annually and the "minimum acceptable rate of public debt reduction to 60% of GDP" was defined. In relation to countries which do not comply with the applicable rules, the sanctions were introduced in the form of non-interest-bearing deposit of 0.2% of GDP, which is then after two years upgraded to a fine if the country at that time did not follow the rules. There is also a threat to suspend access to funds from the Cohesion Fund. The Commission also proposed to introduce the so-called European semester, the review and evaluation of the budgets of countries and their plans for fiscal reform ex ante, prior to their implementation, which will not only foster a better coordination of fiscal policy, but also establish a more effective supervision[9].

6. Fiscal rules used in Poland

In Poland, the fiscal rules have been applied since 1997, when a provision on public debt appeared in the Constitution. According to the provision, "it is not permitted to contract loans nor provide guarantees and financial sureties, following which the public debt exceeds 3/5 of annual gross domestic product"[10]. The fiscal rule enshrined in the Polish Constitution, has the highest rank in the Polish legal system. This ensures a high efficiency of the rule, because even if the parliament adopts the budget law incompatible with a constitutional provision, such law will be put into question by the Constitutional Court[11].

Since 2004, Poland as a member of the European Union, is obliged to obey the rules enshrined in the Maastricht Treaty[12]. The legal status of these constraints is high, because they are superior to national law and very difficult

[9] Reinforcing economic policy coordination, European Commission, 12th May 2010.

[10] Polish Constitution of 2 April 1997,Journal of Laws No. 78, item 483, art. 216, para. 5th.

[11] In addition, compliance with the rule is to be achieved by applying the "Prudential and Reform Procedures", enshrined in the Public Finance Act. However, the provisions forbid (both central government and local government budgets) to borrow when the ratio of public debt to GDP exceeds the thresholds of 50%, 55% and 60% of GDP. These solutions are additional, next to constitutional provisions, fiscal rules, preventing violations of the constitutional public debt rule. See. The Act of 27August, 2009, on public finances, Journal of Laws No. 157 item 1240.

[12] The Treaty on European Union, www.europarl.europa.eu/parliament/archive

(almost impossible) to amend. This implies a potentially high effectiveness of fiscal rules enshrined in the framework of the EU law. In addition, it also implies the adoption of a widely used ESA'95 system of official statistics and the need to recognize the decisions of external entity (Eurostat) on controversial issues. In this way, the use of the so-called "creative accounting" is greatly limited which increases the effectiveness of internal fiscal rules, such as the constitutional rule.

However, the rules of the deficit and debt may lead to pro-cyclical policy, especially when the indicator underlying the rule has not been adjusted for fluctuations in the business cycle. First, because the nominal debt growth depends on the size of the deficit, the deficit increases during the economic slowdown/recession following the operation of automatic stabilizers. Therefore, when the economy is growing at a slower pace, in nominal terms, the debt is growing faster. Second, in the case of the debt limit in relation to GDP, the pro-cyclical effect results also from the operation of the denominator (the relation of public debt to GDP, mentioned above): with slower growth of GDP the same debt increase in nominal terms leads to a relatively high ratio of debt to GDP. Initially, when the debt level is lower than the limit, the restriction is almost imperceptible, which makes it possible to pursue a fairly expansive policy and may lead to an increased debt level. When due to the excessive deficit the debt will reach the debt limit, the fulfillment of the requirements of the rule results in the rapid increase of restrictiveness of fiscal policy. It is likely that this moment will fall in a phase of recession because then, the debt increase is the fastest. In such a case there is a need to reduce the deficit at a time when a more expansionary policy would be desirable. Therefore, the fiscal policy becomes pro-cyclical[13].

With effect from 1 January 2011, a new expenditure rule, the so-called discipline rule entered into force, by which the state budget expenditure is to increase every year up to the inflation rate plus 1 percentage point[14]. The rule will not, however, cover the so-called rigid budget expenditures, i.e. the expenditures enshrined in the Acts (today rigid expenditures account for 74% of the total expenditure), if these expenditures had been incurred before the expenditure rule was introduced. This applies also to the so-called general

[13] To eliminate the problem of pro-cyclicality, attempts are made to use rules based on measures of the structural deficit, i.e., adjusted for cyclical fluctuations. Such is the situation, for example in Chile, where in 2000 a rule was introduced to maintain a structural surplus of 1% of GDP. However, due to the uncertainty associated with the assessment of the cyclical economy situation, which leads to frequent changes in the estimations of the budget structural balance , this approach complicates the enforcement of the fiscal rule and reduces its transparency.

[14] The Act of 16 December 2010 amending the Public Finance Act and other Acts, Journal of Laws of 2010, No. 28, item 146, No. 96, item 620, No. 123, item 635 and No. 152, item 1020.

subsidy paid from the budget to local governments or expenditures on defense, as well as pension and health contributions paid for those on parental and maternity leaves as well as for persons with disabilities (the new rigid expenditures will be covered by the rule). The restriction will not cover expenses, which are difficult to predict, such as public debt servicing costs, contributions to the EU budget and international organizations, expenses reimbursed from the EU budget. With the rule of expenditure, the budget is to save PLN 3 billion in 2011 and PLN 5.5 billion in 2012. Were the rule of expenditure in force until 2015, the total budget savings achieved by reducing the increase of expenditure would reach PLN 45 billion. This rule is applicable until Poland is exempted from the so-called excessive deficit procedure[15].

It seems that in Polish conditions, the rule of expenditure has the most advantages because of its simplicity and clarity, and also because it does not contribute to an increase in pro-cyclical fiscal policy.

7. Conclusions

The considerations carried out in this article permit to draw the following conclusions:

- In many countries, the fiscal policy is largely pro-cyclical. One reason for this situation may be a difficult access to external funding, especially in developing countries. During the period of stagnation/recession the developing countries have limited liquidity because of their relatively low reliability. As a result, they are usually forced to reduce spending and cannot excessively increase the budget deficit. Therefore, in times of recession, developing countries are in a sense forced to conduct pro-cyclical fiscal policy.
- Another cause for pro-cyclical fiscal policy may be polarization of social preferences, resulting from unequal income distribution in society. Politicians represent various social groups, and the pressure exerted by various social groups on politicians may cause that they would make political decisions rational from the perspective of one social group, but inefficient in terms of economy and society as a whole. The pressure exerted on politicians is particularly strong during the period of economic expansion, when growing budget revenues increase the likelihood of implementing the requests of individual social groups.

[15] Gazeta prawna.pl, 4 January 2011.

- Conflicting interests between politicians of diverse preferences may give rise to excessive government deficits. When such a conflict exists between political parties, the politicians use the budget deficit as an instrument for their strategy aimed at preventing or at least impeding the acquisition of power by political parties which have different preferences with regard to the shape of fiscal policy. There may also be a common pool problem where the different groups of politicians/voters fighting for the use of budgetary funds induce the increase of the deficit.
- Diversification of interests of particular groups of voters and the politicians representing them is an important reason for the emergence of excessive government deficit. Politicians tend to use a common pool (taxes) to finance the needs of their own (local) voters. As a result, the particular region of the country receives great benefits from budget expenditure, but bears only part of the cost. There is pressure to direct public resources to those regions that are most strongly represented by political parties. The increase in spending and the deficit are the bigger; the more regions of the country are represented in the government (parliament).
- An important reason for pro-cyclical fiscal policy and excessive budget deficit is asymmetry of information and the agency problem. If voters do not believe politicians, suspecting them of corruption and grabbing political rent, they demand higher spending or tax cuts when the economy enters a phase of expansion. Otherwise, voters would be afraid that the profits from the healthy economy would end up mainly in the pockets of politicians. For the same reason voters do not allow for accumulation of financial assets generated during the period of expansion, they would rather have the government generate debt, which would force the government to use its funds to pay off the interest, instead of grabbing the political rent. This causes excessive growth of the budget deficit, public debt and the procyclicality of fiscal policy.
- Many countries have quantitative fiscal rules mainly to improve the reliability of the pursued fiscal policy and reduce excessive government deficit. The most commonly used fiscal rules include the budget deficit, public debt, and expenditure rules.
- Fiscal rules, if properly applied, can be an effective tool for fiscal consolidation. The effectiveness of the rules is largely dependent on the practical possibility of their non-compliance (“by-pass”). One can specify the conditions under which fiscal rules should demonstrate higher efficiency. Precisely formulated rules relating to the actual condition of the state budget and not to its predictions, and those that are legally authorized (enshrined in

the constitution) give a better chance for effective action in the form of lower budget expenditures and lower deficit.

- The weakness of the rules is the fact that they constrain the flexibility of fiscal policy (in the case of the budget deficit and public debt rules) as well as certain possibilities of avoiding the rules by creation of extra-budgetary entities (e.g. earmarked funds) which spend public funds by bypassing the central budget.
- The budget deficit and public debt rules used in Poland are simple and transparent, which can be regarded as their advantage. They have also high legal status. On the other hand, however, the major weakness of the rules is that they can lead to pro-cyclical fiscal policy.
- The expenditure rule, introduced in 2011, seems to be a good solution for the Polish public finances. It is also simple and transparent, like the fiscal rules, but does not have the drawbacks of the fiscal rules: the expenditure rule does not promote pro-cyclicality of fiscal policy. Consequently, the expenditure rule may be one of the instruments giving rise to the gradual reduction of budget deficit and public debt.

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Streszczenie

REGUŁY FISKALNE A EFEKTYWNA POLITYKA FISKALNA

Artykuł poddaje analizie i ocenie wpływ czynników politycznych na efektywność prowadzenia polityki fiskalnej. Czynniki te z reguły przyczyniają się do powstawania i utrzymywania wysokiego deficytu budżetowego i długu publicznego. Ponadto, poruszone zostały problemy wpływu reguł fiskalnych na zwiększenie skuteczności prowadzonej polityki fiskalnej. Reguły fiskalne poprzez ilościowe ograniczenie poziomu deficytu, wydatków rządowych lub długu publicznego mają zapewnić stabilność makroekonomiczną w gospodarce oraz poprawić wiarygodność prowadzonej polityki fiskalnej i redukcję nadmiernego deficytu budżetowego. Zaprezentowane zostały przykłady stosowanych reguł fiskalnych w UE i w Polsce oraz podjęta została próba oceny skuteczności tych reguł w procesie konsolidacji finansów publicznych.

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ZBIGNIEW PRZYGODZKI*

Differences in the Development and Investment in Human Capital in the Member States of the European Union

Abstract

Human capital and knowledge are most important factors of current development processes, contributing to the innovativeness and competitiveness of the economies. The important role of these factors was underlined also in Europe 2020 Strategy. However, due to immaterial character of investment in human capital and because of the high level of decentralization of human capital development policy, these actions are characterized by a relatively low efficiency. Thus, the aim of this paper is firstly to identify the importance of human capital development policy within EU policies. Secondly, it is to identify and conduct a comparative analysis of national differences in human capital development and to identify points of reference for key measures of the development in question. Thirdly, this paper is to specify models of human capital development policy from the perspective of how much involved local authorities are in its implementation and efficiency.

1. Introduction

Majority of economists share the view that resources of well educated and productive labour force currently determine economic development at regional level to a much greater extent than the reduction of costs of economic activity. In strongly urbanised societies, which clearly prevail today, the characteristics of local community defined by its innovativeness, prosperity, education,

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competences, flexibility, motivation, intellectual capabilities and interdependences, relations and mutual trust are decisive for the concentration of companies that wish to use common labour force resources to their advantage.

Concentration of human capital of adequate quality is an important reason for the location of businesses, especially innovative ones, which are the most desired by regions. Thus the answer to a difficult question, how to enhance the competitiveness of a region through the operations of competing economic operators is rather simple: we should strengthen human capital resources in the region. However, doubts arise in connection with one quality of human capital, i.e. mobility. Can we really impact the resources and their availability in a given time and place? By eliminating all barriers in the movement of persons among economies do not we increase the unpredictability of the return on investment in human capital?

Human capital, similarly to businesses, is inclined to concentrate; it even tends to form clusters. (Lucas 1988, p. 38). Thus, we may effectively invest in existing, localised human capital resources expecting economic benefits in return embodied in the agglomeration effects and network benefits. That is confirmed mainly by the data illustrating interregional differences in human capital development in the EU Member States and models of human capital development policies differentiated in terms of decentralisation (autonomy and involvement of local authorities in its implementation). In the paper, the Author shows these differences and specifies desired values of basic measures in selected fields of analysis. In the analysis of the efficiency of applied models of human capital development policy the Author uses results of studies conducted in Poland, Germany, Italy and the United Kingdom[1].

2. Different awareness levels of the importance of human capital for development

Globalisation of knowledge and technology gave grounds for a new type of economy: the knowledge-based economy. Globalisation, together with the phenomena and tools connected with it, led to the overvaluation of resources decisive for the dynamics and scale of development processes. Paradoxically enough, non-spatial processes of globalisation have increased the importance of

[1] Studies conducted under the grant of the Ministry of Science and Higher Education: Polityka rozwoju kapitału ludzkiego w regionie (Human Capital Development Policy in the Region, in Polish), No. 1839/B/H03/2010/38, Department of Regional Economics and Environmental Protection, University of Lodz, 2012.

factors and capitals the value of which is determined in territorial terms. (Pietrzyk 2000, pp.31-61). The main resource decisive for achieving competitive advantage, both from the point of view of macroeconomic theories and new regional economy, is human capital. (Romer 1990, pp. 71-102; Lucas 1966, pp. 69-75) Characteristics of regional communities determine the competitiveness of businesses in the global market and, by that, enhance the rate of globalisation. The paradox results from the evolution and nature of innovation which directly determine social and economic growth and development. Thus, the importance of human capital in purely economic terms ranks very high and greatly effects development processes. (Nowakowska, Przygodzki, Sokołowicz 2011, pp. 70-79).

The knowledge, however, is not sufficiently reflected in economic policies pursued by public bodies. We can observe the following dependence: the lower the level of territorial authorities the smaller their propensity to invest in human capital. There are many challenges facing main actors who shape our social and economic life in the area of development policy. Internationally, in Europe the problem was formally specifically addressed in the Lisbon Strategy. European Union Member States recognized that it makes sense to support the development of knowledge-based economy and factors that determine it. Since then, the subsequent most important EU strategic documents repeat the objective. Underinvestment in human capital resources was primarily one of the driving forces encouraging the decision makers to act. We may assume that the importance of human capital was appreciated at the level of transnational policy. EU development policy exploits characteristics and processes typical of human capital. Enhanced innovativeness of the EU economy depends mostly on the investment in human capital, in terms of basic knowledge, advanced knowledge and innovation. (Nowakowska, Przygodzki, Sokołowicz 2011, p. 18) However, bigger discrepancies in the perception of the role of human capital can benoticed in development policies of individual EU Member States where there is not a clear unanimity. Generalising from the point of view of 11 years, we can say that the importance is increasing[2]. Regional public authorities, independently of the type of the state (be it federal, regional or unitary), are much less inclined to invest in intangible values. Even in regional innovation policies we see higher propensity to invest in tangible infrastructure rather than to generate

[2] M. Słupińska, J. Fila, A. Tomaszewska, Z. Przygodzki, non-published papers in Polish, Human capital development policy in Italy (and respectively in: Germany, UK and in Poland) from regional perspective – objectives, actors, systems and tools, Studies under the grant of the Ministry of Science and Higher Education: Human capital development policy in the region, No. 1839/B/H03/2010/38, Department of Regional Economics and Environmental Protection, University of Lodz, 2012.

organisational, market or marketing innovation. Usually only the most developed regions stress the importance of human capital in their strategic documents and allocate spending for that purpose in Operational Programmes. Often the practice is to declare high importance of human capital in regional development policy and then to leave it out at operational level.

3. Different directions in investment in human capital in European Union development strategies between 2000 and 2010

In 2000 European Commission adopted a reform package known as the Lisbon Strategy. One of its main assumptions highlighted priorities connected with employment policy, R&D policy and economic growth. Analysing the Strategy we should draw special attention to high priority given to actions aimed at the improvement of the quality of human capital (Szymańska 2004, pp. 244-246; Budzyńska, Duszczyk, Gancarz, Gieroczyńska, Jatczak, Wójcik 2002, p. 10) For education the objectives of the strategy already at that time were consistent with the creation of the European Higher Education Area[3]. We may also note that the strategy urged universities to strengthen the links between R&D centres and businesses, to develop partnership behaviour for new innovative solutions, to invest in human capital through training, post-graduate studies, enhancing competences and skills[4].

The interim review of the assumptions of the Lisbon Strategy in 2005, which confirmed earlier conclusions of the Kok's Report[5], contributed to the amendments in the strategy. In relation to the three fields of action which the European Council treated as priority ones for the implementation of the Strategy,

[3] The creation of the European Higher Education Area was formally launched in 1999 with the signing of the Bologna Declaration and in practice the reform of higher education was already in place in 1988 when the Chancellors of European Universities signed the Magna Charta Universitatum (Bologna (Italy, 1988, http://www.bologna-bergen2005.no/Docs/00-Main_doc/880918_Magna_Charta_Universitatum.pdf).

4 These subjects were maintained and are continued in the subsequent programming periods which is confirmed by e.g.: Council Conclusions on the role of education and training in the implementation of the „Europe 2020" strategy, 2011/C 70/01; Education and training in a smart, sustainable and inclusive Europe, COM(2011) 902 final; Opinion of the Committee of the Regions „European cooperation in vocational education and training to support the Europe 2020 strategy, 2011/C 42/07; Supporting growth and jobs – an agenda for the modernisation of Europe's higher education systems, COM(2011) 567 final; Council Recommendation of 28 June 2011 on policies to reduce early school leaving, 2011/C 191/01.

[5] Facing the challenge. The Lisbon strategy for growth and employment, Report from the High Level Group chaired by Wim Kok, European Communities 2004.

the following specific areas were identified as supportive for human capital development[6]:

- investing more in knowledge and innovation (the importance of education was specially highlighted as it was stated that education and training are critical factors to enhance the EU long-term potential for competitiveness and social cohesion and hence these factors must be the leading ones in the programme of the Lisbon reform),
- unlocking business potential, especially of SMEs; the need was stressed here i.e. to create a more favourable business environment and to equip entrepreneurs with adequate skills,
- increasing employment opportunities for priority categories; the following priorities were identified: enhance the attractiveness of the labour market and increase employment, increase labour supply and modernise social protection systems, improve the adaptability of workers and entrepreneurs, increase investment in human capital through better education and skills.

The re-launched Lisbon Strategy stresses the importance of human capital as a factor which, if used effectively, can ensure economic growth and high employment[7]. The document highlights the need to focus even more on human resources which is confirmed by the conclusions of the European Council spring summits where we can read e.g.: „Europe must renew the basis of its competitiveness, increase its growth potential and its productivity and strengthen social cohesion, placing the main emphasis on knowledge, innovation and the optimisation of human capital"[8] and „human capital is Europe's most important asset"[9].

The re-launching of the Lisbon Strategy was accompanied by the changes in the way it was implemented. Member States became more responsible for the implementation. The new implementation mechanism for the re-launched Lisbon Strategy meant e.g. that each and every Member State was obliged to draft the so called National Reform Programme. The tool increased the efficiency of the implementation of the Lisbon Strategy both at national and at regional levels as not only Member States but also regions started to play an important role in it. As a result, investment in human capital became more focused and increased its share. In subsequent years the process got

[6] *Presidency conclusions, 23-24 March 2006*, European Council, Brussels, 24 March 2006 [CONCL 1 7775/06], pp. 6-11.

[7] Presidency conclusions – Brussels, 22& 23March 2005, European Council, Brussels, 23 March 2005 [CONCL 1 7619/05], pp. 2-7.

[8] Ibidem, p. 4.

[9] Ibidem, p. 10 and Presidency conclusions, 23-24 March 2006, European Council, Brussels, 24 March 2006 [CONCL 1 7775/06], p. 6-11.

strengthened. During the summit in Brussels in 2006, the European Council concluded that education and training should become the central element of the reformed Lisbon Strategy and resources should be directed to areas which offer the highest return on the investment and the highest value added. It was decided that universities and R&D centres will provide the basis for increasing the competitiveness of Europe and the leading role of the initiator and promoter of changes in education, research and innovation was entrusted to the newly established *European Institute of Technology (EIT)*[10]. Thus also the importance of lifelong learning was directly enhanced by the adoption of the *Lifelong Learning Programme* for 2007 - 2013[11].

Following the directions listed above, in March 2010 the European Commission adopted a new strategic document „Europe 2020". Strategy for smart, sustainable and inclusive growth. Human capital is one of the key postulates of Europe 2020. Among its five the most important strategic targets, the first three are connected directly with the investment or changes in human capital. The targets were formulated as follows[12]:

- the share of early school leavers should be under 10% and at least 40% of younger generation should have a tertiary degree;
- 75% of the population aged 20 – 64 should be employed;
- 3% of EU's GDP should be earmarked for R&D.

In order to ensure the implementation of these decisions, the document stresses the need for action in three priority areas, two of which directly refer to the need to increase the value of human capital and knowledge. The efficiency of their implementation will be decisive for actual competitiveness and the future of the European Union:

- smart growth: developing economy based on knowledge and innovation. Actions undertaken under this priority are designed to unlock European potential for innovation, to improve the outcomes of education, the quality and results of education institutions and also to use economic and social potential of digital society. These actions are to be delivered simultaneously at regional, national and European levels;

[10] Delivering On The Modernisation Agenda For Universities: Education, Research And Innovation, Communication From The Commission To The Council And The European Parliament**,** COM(2006) 208 final, Brussels, 10.5.2006.

[11] Decision No. 1720/2006/of the European Parliament and of the Council of 15 November 2006 establishing an action programme for lifelong learning, Official Journal of the European Union, L 327/45, in the following period the programme was continued under the title „An Agenda for new skills and jobs".

[12] *Europe 2020. A strategy for smart, sustainable and inclusive growth,* Communication of the European Commission, Brussels, 3.3.2010, COM(2010) 2020 final.

- inclusive growth: fostering a high-employment economy, ensuring social and territorial cohesion. The implementation of the priority will require modernisation and enhancing the role of employment, education and training policies and the systems of social protection by increasing the employment rate and reducing structural unemployment as well as increasing the sense of corporate social responsibility. In this context it is important to ensure the access to childcare facilities and care for other dependants of the working persons. The critical element will be the application of the model of flexible labour market and social security (flexicurity) and enabling people to acquire new skills to adapt to new conditions and potential career shifts. Combating poverty and social exclusion will require a lot of effort as well as reducing health inequalities to ensure that everybody can benefit from growth. Promoting healthy and active lifestyle of elderly people will be equally important for social cohesion and higher productivity.

Europe 2020 is a clearly pro-active and pro-competitive strategy designed to exploit the competitive advantage worked out in growth poles. That is why the need for a more focused approach is also noticed when it comes to the actors who receive support. In relation to that, numerous initiatives have been maintained and reinforced to increase the transparency, recognition and quality of competences and skills, to support the mobility of students and workers and to build up resources of innovative knowledge. The most important among them are: EQF[13], Europass[14], EIT, Erasmus, Leonardo da Vinci, and Grundtvig Programmes.

4. Differences in human capital development in EU Member States

Human capital is one among critical areas of intervention identified in Europe 2020 strategy. That is because the overall level of its development in various areas is insufficient and development discrepancies among Member States are substantial. Considering just two key areas of investment in human capital: education and lifelong learning we can see the importance of investment needs, especially when we look at competitive world economies.

[13] Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning, 2008 / C 111/01.

[14] Decision No 2241/2004/EC of The European Parliament And of The Council, of 15 December 2004 on a single Community framework for the transparency of qualifications and competences (Europass), L 390/6.

Education related priorities are linked mainly with the problems of early school leavers. About a half of pupils acquire secondary level qualifications which, however, often do not meet the needs of the labour market. Until 2020 the European Commission assumes the reduction of the drop-out rate to 10% against the current ca. 14%. Early school leavers are people at the age between 18 and 24 years of age who finished education only at lower secondary level or below it. Every year about six million pupils drop out of the education system[15].

Table 1. Early leavers from education and training - percentage of the population aged 18-24 with at most lower secondary education and not in further education or training[16]

Country/ Year	2000	2005	2010
European Union (27)	**17.6**	**15.8**	**14.1**
Belgium	13.8	12.9	11.9
Bulgaria	nda	20.4	13.9
Czech Republic	no data	6.2	4.9
Denmark	11.7	8.7	10.7
Germany	14.6	13.5	11.9
Estonia	15.1	13.4	11.6
Ireland	nda	12.5	10.5
Greece	18.2	13.6	13.7
Spain	29.1	30.8	28.4
France	13.3	12.2	12.6
Italy	25.1	22	18.8
Cyprus	18.5	18.2	12.6
Latvia	nda	14.4	13.3
Lithuania	16.5	8.1	8.1
Luxembourg	16.8	13.3	7.1
Hungary	13.9	12.5	10.5
Malta	54.2	38.9	36.9
Netherlands	15.4	13.5	10.1
Austria	10.2	9.1	8.3
Poland	nda	5.3	5.4

[15] Tackling early school leaving: A key contribution to the Europe 2020 Agenda, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Brussels, 31.1.2011, COM(2011) 18 final.

[16] Countries for which or which the indicators positively correlated with the variable they describe exceed the EU average are highlighted in grey. The abbreviation 'nda' stands for 'no data available'.

Portugal	43.6	38.8	28.7
Romania	22.9	19.6	18.4
Slovenia	nda	4.9	5
Slovakia	nda	6.3	4.7
Finland	9	10.3	10.3
Sweden	7.3	10.8	9.7

Source: own calculations based on Eurostat 2012.

Another still important problem for education is the share of people with higher education. We should remember that education directly translates into employment levels. From this point of view, EU priority is to increase by 2020 the percentage of people with higher education aged 30-34 from 33% to at least 40%[17]. The same indicators for the US and Japan are respectively 40% and over 50%, which shows the gap and the needs on the EU side. For individual levels of education, the lowest unemployment rate is recorded for people with higher education. It is estimated that until 2020 the percentage of jobs requiring high qualifications will increase to 35% in the EU while at present only 26% of workers have higher education[18].

[17] At present more than one third (33,6%) of persons aged 30 - 34 in EU-27 have higher education (in 2010), with women prevailing (37.2%) over men (30.0%). Eurostat 2012.

[18] In the age group 25-64. Supporting growth and jobs – an agenda for the modernisation of Europe's higher education systems, COM(2011) 567 final and Eurostat 2012.

Table 2. Share of persons with higher education in the age group 30-34 in 2000, 2005 and in 2010

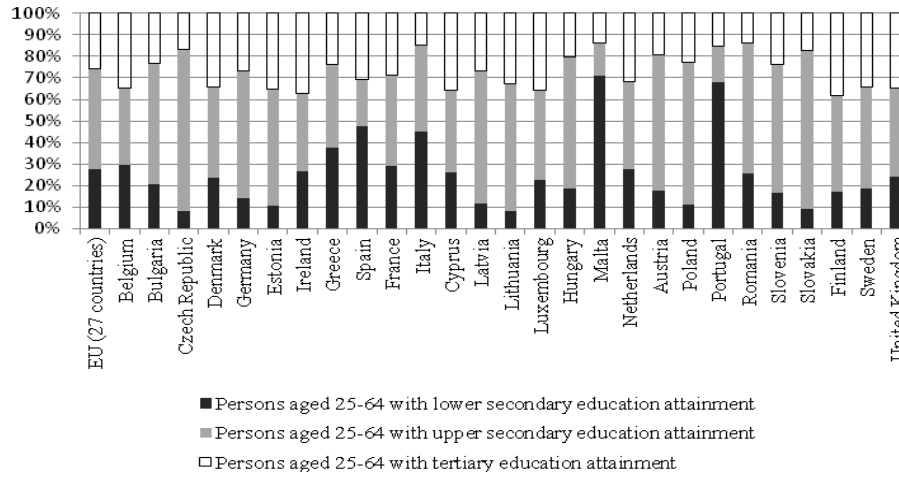
Country/ Year	2000	2005	2010
European Union (27)	**22.4**	**28**	**33.6**
Belgium	35.2	39.1	44.4
Bulgaria	19.5	24.9	27.7
Czech Republic	13.7	13	20.4
Denmark	32.1	43.1	47
Germany	25.7	26.1	29.8
Estonia	30.8	30.6	40
Ireland	27.5	39.2	49.9
Greece	25.4	25.3	28.4
Spain	29.2	38.6	40.6
France	27.4	37.7	43.5
Italy	11.6	17	19.8
Cyprus	31.1	40.8	45.1
Latvia	18.6	18.5	32.3
Lithuania	42.6	37.9	43.8
Luxembourg	21.2	37.6	46.1
Hungary	14.8	17.9	25.7
Malta	7.4	18.4	21.5
Netherlands	26.5	34.9	41.4
Austria	nda	20.5	23.5
Poland	12.5	22.7	35.3
Portugal	11.3	17.7	23.5
Romania	8.9	11.4	18.1
Slovenia	18.5	24.6	34.8
Slovakia	10.6	14.3	22.1
Finland	40.3	43.7	45.7
Sweden	31.8	37.6	45.8
United Kingdom	29	34.6	43

Source: own calculations based on Eurostat 2012.

There are also differences in investment in human capital development measured with the share of investment in education in the GDP of a given country. In eight EU Member States the percentage dropped compared against data of 2000 and 2008. Average public investment in human capital in the EU is 5.07% GDP. One regularity, which can be observed in all the EU Member States, is that the investment in question comes mainly from the public sector and the involvement of the private sector is marginal; only in the United Kingdom and in Cyprus it exceeded 1 percentage point reaching respectively

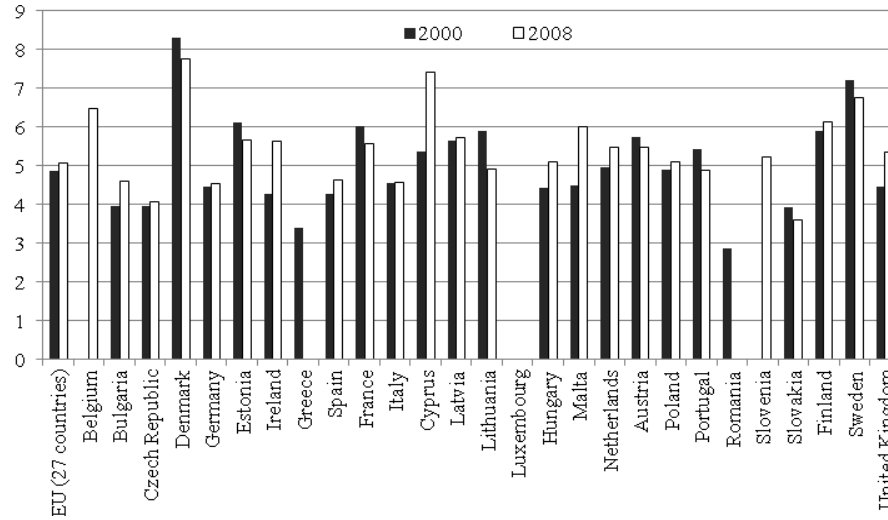
1.72% and 1.35% GDP. That is considerably less than in the US where the private sector contributes 2.1% GDP (2008).

Figure 1. Share of persons with lower secondary, secondary and higher education in the age group 25-64 in 2010



Source: own calculations based on Eurostat 2012.

Figure 2. Spending on Human Resources - total public expenditure on education s a percentage of GDP (empty box on the figure means no data)



Source: own calculations based on Eurostat 2012.

The efficiency of young people operations in the Community labour market should be shaped and backed up by formal education, especially at the level of postgraduate studies. Hence, in 2014-2020 supporting transnational learning mobility[19] will become an important priority. In particular, in the present situation when the mobility in question, assessed by those who learn abroad and potential readiness to go abroad in terms of e.g. ability to speak foreign languages are in general poor. Here there are also significant differences in the needs of individual countries.

It is estimated that in 2011 ca. 10–15% graduates of higher education institutions spent a part of their studies abroad while for vocational education and training the same can be stated for only 3% graduates. There is a need to further promote mobility, especially within the framework of VET[20].

In many EU Member States low internationalisation of education reflected in low propensity to study abroad is reinforced by a low percentage of foreign students in the student population (with several exceptions like: the United Kingdom, Austria, France or Germany).

Limited financial resources and insufficient ability to speak foreign languages hamper learning mobility. Investment in human capital in formal and informal education faces substantial communication obstacles. Average ability to speak foreign languages in secondary education in the EU is 1.5 and 13 countries are below the average.

[19] Learning mobility is defined as physical mobility and takes worldwide mobility into account. It was assumed that: (1) by 2020 an average of at least 20% of higher education graduates in the EU should have a period of higher education-related study or training abroad (including work placement), representing a minimum of 15 ECTS credits or lasting a minimum of three months, and (2) by 2020 an average of at least 6% of 18–34 year olds in the EU with an initial vocational education and training qualification (I-VET) should have had an initial VET-related study or training period (including work placements) abroad, lasting a minimum of 2 weeks or less if documented by Europass. Council conclusions on benchmark for learning mobility 2011/C 372/08, Annex: A reference level of European average performance (European benchmark) in the field of learning mobility.

[20] Education and training in smart, sustainable and inclusive Europe, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 20.12.2011, COM(2011)902 final.

Table 3. Students studying in another EU-27, Candidate country - as % of all students

Country/ Year	2000	2005	2009	2009*
EU (27 countries)	**2.1**	**2.3**	**2.8**	7.98
Belgium	2.4	2.6	2.7	10.92
Bulgaria	3.2	8.7	8.0	3.54
Czech Republic	1.3	1.8	2.7	7.35
Denmark	2.7	2.3	2.5	9.62
Germany	1.8	2.2	3.6	10.53
Estonia	2.5	3.6	5.2	3.72
Ireland	9.4	9.3	14.8	7.08
Greece	12.4	6.0	:	:
Spain	1.1	1.1	1.3	4.72
France	1.8	2.1	2.4	11.47
Italy	1.7	1.5	2.1	3.27
Cyprus	46.5	56.5	56.2	34.74
Latvia	1.3	1.7	3.3	1.27
Lithuania	1.8	2.6	4.0	1.39
Luxembourg	74.5	:	:	:
Hungary	1.7	1.5	2.1	4.25
Malta	8.2	7.8	11.4	4.34
Netherlands	1.9	1.8	2.5	7.18
Austria	3.8	4.4	4.5	19.38
Poland	0.9	1.3	2.0	0.79
Portugal	2.3	2.9	4.4	4.80
Romania	1.5	2.3	2.3	1.39
Slovenia	2.2	2.0	2.2	1.72
Slovakia	3.0	8.6	11.4	2.79
Finland	3.2	2.7	2.8	4.25
Sweden	2.7	2.3	3.2	9.35
United Kingdom	0.6	0.5	0.6	20.66

* - Foreign students as percentage of student population in the host country (%) - of tertiary education level

Source: own calculations based on Eurostat 2012.

Table 4. Average number of foreign languages spoken per student in secondary education in 2000, 2005, 2010

Country/ Year	2000	2005	2010
EU (27 countries)	**1.3**	**1.4**	**1.5**
Belgium	1	1.2	1.2
Bulgaria	1.1	1.2	1.2
Czech Republic	1.1	1	1.3
Denmark	nda	2	1.8
Germany	1.2	1.2	1.3
Estonia	2	2	nda
Ireland	1	1	1
Greece	nda	1.9	nda
Spain	1.5	1.4	1.4
France	1.5	1.5	1.5
Italy	1.1	1.4	2
Cyprus	2	1.9	2
Latvia	1.5	1.6	1.7
Lithuania	1.7	1.8	1.8
Luxembourg	2.5	2.5	2.5
Hungary	0.7	1	1
Malta	2.1	2.2	nda
Netherlands	nda	2	2.1
Austria	1.1	1.1	1.1
Poland	1.3	1.1	1.3
Portugal	nda	1.9	1.4
Romania	1.9	1.9	1.9
Slovenia	1	1.2	1.4
Slovakia	1.1	1.1	1.4
Finland	2.3	2.2	2.2
Sweden	1.7	1.7	1.8
United Kingdom	nda	1	1

Source: own calculations based on Eurostat 2012.

Cooperation of the EU Member States in education is based on the document *Strategic framework for European cooperation in education and training – ET2020*, adopted by the EU Council for Education, Youth and Culture in May 2009. The document sets the objective to increase the percentage of adults aged 25-64 participating in lifelong learning to the EU average of 15%.

In 2010, the share of persons aged 25-64 benefiting from any form of education or training was 9.1% (a drop by 0.7 percentage point compared against 2005)[21].

Table 5. Percentage of adults aged 25-64 participating in lifelong learning in 2000, 2005 and 2010

Country/ Year	2000	2005	2010
European Union (27)	7.1	**9.6**	**9.1**
Belgium	6.2	8.3	7.2
Bulgaria	nda	1.3	1.2
Czech Republic	nda	5.6	7.5
Denmark	19.4	27.4	32.8
Germany	5.2	7.7	7.7
Estonia	6.5	5.9	10.9
Ireland	nda	7.4	6.7
Greece	1	1.9	3.0
Spain	4.5	10.5	10.8
France	2.8	7.1	5.0
Italy	4.8	5.8	6.2
Cyprus	3.1	5.9	7.7
Latvia	nda	7.9	5.0
Lithuania	2.8	6.0	4.0
Luxembourg	4.8	8.5	13.4
Hungary	2.9	3.9	2.8
Malta	4.5	5.3	6.2
Netherlands	15.5	15.9	16.5
Austria	8.3	12.9	13.7
Poland	nda	4.9	5.3
Portugal	3.4	4.1	5.8
Romania	0.9	1.6	1.3
Slovenia	nda	15.3	16.2
Slovakia	nda	4.6	2.8
Finland	17.5	22.5	23.0
Sweden	21.6	17.4	24.5
United Kingdom	20.5	27.6	19.4

Source: own calculations based on Eurostat 2012.

[21] Council conclusions of 12 May 2009 on a strategic framework for European cooperation in education and training („ET 2020"), 2009/C 119/02.

In summary, we may conclude that enhancing the potential of the European economy we should simultaneously strive to achieve the commonly set objectives. However, the differences in the achievements so far in the field of human capital indicate that the policy should be pursued in a flexible way, adjusted to the real investment needs of countries and their regions. That is why the Europe 2020 strategy rightly assumes the necessity for a continuous dialogue among all levels of national administration for its successful implementation. „All national, regional and local authorities should implement the partnership, closely associating parliaments, as well as social partners and representatives of civil society"[22]. In other words, the European Commission clearly promotes a deeper than before decentralisation of development policy in the field of human capital involving EU resources.

5. Centralisation of human capital development policy and how it is made operational in selected EU Member States

Member States consider human capital development policy and the way it becomes operational as one of the most important areas of necessary EU structural interventions. Usually, like e.g. in Poland, human resources are diagnosed at the national level in subsequent programming periods, which provides the basis for human capital development strategies, and, then, for operational programmes. Human capital development tools are defined directly at the national level based on diagnoses generalised for the central level. It is important, however, to what extent the regions are involved or to what extent they engage themselves in the use of human capital as a factor of development. In the EU Member States, the differentiation of the scope, forms and the share of human capital development policy in the overall development policy is relatively high. These differences are mainly due to four reasons:

- territorial and organisational differences among Member States (different ways in which they are organised from the point of view of the autonomy of territorial units),
- differentiated organisational models of higher education[23],
- differences in the organisation of regional systems of innovation (Nowakowska 2011),

[22] Europe 2020. A strategy for smart, sustainable and inclusive growth, Communication of the Commission, Brussels, 3.3.2010, COM(2010) 2020 final.

[23] Organisational models of higher education suggested by e.g.: B. Clark, F. van Vought or D. Braun and F-X Merrien. (Thieme 2009, pp. 47-58).

- different perception of the importance of human capital as a development factor.

These differences and discrepancies in the intervention in human capital development policy in the EU Member States make it difficult to specify clear policy models and to assess their systemic disadvantages and advantages. Studies conducted in Poland, the United Kingdom, Germany and Italy allowed us, however, to identify some types of the applied policy in terms of the organisation of the system and its centralisation[24]. Taking account of the decision-making powers in identifying the objectives and in making them operational, we can distinguish the following types:

- fully centralised,
- centralised with respect of strategic objectives with certain discretion in the interpretation if operational objectives,
- decentralised - autonomous at regional level.

Centralised approach to the implementation of human capital development policy in a country limits the role of the regions only to being either a beneficiary of the policy delivered directly by the government administration in the country or a passive intermediary who transfers financial resources and administers tools adopted at the central level. The model is relatively highly effective when it comes to achieving goals but relatively little efficient. That is, probably, one of the reasons why progress in achieving goals, accompanied by concrete indicators, of the Lisbon Strategy and its renewed version is so small. At that time, governments of the Member States and EU bodies were the main actors responsible for the implementation of strategic goals. Recent two years and the conclusions of Europe 2020 strategy have shifted the responsibility more to the authorities at lower levels of the territorial structure of state organisation[25].

In the states with centralised model in place accompanied by some possibility to autonomously shape the human capital development policy, a region becomes an active actor of the policy in question. It independently makes operational the goals specified at the central level, using its endogenous potential. On top of that, the efficiency of the policy increases as it is possible to use its outcomes regionally by better adjusting the actions to the potential and needs of a given area. The advantage of the model is that regional actors get

[24] Wnioski na podstawie badań pt. Polityka rozwoju kapitału ludzkiego w regionie, No. 1839/B/H03/2010/38 (in Polish) (*Conclusions from the study on Human capital development policy in the region)*, Department of Regional Economics and Environmental Protection, University of Lodz, 2012.

[25] Europe 2020. A strategy for smart, sustainable and inclusive growth, Communication from the Commission, 3.3.2010, COM(2010) 2020 final, item 5.2.

ready to implement such policy in the future when external funding will no longer be available. However, it is hard to declare to what extent today's structures and actors remain unchanged in the future. We may assume that even if the present processes and structures turn out instable, silent knowledge connected with best practices will constitute an important value added for a region.

Decentralised type means human capital development policy is actively pursued simultaneously at national and regional levels. A region is a partner for central authorities and it is largely autonomous in translating strategic goals into operations. It can also define its own strategic objectives (different from those of the upper level) and the way they become operational[26]. The model makes the policy of human capital development relatively highly effective, although it may be less effective in terms of national or European objectives. Undoubtedly, investing in human capital in such an institutional environment should lead to the effects of sustainable growth.

6. Conclusion

What type of human capital development policy should we aim at? Should we use the model followed in the implementation of regional policy or regional innovation policy? Should the policy be presented in specific, dedicated regional documents, e.g. in the regional strategy of human capital development? The questions cannot be answered unambiguously, mainly because in the area in question it is hard to identify best practices to substantiate the justification with real life examples. The EU Member States rather universally, although usually unofficially, complain about low efficiency of investment in human capital. Hence, it is worth considering how the policy should be reorganised, bearing in mind, however, that in a knowledge-based economy, giving the policy up completely would be an „economic suicide". The problem tackles especially countries (e.g. Poland), where human capital development policy is defined at the central level and takes little account of the use of specific (strategic) resources needed to enhance the competitive potential of regions. Both the diagnosing and strategic planning take place at the national level without considering the specificity, needs and opportunities of individual regions. The implementation of operational documents and of goals is partly entrusted with

[26] Often operational weakness of local authorities in the model leads to the so called 'pushing out' of the policy of local authorities by the policy of the central government. (Nowakowska 2010, pp. 207-212).

the regional level. We might wonder whether such a policy structure is optimal from the point of view of actual needs and capabilities of regions which are so different. Should not we increase the importance of human capital development policy in the region by taking it out of other policies (general development policy of the region and regional innovation policy) where it is clearly marginalised and where its priorities lose in competition with infrastructural investment? The efficiency of currently implemented the so called soft investment is largely controversial. Perhaps more responsibility resulting from making the policy more regional and drafting regional strategic documents better tailored to actual needs and capabilities of a given region, could help adjust the policy to regional needs and would give it more empowerment. By that, we could increase its efficiency and effectiveness. For sure, such modifications would expand the scope of drafting human capital development policy at regional level, which would enlarge the catalogue of tools and optimise investment in building up innovative knowledge in the region, both basic and advanced, from the point of view of expected results. We may also assume that more independence and responsibility in decision-making when identifying regional priorities of human capital development policy could better adjust actions to actual needs of the region and would make its improvements more realistic thanks to more efficient monitoring and scrutiny of implemented operations.

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Streszczenie

ZRÓŻNICOWANIE POZIOMU ROZWOJU I KIERUNKÓW INWESTYCJI KAPITAŁU LUDZKIEGO W KRAJACH UNII EUROPEJSKIEJ

Kapitał ludzki i wiedza są dziś najważniejszymi czynnikami rozwoju decydującymi o innowacyjności i konkurencyjności gospodarek. Rola tych czynników została również podkreślona w dokumencie Europa 2020. Jednak z uwagi na niematerialny charakter inwestycji we wzrost wartości kapitału ludzkiego w połączeniu z dużym stopniem centralizacji polityki rozwoju kapitału ludzkiego działania te odznaczają się stosunkowo niskim stopniem efektywności. Stąd celem pracy jest po pierwsze zidentyfikowanie rangi polityki rozwoju kapitału ludzkiego w strategiach UE. Po drugie identyfikacja i analiza porównawcza między krajowych zróżnicowań rozwoju kapitału ludzkiego, wraz ze wskazaniem punktów odniesienia w zakresie kluczowych miar tego rozwoju. Po trzecie natomiast celem pracy jest wskazanie modeli polityki rozwoju kapitału ludzkiego z perspektywy oceny zaangażowania władz samorządowych w jej realizację i efektywność.

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The Concept of Sustainable Development and Its Impact on the Shaping of Modern International Relations through Global Agreements

Abstract

The goal of this article is a depiction of the process of the molding of the concept of sustainable development as well as a look at the influence that this concept has exerted on contemporary international politics, especially taking into account agreements of worldwide scope. This article is also an effort at demonstrating that the foundations of the concept of sustainable development can be traced to certain economic theories. The final section of this article is devoted to the characteristics of individual conferences initiated by the United Nations in order to promote enduring and sustainable development on a world scale. Also presented are the achievements of the individual conferences and their roles in demarcating universally obligatory principles and standards of sustainable development.

1. Introduction

The beginning of the 21st century was a period of several changes throughout the world—already initiated in the 20th century. It is a period of development and broadly understood transformations in many fields, such as the economy, industry, agriculture, the labor market, modern technology, and environmental protection. The process of world globalization has become exceptionally important. It is leading to the mutual penetration of world norms

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in the functioning of companies, the development of uniform standards, and the transfer of information in matters of greatest importance. A key position in all these changes is played by society, which stands to benefit or suffer frustration as a result of all the economic processes taking place. The role of the natural environment absolutely must be indicated at this point. As the natural area of human life it is often utilized in an inappropriate manner, which, as a consequence, leads to degradation.

All of the above aspects have contributed to the commencement of close cooperation among countries throughout the world as well as to the concluding of agreements and the calling of conferences of the highest order. The development of collaboration on a global level has borne fruit in numerous agreements that, in their essence, have assumed the implementation of many goals in matters relating to the economy, society, and the environment. Not all agreements have ushered in expected effects, but they have started a wave of development in social awareness in which care for the further development of mankind without harm to the natural environment is the only proper road that should be taken. Among dominant trends in matters of the rational use of natural resources, there is no doubt that a key role is played by the concept of sustainable development. The article below is an effort at bringing this concept closer.

2. The Concept of Sustainable Development: Genesis

The functioning of every civilization is, to a great extent, dependent on its environment and culture. Culture is the determinant of people's approach to the natural basis of all aspects of life, including the existence and development of Man. The conviction during the industrial era was that the economy is an element that is separate from the environment and that its development has played a role in pushing nature into the sidelines in the development of the economic sphere. A watershed in this reasoning did not occur until the looming of the global environmental crisis. Scientific research has proved that rapid demographic growth and an unproportionately large increase in economic growth aimed at the utilization of nature's resources are serious threats to the nature–related aspects of life as well as to the future development of civilization. However, there is still no answer as to whether or not negative aspects shall first make their appearance in the economic sphere and subsequently in the biological one, if economic conditions will undergo improper changes throughout the world as a whole or only in certain geographic areas, and ultimately if the destruction of natural economic conditions in one region will perhaps play a role

in improving conditions in other regions. Many pessimistically inclined observes have stressed that the world is inescapably approaching a limit threatening the very existence of *Homo sapiens* as a species beyond which changes will be such that the human organism will no longer be capable of adapting by way of further development (Wilson 2003).

Difficulties that make their appearance in any attempt to make a proper diagnosis primarily stem from the long duration and differing development cycles of nature, the economy, and culture. Studies relating to global environmental threats are usually conducted over a short period of time as compared with the cycles of an evolving nature. It is the limitations on influencing evolutionary processes in nature that have made it necessary to introduce changes in the economic sphere as well as in the social one. References to social culture have also made themselves known at this point. Without changes in the sphere of social culture there can be no talk of far–reaching transformations in the economy or revaluations in the social sphere that are, in fact, implicated by economic changes (Poskrobko 2005, pp. 28–29).

Any acceleration in changes taking place in culture usually occurs under the influence of various states of crisis. Significant changes over recent years in the awareness of society have been caused by global environmental threats. Cultural information, which has a major impact on social views, now includes theories and ideas that, as a consequence, have brought about the reshaping of the attitude of people to the world of nature. In disseminating such ideas an important role was played by environmental and social organizations as well as the United Nations.

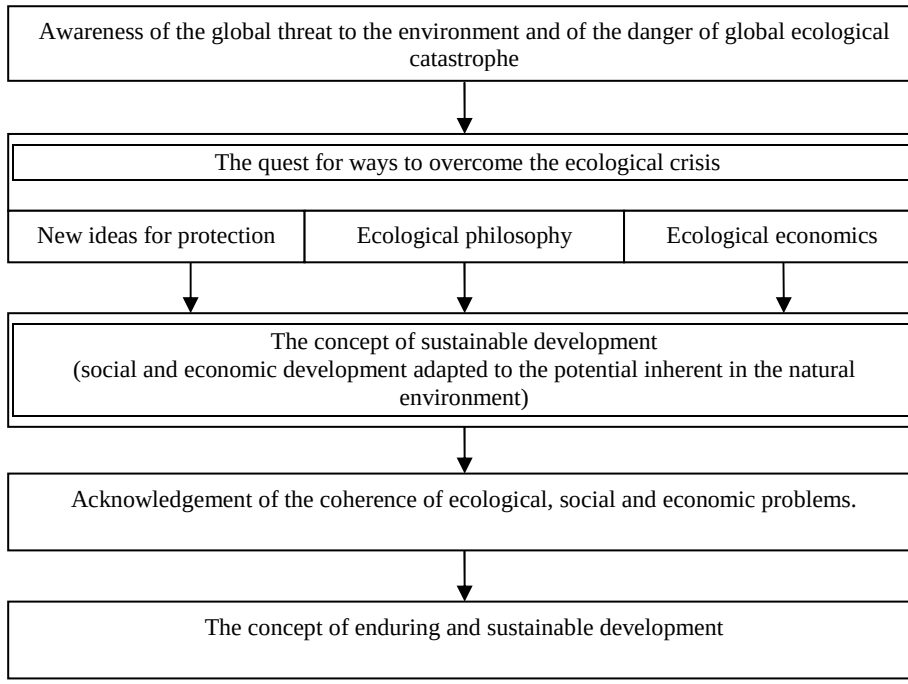
New theories regarding the biosphere started making their appearance at the turn of the 20th century. This gave rise to new philosophical (M. Bookchin), economic (K. Buolding), and nature–oriented (E. O. Wilson) ideas. A question was put as to should what already is be improved or is it perhaps a better solution to direct societies and economies onto new tracks.

As a result of these considerations, two streams of recommended and recognized solutions made their appearance—the biometric solution and anthropocentric solution. These streams are also universally recognized today.

The biocentric stream, based on a philosophy of all–embracing ecology, maintains that nature is the cradle and foundation of all life and the seat of evolution. This means that there exists a need to subordinate Man's economic and extra–economic activities to the potential created by the ecosystem in each process of nature organization. This stream is behind the inspiration for the emergence of new areas of activity—social ecology, ecological philosophy, and ecological economics. The biocentric stream has also created the basis for studying social and economic development, subject to conditions of limited

biosphere resources. However, as of yet, it has not developed recommendations that can be implemented in practice (Figure No. 1).

Figure 1. The process of shaping the concept of sustainable development

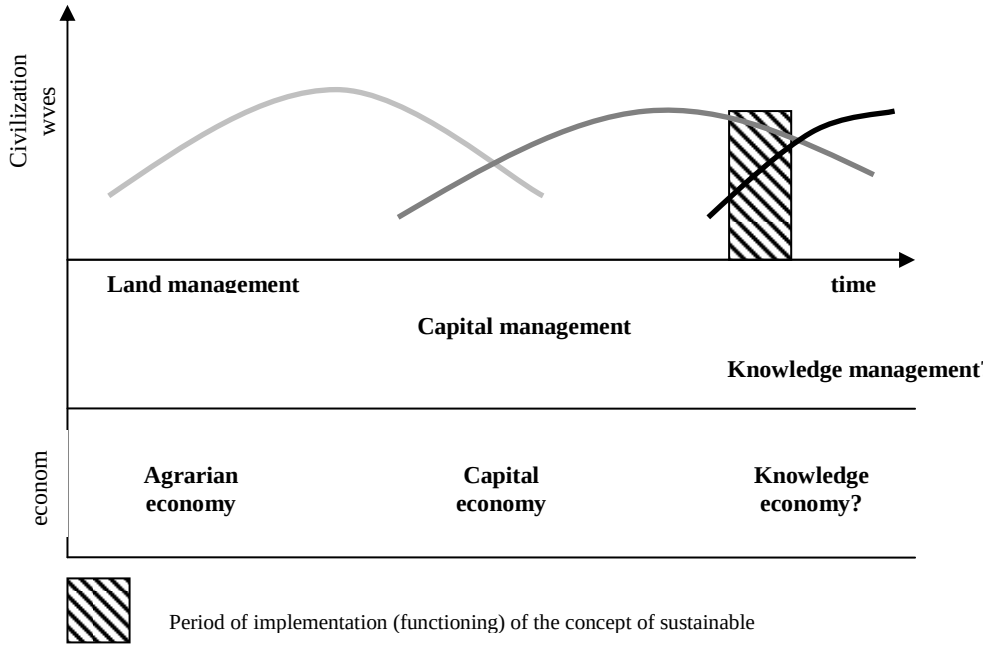


Source: B. Poskrobko, S. Kozłowski, *Sustainable development: Selected theoretical problems and implementation in light of European Union documents*, Warsaw, 2005, p. 30.

The nineteen–eighties were a time when it became obvious that without reforming such areas as the economy, the environment, and society, it will not be possible to overcome the worldwide environmental crisis. It was during this period that the concept of enduring and sustainable development, based on the assumption that contemporary knowledge makes it possible to consciously shape all components of the macro–system by Man, especially restrict social and economic pressure on the environment and strengthen the ecosystem, made its appearance.

One might risk the statement that the concept of enduring and sustainable development is a bridge between the capital–oriented economy and the future–oriented economy, which will commence studies on economic processes characteristic of the post– industrial civilization. The future may mean the replacement of the capital–oriented economy with a knowledge–based economy (Poskrobko 2005, p. 31) (Figure No. 2).

Figure 2. The Concept of Sustainable Development as a Bridge between the Industrial and Postindustrial Civilization



Source: B. Poskrobko, S. Kozłowski, Sustainable development: Selected theoretical problems and implementation in light of European Union documents], Warsaw, 2005, p. 30.

3. The Concept of Sustainable Development in Light of Contemporary Economic Theory

The roots of the concept of sustainable development may be found in classic economics (D. Ricardo, T. Malthus, and J. S. Mill). Its representatives conducted a discourse on the limits to growth, while examining the falling output of arable land, taking into account its fertility and the relationship between arable land resources and population growth (Rechul 2004). In a later period, representatives of neoclassical economics (mainly W. Jevons), Marxism, institutionalism, and also Keynesian economics also took up this subject matter. The main credit should be awarded to representatives of the Roman Club. Today, sustainable development—one of the main subjects of economic and environmental studies—is primarily undertaken by ecological economics,

energy analysis, environmental economics, and other related disciplines (Jeżowski 2005, p. 57).

The definition of *sustainable development* differs from that of *balanced economic growth*. It was stated for the first time in the Brundtland Report—"Our Common Future"—in 1987. It is a generalized concept and, in its essence, means the "… path of human progress which meets the needs and aspirations of the present generation without compromising the ability of future generations to meet their own needs" (Estes 1993). The above definition clearly indicates that the economic and civilizational development of the present generation should not take place at the cost of exhausting nonrenewable resources and environmental degradation, but for the good of future generations, which includes the right to further development[1] (Mol 1999).

A more precise definition of sustainable development is detailed in Agenda 21, ratified at the Rio de Janeiro summit. It looks at the principles of sustainable development in forty chapters of detailed recommendations. Possibilities for introducing this concept into the real world were confirmed by the successive United Nations conference in Johannesburg in 2002 (Poskrobko, 2005, p. 31).

The definitions for enduring and sustainable development stress and identify two qualities of this concept—**permanence** and **sustainability**.

The basic pillar of exceptionally great importance for the category of sustainable development (enduring development) is *permanence*. Essentially, this is a question of decisions relating to the ethical premises of permanence that entail intra–generational justice and inter–generational justice, as well as justice with respect to non–personal entities. An important role is also served by assumptions in the area of substitutionability among services rendered by nature capital and forms of social capital as well as the problem of irreversible processes (Jeżowski 2005, p. 58).

Sustainability, for its part, signifies the need, or even the necessity, of maintaining and creating proper—the most appropriate from the point of view of management—effects. According of B. Fiedor, this is not a question of balance in light of the theory of growth, but a much broader understanding that may be called a "qualitative dimension." Sustainability so–understood is primarily the achievement of economic and social objectives while maintaining a high quality

[1] www.bsp-pl.org –*A sustainable development strategy for Poland up to the year 2025: Guidelines for ministries developing sector strategies*, Ministry of the Environment, Warsaw, December 1999.

of the natural environment and the securing of accessibility to its resources, taking into account the dimension of time and space (Fiedor et al. 2002).

In connection with systems theory, it may be stated that sustainability is primarily a reference to development links in a macro–system—i.e. the environment–economy–society—and inside each and every one of those subsystems (Poskrobko 2007, p. 22).

In ecological economics (a socio–economical discipline concerned with environmental protection and sustainable development) it is possible to identify three assumptions (conditions connected with sustainable development) presented as a problem of hierarchically coupled character.

They are:

1. The maintaining of a permanent economic scale in terms of its life–supporting environmental system,
2. The maintaining of a just distribution of resources and opportunities not only among members of the present generation, but also among the present and future generations and, to a certain extent, between people and other species, and
3. The maintaining of the efficient allocation of resources in time (Norton et al., 1998).

Simplifying, this means an appropriate scale of human activity, reliable and just distribution among generation and species, and the efficient allocation of natural–market and non–market resources (Collados and Duane1999, pp. 441-460.). The assumptions of ecological economics are unrealistic, however. This is because each and every use of nonrenewable resources undermines the principle of permanence that, as was mentioned earlier, is a basic pillar of sustainable development. It is an obvious fact that Man, in his economic activity as well as during consumption, usually reaches for natural assets of key importance. Thus, restricting the scale of consumption or use must have a significant impact on the functioning of the market and the distribution of income within the framework of the present generation and also between generations (Stewen 1998).

A closer to real life or, more importantly, possible approach to the concept of sustainable development is presented by neoclassical environmental economics, which concentrates on economic permanence and economic growth (the quest to an optimum prosperity).

Environmental economics, in its turn, defines sustainable development as subject to conditions of weak permanence assuming that nature–based capital and capital as generated by Man may be substituted for each other. The permissibility of mutual substitution and supplementing between these production factors opens up possibilities for economic growth. Only weak

permanence, where nature–based capital may be replaced by generated capital makes possible economic growth and sustainable development. This approach is very far from the view of ecological economics, which is illustrated by a statement made by H. Daly (2002). In his view, economic growth does not solve the problem of poverty, for example, because growth in GDP ultimately causes a more rapid growth in environmental and social costs than growth in the benefits of production (Daly 2002).

At the present phase of study on enduring and sustainable development, this concept may be understood as a way of organizing economic activity, and using and shaping possibilities offered by the environment, as well as the organizing of social life so as to guarantee the development of future production processes, management systems, the permanence of natural potential, and the perfecting and, in the more distant future, maintaining of a high standard of living of society (Poskrobko 2007, p. 22).

Sustainable development is not only environmental protection in its traditional sense. It is primarily "development" delimited by a framework of ecological space, where economic, environmental, and social processes are taken into account and mutually penetrate each other—a process safely and favorable influencing the development of Man, the environment, and the economy. Thus, it is a "stimulator" of progress in its broad sense. It also appears as a way of living and something of a form of ethics allowing for the making of choices from among known forms of consumption and production in today's world. Sustainable development is also a "fad." This is because today's consumer considers an environmentally–friendly product as something that is safe, healthy, and even modern[2] (Mol 1999).

Sustainable development is not some clearly defined and final objective—a limit that society must reach. Rather, it is a process spread out over a long period of time (years or maybe even centuries) and generations.

Presently, it is possible to find over one hundred definitions and interpretations of sustainable development. This is a sign of a significant problem in perception, both in reality and in practice, because sustainable development may be examined in many ways. The concept is becoming increasingly popular, comparable with the popularity of the concepts of "environment" and "environmentally–friendly" of a decade ago. It is also for this reason that one often comes up against difficulties in defining if this is an economic–ecological category or simply a marketing gimmick (Jeżowski 2005, p. 58).

[2] Ibid.

4. The Ethical Basis of Sustainable Development

A positive attitude by Man with respect to nature and the natural environment is provided by the teachings of religions such as Taoism, Buddhism, Hinduism, Jainism, and is also present in Christianity. St. Francis of Assisi is a good example. In 1979 he was announced the patron saint of ecology by the Roman Catholic Church. There are also the teachings of Pope John Paul II. Questions tied with care for the natural environment found their way into the *Centesimus Annus* encyclical of May 1, 1991 in which John Paul wrote "Equally worrying is the ecological question which accompanies the problem of consumerism and which is closely connected to it. In his desire to have and to enjoy rather than to be and to grow, man consumes the resources of the earth and his own life in an excessive and disordered way" ("Dlaczego rolnictwo w Polsce sprzyja ochronie ptaków?" [Why does Polish agriculture foster the protection of birds?], *Ogólnopolskie Towarzystwo Ochrony Ptaków* [Polish Society for the Protection of Birds], p. 2.).

Ethical principles that play a part in achieving sustainable development have been identified by the creators of *permaculture*. Permaculture is a system of design for sustainable human settlement (gardens, farms, villages, and even towns). Two Australians—Bill Mollison and David Holmgren—developed this system in the nineteen–seventies and are responsible for its launching. The name *permaculture* is derived from two English words: *permanent* and *agriculture*[3]. Permaculture is characterized by the following ethical principles:

1. Care of the earth,
2. Care of people,
3. The just distribution of surplus, and
4. Limiting consumption to a minimum.

Care of the earth should be understood as caring for all living things, but also for the inanimate environment. This principle encompasses plants and animals as well as the soil, air, and water. Care for people, for its part, should be understood as satisfying their needs, including food, shelter, education, motivating work, and interpersonal contacts (Berdo 2006, p. 20).

Bill Mollison also identified the following ethical principles relating to natural ecosystems:

1. Absolute protection of natural forests,
2. Intensive renewal of degraded ecosystems,

[3] Seeds of Change, http://www.seedsofchange.com/about/research_farm.asp, November 13, 2005.

3. Establishing systems for the needs of Man, even on the smallest used piece of land, and
4. Founding nature reserves for rare and threatened species of plants and animals.

The idea of permaculture also encompasses a "life ethic," in line with which each and every living being has value in and of itself (e.g. a tree has value in and of itself, even if it does not represent any economic value).

The ethical principles proposed by the creators of permaculture have the following application in the design of sustainable ecosystems:

- Foreseeing the long–term consequences of actions and planning to achieve enduring effects,
- Primarily raising local species of plants and evading invasive species,
- Establishing multi–species cultivation,
- Promoting social responsibility and helping people become independent,
- Forestation and soil recultivation,
- Recycling waste,
- Seeking appropriate solutions, not concentrating on problems, and
- Design of small and efficient systems that do not require large outlays of work and energy.

5. Sustainable development as the goal of global agreements

The United Nations Conference on Environment and Development was held in Rio de Janeiro in 1992. It is universally known as the "Earth Summit." The ideas and principles of sustainable development were discussed and ratified in their binding form. The most important achievement of this meeting of state governments was the *Declaration on Environment and Development* that was negotiated. It confirms the currentness of the Declaration of the United Nations Conference on the Human Environment and defines twenty–seven general principles of global sustainable development[4].

The Rio Declaration and the above principles were supplemented by a set of 2,500 recommendations for states, governments, intergovernmental and international organizations, and for society, known as the "**Agenda 21 – Action Plan for Global Sustainable Development for the 21st Century**." This set,

[4] www.poznajemyonz.pl – UN Awareness Action. A list of principles of sustainable development as approved in the Declaration on Environment and Development at the Earth Summit in Rio de Janeiro in June of 1992. It is accessible on the Web pages of the United Nations – http://www.un.org/en/

better known as simply "Agenda 21," is a key document promoting the concepts of sustainable development and environmental protection. It consists of guidelines for the development of regional, national, and local sustainable development strategies.

Agenda 21 is subdivided into four sections. Each makes reference to a separate, albeit mutually integrated, sphere of development, specifically:

- The Social and Economic Dimensions,
- Conservation and Management of Resources for Development (questions relating to arable land, forests, the rural countryside and agriculture, endangered ecosystems, and protection of the oceans and inland waters),
- Strengthening the Role of Major Groups, who implement sustainable development (trade unions, nongovernmental organizations, scientists, ethnic groups, youth, and women), and
- Means of Implementation of sustainable development encompassing financial means, technology transfer, training, legal mechanisms and instruments, international law, etc. (Ciechanowicz 1999, p. 36).

Agenda 21 presents basic policy assumptions as well as programs aimed at achieving balance among such elements as consumption, world population numbers, and the earth's capacity for the further evolution of life. Agenda 21 stresses the fact that environmental changes are, to the greatest of extents, dependent on factors such as consumption, technology, and changes in the demographic structure. Ways of mollifying the impact of inefficient models of consumption in certain parts of the world have been identified, as have ways of simultaneously enticing others towards accelerated, but sustainable development. Also presented were guidelines relating to fighting environmental degradation in land, in the air, and in water, and the preservation of forests and the diversity of species populating the Earth[5]. Agenda 21 is something of an appeal calling for action against all the key problems of present times as well as an effort at readying society for future challenges (Wysokińska and Witkowska 2004, pp. 14–15).

The most important problems in the matter of implementation of principles of enduring and sustainable development:

1. International cooperation aimed at accelerating enduring and sustainable development as well as the introduction of relevant internal policies in developing countries. A key area of work on the part of economic development should be the creation of a nurturing climate to achieved the goals specified in Agenda 21 with respect to environmental protection and development through:

[5] *Eko–Bałtyk*, No. 3/4 (64/65), July/August 1999, pp. 9–10.

- The promotion of enduring and sustainable development as an effect of the liberalization of commerce,
- A mutual dependence between commerce and environmental protection,
- Maintenance of an appropriate level of financial resources for developing countries as well as the solving of the problem of international debt, and
- Support of macro–economic actions for environmental protection and development (Wysokińska Z. and Witkowska J. 2004, p. 10).

2. Changes in the model of consumption through:
   - Balancing the consumption and production models, and
   - The undertaking by individual countries of economic policies and strategies that will play a role in eliminating unsustainable consumption models.
3. Protection of natural resources that are the basis for the social and economic development of future generations[6].

It is obvious that each level of implementation of sustainable development (global, regional, national, and local) has its own recommendations adapted to development problems peculiar to that level and requiring the use of a different set of instruments as well as serving to involve various actors of the political scene in Agenda 21[7].

An exceptionally important success of the Rio Conference was the establishing of the Commission on Sustainable Development (a functional commission of the ECOSOC), thanks to which the development of a global action strategy in the area of environmental protection, especially climate change, biodiversity, and fighting desertification, has gained the proper momentum.

An unquestionably significant effect of the Conference was also the signing of the following conventions[8]:

- Convention on Biodiversity. The objective of this Convention is the preservation of the world's biodiversity and a sustainable exploitation of its elements, including the just distribution of benefits stemming from work on genetic material. It was on the basis of this Convention that the Protocol on Biosafety (international commerce in genetically modified organisms) was negotiated.

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[6] Communication from the Commission to the Council and the European Parliament, *The World Summit on Sustainable Development One Year On: Implementing Our Commitments*, Brussels, December 12, 2003.

[7] A sustainable development strategy for Poland up to the year 2025: Guidelines for ministries developing sector strategies, Ministry of the Environment, Warsaw, December 1999.

[8] www.poznajemyonz.pl – UN Awareness Action.

- United Nations Framework Convention on Climate Change. The essence of this Convention is the achievement of a level of concentration of greenhouse gasses in the atmosphere that will not be a threat to the world's climate system. The Convention is an initiative that goes far beyond the boundaries of a traditional understanding of the frameworks for environmental agreements. Implementation of its provisions comes down to the appearance of economic repercussions encompassing such sectors as power engineering, transportation, agriculture, forestry, and the maritime economy. Thus, it is not only an environmental convention, but also primarily an agreement of exceptionally great economic importance of significant political weight.

The Third Conference of the Parties (COP 3) was organized as a result of the failure to implement all of the provisions as contained in the Framework Convention. Its outcome was the development of a new legal instrument. It was approved under the name of the Kyoto Protocol. The protocol obligated industrialized countries to reduce emissions of the basic greenhouse gasses by at least 5.2%. It was assumed that this was to be achieved over the years 2008–2012.

The Kyoto Protocol came into force on February 16, 2005. It was ratified by 170 countries (excluding the United States and Australia).

Successive international instruments vital for protection of the environment and important to sustainable development were drafted in 1994 as a result of efforts aimed at implementing the decisions from Rio de Janeiro:

- United Nations Convention to Combat Desertification,
- Stockholm Convention on Persistent Organic Pollutants (POPs) expressed in action against the negative impact of POPs on the environment. This Convention was ratified in 2001 and is in force as of May of 2004.
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. The goal of this Convention is to control and prevent illegal trade in hazardous chemical substances. This Convention came into force on February 24, 2004.

The updating and vitalizing of global obligations regarding enduring and sustainable development as well as the assessment of ten years of achievements in implementing obligations taken up in Rio de Janeiro in 1992 took place at the World Summit on Sustainable Development, which was held on August 26 – September 4, 2002 in Johannesburg, Republic of South Africa. It was at this summit that possibilities for fighting poverty as well as hunger, which is intrinsically tied to it in many countries of the world, as well as health care and environmental protection on a global scale were looked into.

State representatives (almost 200 countries) took the decision to pass a global plan for reducing poverty while simultaneously respecting principles of protection of the natural environment. The driving force for developing this plan was the millennial development goals passed at the United Nations Millennium Summit held in New York. It included:

- The decision to increase efforts in the matter of boosting possibilities of using cheap and renewable sources of energy,
- The agreement on protection of selected regions of the seas and oceans aimed at the renewal of fish stocks, destroyed by the excessive fishing of certain species, by 2015,
- The agreement on the production and use of chemical compounds in ways that cause the least harm to human life and the environment, which will be implemented by the year 2020,
- The agreement on the need to slow the rate of extinction of rare species of flora and fauna by the year 2010,
- Affirmation of the principle of the assumed threat to the environment and the maintenance of care even when evidence of the appearance of a potential threat to the ecosystem is not unequivocal, and
- Affirmation of the principle of the joint, but varied, responsibility of all countries, who are obligated to pay the closest attention to saving the Earth's natural environment, where wealthy countries should support this goal financially to a greater extent than poor ones.

6. Rio +20

The United Nations Rio +20 Conference on Sustainable Development (UNCSD) is the most significant event in sustainable development this year. Discussion that will be conducted that shall be revolve around two main matters:

- The effective promotion of sustainable development, and
- Global institutionalization of collaboration in this sphere.

The designated date and venue are not random. May of 2012 marks ten years since the first World Summit on Sustainable Development in Johannesburg. Also worth remembering is that it was twenty years ago in Rio de Janeiro that the Earth Summit tool place. It ended in the signing of Agenda 21, which defines international principles of cooperation for environmental protection, which was discussed in greater detail in the above section of this article.

It is with reference to this event that the upcoming conference has been called Rio +20. Its main objective is the summing up of the past twenty years in terms of implementation of sustainable development as well as the identifying of new priority actions that shall be adequate with respect to the world's economic, environmental, and social challenges. The conference shall be held on June 20–22, 2012 in Rio de Janeiro.

All people and entities taking part in this year's conference shall concentrate on two priorities. The first is an economy based on "green" solutions that is playing a role in solving social problems, especially in the context of the elimination of poverty, in a sustainable way.

The organizers have developed a list of seven significant challenges in this matter[9]:

- Jobs – The need for creating new jobs and better working conditions, including especially "green" work places, and social inclusion.
- Energy – The mandatory guaranteeing of broad access to modern energy sources, taking into account renewable ones, as well as the efficient utilization of existing networks and resources.
- Cities – The growing need to support the sustainable development of cities, especially with respect to environmental and social questions.
- Food – The need for redefining global policies and philosophies in the context of the production, distribution, and consumption of food, especially in matters relating to hunger and growing population numbers.
- Water – The need for change in managing world fresh water resources, and the improvement of access to it as well as its quality.
- Oceans – The need for sustainable management of maritime resources and the protection of the oceans as an element stabilizing climate and nature processes.
- Natural disasters – The need for active preventive efforts and global cooperation in combating their economic, environmental, and social effects.

The second conference postulate is the institutionalization of global cooperation for sustainable development, which is intended to bring about greater harmonization and efficiency of actions. Among the things the organizers are proposing are[10]:

- Expanding jurisdiction and the financial potential of already existing institutions—i.e. the United Nations Environment Program (UNEP), the

[9] http://www.uncsd2012.org/rio20/7issues.html

[10] http://www.uncsd2012.org/rio20/isfd.html

United Nations Development Program (UNDP), and the United Nations Commission on Sustainable Development (CSD),

- Stronger collaboration in world climate change management, and
- A more active role for international financial institutions such as the World Bank, the Regional Development Bank, and the International Monetary Fund.

The ultimate outcome of this successive Earth Summit is to be the signing of a document entitled "The Future We Want"[11]. Among the things it proposes is the significant expansion of the jurisdiction of the United Nations Commission on Sustainable Development or its changing into the United Nations Council on Sustainable Development, and the launching of a new initiative—Sustainable Energy for All. This document also forwards proposals for creating a list of Sustainable Development Goals, modeled on the Millennial Development Goals, which would be defined through relevant indicators to be achieved by the year 2030.

7. Conclusion

An unequivocal conclusion crops up in summing up the above discussion. The **Concept of Sustainable Development** is an idea that has been evolving over the course of time and is continuously playing a part in molding modern international relations and introducing defined regulation into the world economy. This idea gave birth to many economic processes currently taking place on European markets and has acted to increase concern over the fate of future generations and their living conditions. It has also played an exceptionally important role in questions of state and public involvement in environmental protection, in its broad sense. There is no doubt that the most important outcome of the implementation of the assumptions of the described concept is the signing by the member states of the United Nations of agreements and declarations on implementing the goals and observing the principles of sustainable development that are the outcome of participation in United Nations conferences on enduring and sustainable development. The concept of sustainable development has brought about global changes in developing the policies of individual countries through greater involvement in the use of renewable energy sources, restricting the level of industrial pollution, increasing care over the preservation of natural resources, fighting neediness and poverty, and growth in employment through

[11] http://www.uncsd2012.org/rio20/content/documents/370The%20Future%20We%20Want%2012Jan%20clean%20_no%20brackets.pdf

the introduction of changes on the labor market as well as equal opportunities among social classes in finding work.

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Streszczenie

GENEZA KONCEPCJI ZRÓWNOWAŻONEGO ROZWOJU ORAZ JEJ WPŁYW NA UKSZTAŁTOWANIE SIĘ WSPÓŁCZESNYCH STOSUNKÓW MIĘDZYNARODOWYCH POPRZEZ ZAWIERANIE GLOBALNYCH POROZUMIEŃ

Celem niniejszego artykułu jest scharakteryzowanie genezy kształtowania się Koncepcji Zrównoważonego Rozwoju, a także wskazanie, jaki wpływ miała ona na ukształtowanie się stosunków międzynarodowych w zakresie ochrony środowiska i rozwiązywania problemów społecznych. Przedmiotem analizy są także teorie ekonomiczne, które stały się fundamentem dla wykrystalizowania się koncepcji zrównoważonego rozwoju. Poniższy artykuł jest także próbą wykazania, iż konferencje organizowane przez ONZ na rzecz trwałego i zrównoważonego rozwoju, stały się siła napędową do rozpowszechnienia tej koncepcji w skali światowej.

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TOMASZ CZAJKOWSKI*

The Influence of the European Union Funds on the Development of the Electronic Business Sector in Poland

Abstract

The article presents the analysis of the results of research concerning the influence of the European Union funds from the Operational Programme Innovative Economy ("PO IG – Program Operacyjny Innowacyjna Gospodarka" in Polish), measure 8.2. supporting B2B in electronic economy and measure 8.1. supporting economic activity in the range of electronic economy (eServices), on the development of the electronic business sector in Poland. Such important aspects as the innovativeness and competitiveness of the surveyed companies and their cooperation with the Implementing Institution – Polish Agency for Entrepreneurship Development (PARP – Polska Agencja Rozwoju Przedsiębiorczości in Polish) are covered. The conclusions from the research and the recommendations concerning the improvements for the future work and cooperation of the Implementing Institution of the financial support with the enterprises are also presented.

1. Introduction

The utilization of the ICT technologies for the economic activities affects the overall outlook of the global economy in a higher and higher way. The revolution of the information and communication technologies is being compared to the industrial revolution from the end of the XIX century, and the

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ICT were qualified by the scientists as the General Purpose Technology (GPT) in the same degree as the systems of energy supply (electricity or steam) or the transportation innovation (railway and cars). A broad utilization of ICT in the economic and social fields shaped what is presently being referred to as the 'New Economy'[1], and the directions of changes in the world economy occurring in recent years show the transition from industrial era economy to knowledge-based economy (Dworak 2010, pp. 6).

The policies of the European Union support the development of the ICT (the information and communication technologies) and the electronic business, which is connected with the ICT, in the highest possible way, due to the fact that these sectors are seen as vital to the EU economy, as a greater use of ICTs in all sectors in the economy helps firms to increase their efficiency[2] (European Commission. They are also reckoned as one of the sectors that can help the EU to become the most competitive economy in the world (so in other words to fulfill the renewed Lisbon Strategy)[3]. Moreover it can be assumed that the growing importance of the electronic commerce can decrease in some way the negative influence of the crisis on the global economy (Czajkowski 2011, pp. 76). That is why millions of Euro are spent each year in order to encourage the economic growth in those sectors and the Digital Agenda for Europe (DAE), which is one of the seven flagship initiatives of the Europe 2020 Strategy, was started by the European Commission. It defines the key role of Information and Communication Technologies (ICT) for Europe to succeed in its ambitions for 2020. The objective of this Agenda is to chart a course to maximize the social and economic potential of the ICT, most notably the internet, a vital medium of economic and societal activity: for doing business, working, playing, communicating and expressing ourselves freely[4].

A similar trend, concerning the development of ICT and e-business, is also observed in Poland. However the Polish realities are still different from those of the more developed countries and the money invested are not always spent in an appropriate way or the results of investments are not as positive as they should be in some cases. That is why it was decided to perform the research of the influence of the European Union funds on the development of the

[1] 'Information Economy Report 2007-2008, Science and technology for development: the new paradigm of ICT', United Nations, New York and Geneva, 2007.

[2] 'i2010 High Level Group, The economic impact of ICT: evidence and questions', European Commission Report 2006.

[3] 'i2010 – A European Information Society for growth and employment', COM(2005) 229 final, Brussels, 1.6.2005.

[4] 'Competitiveness and Innovation Framework Programme (CIP)', ICT Policy Support Programme, ICT PSP Work Programme 2011.

electronic business sector in Poland, to analyze the results of that research and to verify if the research hypothesis: 'The wide possibilities of applying for financial support within European Union funds can contribute to the development of e-business sector in Poland, which enables entrepreneurs to reach new customers and increase the sales, turnover and profit, at relatively low cost of investments', which was set for the purpose of the research, is true. The survey research was performed by Katarzyna Kopycka as part of her master thesis, which was written under the supervision of PhD Tomasz Czajkowski and PhD Aleksandra Januszkiewicz.

2. Methodology of the research

The verification of the hypothesis was done on the basis of the research conducted on the sample of Polish enterprises from the electronic business sector. The sample's selection was based on the database of companies, which applied for the financial support from the **OP IE** (**Operational Programme Innovative Economy**) priority axis VIII. This priority axis of the OP IE is connected with the information society and increasing innovativeness of the Polish economy. Its main goal is to stimulate the development of the digital economy through supporting the creation of new, innovative eServices, innovative electronic solutions for businesses and the reduction of technologic, economic and mental barriers for using eServices in the society. Under this priority axis the following measures can be distinguished:

- 8.1. Support for economic activity in the range of electronic economy – eServices;
- 8.2. Support for implementation of electronic business – B2B;
- 8.3. Counteracting Digital exclusion – eInclusion;
- 8.4. Ensuring Internet access at the 'last mile' level[5].

The companies selected for the research received the financial support from the measures: 8.1. and 8.2., and their data were taken from the database of the Polish Agency for the Enterprise Development (in Polish: PARP- Polska Agencja Rozwoju Przedsiębiorczości)[6].

The allocation for the VIII priority axis of Operational Program Innovative Economy amounts in total to almost 1,416 billion Euro, which is equal to 15% of all the funds devoted for the whole OP IE. In terms of the size

[5] http://www.parp.gov.pl, information obtained in August 2010

[6] http://www.web.gov.pl/bazy-wiedzy/, data obtained in August 2010

of funds it is the second biggest priority axis. According to the data from the detailed description of the programme, almost one third of these resources (32%) is designated for measure 8.2. supporting B2B in electronic economy, and 28% for measure 8.1. supporting eServices. Therefore, from the point of view of importance for the e-business sector development, these are the most crucial measures of the priority axis VIII, that allocate 60% of all financial resources. The total amount devoted for them is equal to 851 million euro. That was one of the reasons why it was chosen to analyze the companies that received the support from these measures, the second reason being the fact that the measures 8.1 and 8.2 have the greatest direct influence on the activities of the companies and also on the Polish economy as a whole[7].

The research was based on the questionnaire prepared on the basis of a thorough analysis of the reports of the European Commission and of the literature sources, among others the world's leading books concerning the electronic business – Laudon, et. al. 'E-commerce. Business. Technology. Society. Third edition' 2007 and Turban, et. al. 'Electronic Commerce 2006, a managerial perspective', and which was sent to the respondents in the electronic form. The questionnaire was divided into two parts. The first part contained questions about entrepreneurs' aims and difficulties in obtaining funds from the European Union, while the second one examined results of the utilization of the EU funds. The goal of the survey was to gather the essential information for analysis of the EU funds' impact on the development of e-business sector in Poland.

The database, from which the companies' data were taken, contained information about companies from different branches of electronic business that received the financial support[8]. Although, it accounted for almost 1200 companies, only just half of them included the data containing e-mail address or a website. Thereby, the total amount of companies, to which the questionnaires were delivered, was equal to 554. The e-mail with the questionnaire contained also an attached cover letter, which included the basic information about the goal of the carried out survey. In order to increase the number of companies willing to fulfill the survey, the cover letter ensured the confidentiality of data provided by the companies and informed the respondents that the obtained information would be used only for the scientific purposes.

[7] http://www.parp.gov.pl, information obtained in August 2010

[8] *http://www.web.gov.pl/bazy-wiedzy/*, data obtained in August 2010

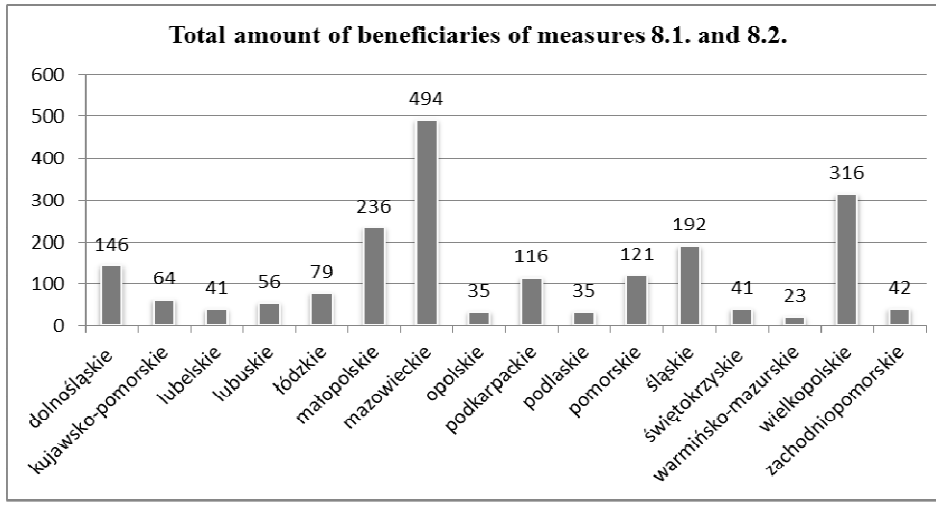
Table 1. Realization of the survey research

Correctly fulfilled surveys	Percentage calculated in relation to the amount of all sent surveys (N=554)
44	7,94%

Source: Own calculations based on the analysis of the survey.

The questionnaires were sent to the respondents in August 2010. The total amount of correctly filled surveys received from the respondents was equal to 44, which gave 7,94% of the survey realization index, as it can be seen from Table 1. Such result is acceptable when taking into account the research performed with the help of the electronic mail. The regional division of the beneficiaries who received the financial support in the years 2008 and 2009 can be seen in Figure 1.

Figure 1. Beneficiaries of the measures 8.1 and 8.2 of the OP IE with respect to the region of Poland

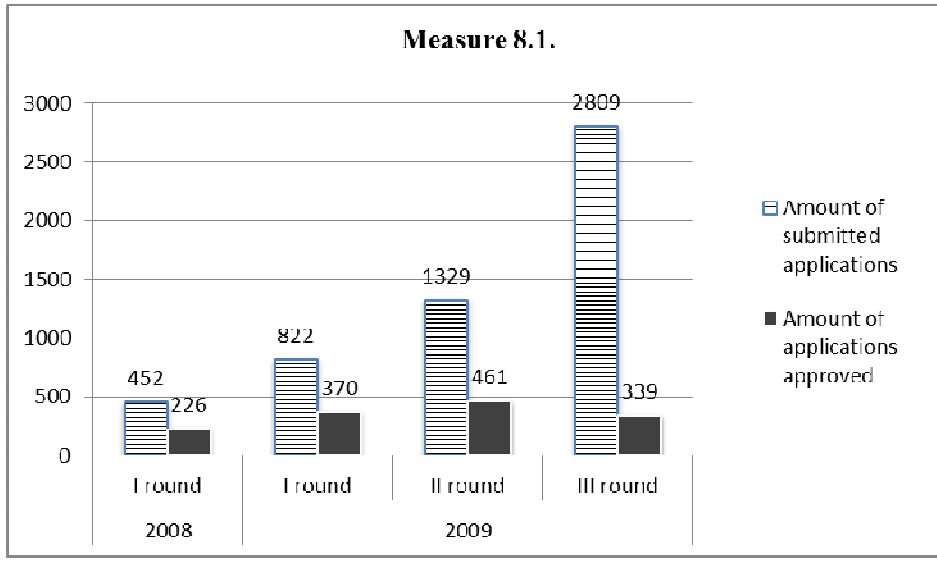


Source: Own work based on the information from PARP.

3. Results of the survey research

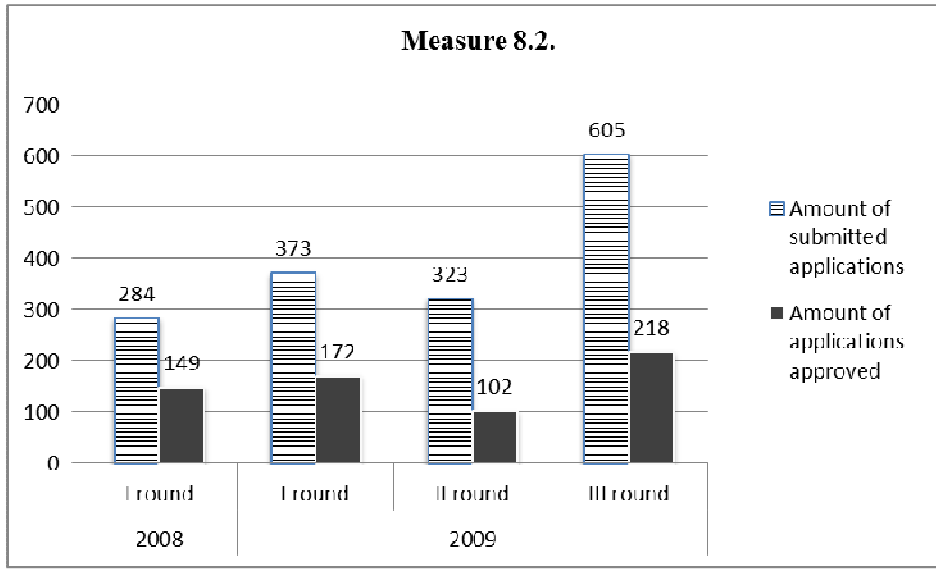
The research concerned the selection of companies that received the financial support within the priority axis VIII of the Operational Program Innovative Economy, and that was announced and completed in 2008 and in 2009. Therefore, the data only from these two years are taken into consideration in the article. The amount of project selections announced within particular years is different. In 2008 only one selection of applications was organized, while in 2009 3 selections were organized. Figures 2 and 3 present the amount of applications within the particular measures. In both cases, the amount of submitted applications had an increasing trend. Despite the fact that measures 8.1. and 8.2. demonstrated a huge interest among the potential beneficiaries, the amount of the approved applications did not increase at the same pace. It resulted from the limited financial resources designated for the projects within those measures and also from the quality of the submitted applications.

Figure 2. Submitted and approved applications within measure 8.1 of the OP IE



Source: Own work based on the information from PARP.

Figure 3. Submitted and approved applications within measure 8.2 of the OP IE



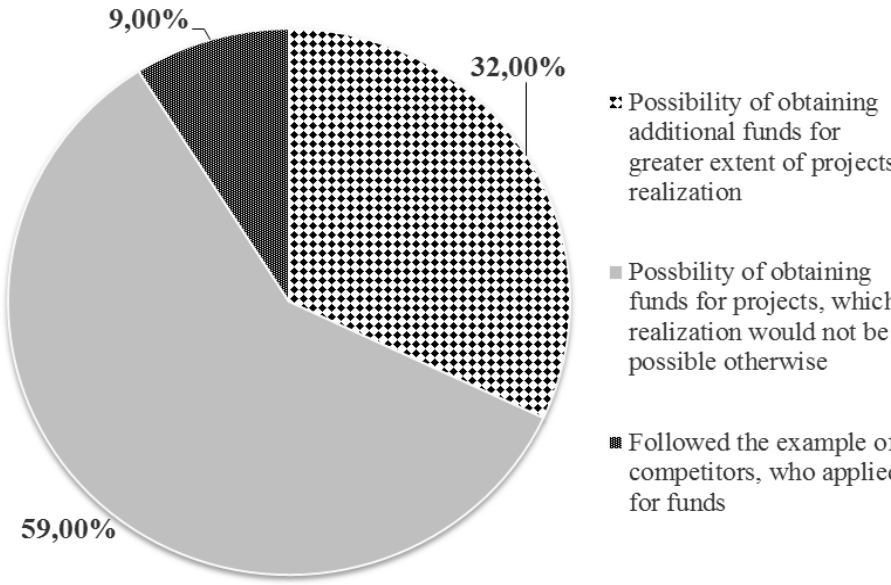
Source: Own work based on the information from PARP.

In terms of size, the great majority of the surveyed enterprises (92,86%) belonged to the group of micro companies, which employ up to 10 people. Only 7% of the respondents represented small enterprises, and there was none that represented medium or big companies.

4. Influence of the funds on the companies

Among the companies, which benefited from the support, the main purpose to apply for these funds was the possibility to carry out projects, which could not be realized from their own resources (59% - see Figure 4). Another reason, which motivated the entrepreneurs to reach the EU funds, was the opportunity to implement their projects on a larger scale. This reason was indicated by 32% of respondents. Only 9% entrepreneurs answered, that they followed their competitors' example, who received financial resources from the EU. None of the respondents mentioned other reasons, although there was such a possibility.

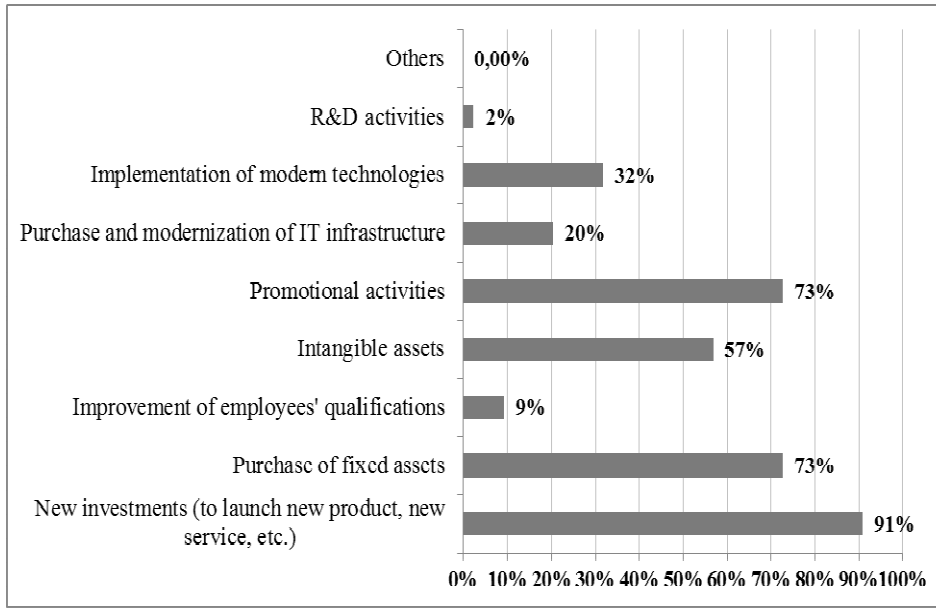
Figure 4. Reasons for using the EU funds by the surveyed companies



Source: Own calculations based on the survey results.

Majority of the respondents (91%) answered that the primary objective, to which the received EU funds would be allocated, was the new investments connected with launching new products or services, 73% of the surveyed companies intended financial resources for promotional activities or fixed assets. More than half of them (57%) wanted to spend the money on intangible assets, 32% on implementation of modern technologies and 20% on the purchases and modernization of IT infrastructure. Only 2% of the respondents wanted to spend the obtained financial support on the R&D activities. The detailed data can be seen in Figure 5.

Figure 5. Aims at which the financial support obtained from the OP IE would be/where spent by the surveyed companies



Source: Own calculations based on the survey results.

As a result of implementation of the projects co-financed from the EU funds, in 77% of the surveyed enterprises new workplaces were created. In most of them (68%) there were created from 1 up to 5 new positions for employees, while 9% of the surveyed companies created 6 to 10 new workplaces. Only in the case of every fifth enterprise the EU funds did not cause any workplace's creation and 9% of the respondents did not reply to this question. None of the surveyed companies reduced their employment, so as a conclusion one can state that the EU funds from the OP IE encouraged the enterprises to create new workplaces in most cases, and increased the level of the overall employment in the Polish e-business sector.

It is an obvious fact that the most important aim of all the companies is to generate higher profits. It is done either by getting new customers or by increasing the sales to the existing ones. Both cases are connected with the increase in their turnover. In the case of the surveyed companies the EU funds helped them to develop their companies, and as a result to gain new clients. In 75% of the surveyed companies the financial support from the OP IE helped them to attract new customers, 15,91% of the respondents did not gain new

clients, and 9,09% of them did not reply to the question concerning the improvement in the number of their customers.

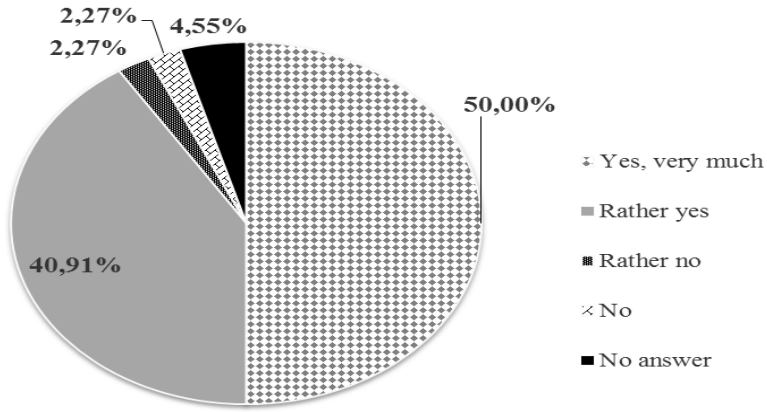
The companies were also asked about the value of their turnover after implementing the projects for which the support was granted. It appeared that in the case of 65,91% of the respondents, the turnover of their companies increased after they invested in new projects with money received from the EU funds. For some entrepreneurs, the period from the moment of receiving the financial resources up to the day of conducting the survey, was too short to assess, if the funds really changed the turnover of the company and that is why 11,36% of the respondents did not reply to the question about their turnover. However, every fifth of the respondents claimed, that the obtained funds did not influenced their turnover.

All in all, after receiving such results of research, it can be stated that the OP IE financial support in the case of the e-business sector was helpful to the enterprises and allowed to gain another argument for confirmation of the research hypothesis.

One of the main goals of the EU funds is to encourage the investments, not only connected with the utilization of the granted support, but also own investments of the companies after the financial support from the EU has been utilized. The research showed that more than half of the surveyed beneficiaries, exactly 59%, after realization of the projects financed from the OP IE funds decided on further investments in those projects from their own resources. This shows, that the EU funds created such opportunities for entrepreneurs to develop their businesses that they also chose to spend more money on further development of the projects started with the help of the EU funds, which is very positive.

Another very important issue which was subject to our research was the change of level of innovativeness and competitiveness of the companies which received the financial support from the OP IE. It appeared that by investing in new innovative IT solution, IT infrastructure, R&D activities and new projects, the enterprises gained opportunities to become even more innovative and competitive on the e-business market. According to the opinion of the respondents exactly half of the enterprises became much more innovative as a result of the received support, than it was before, and the next 41% said that it affected their innovativeness in some positive way. Less than 5% of the surveyed companies indicated that the EU funds did not have any influence on their innovativeness. The exact data can be seen in Figure 6.

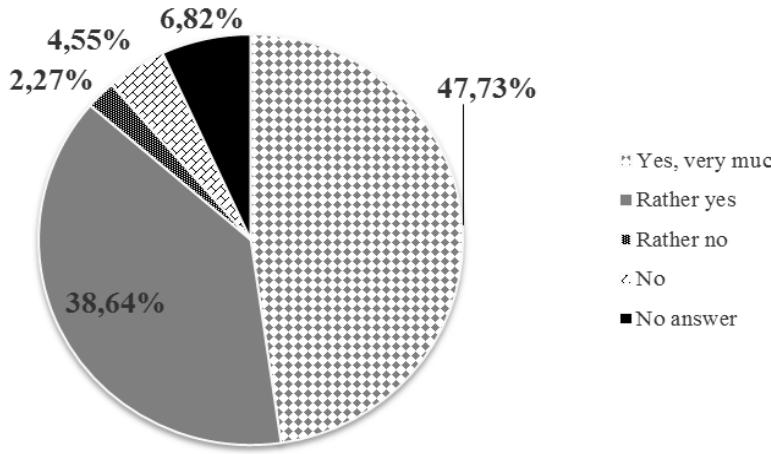
Figure 6. Increase of innovativeness according to the surveyed companies



Source: Own calculations based on the survey results.

As regards the competitiveness, more than 86% of the surveyed companies assessed the influence of the EU funds on their competitiveness as positive, while almost 48% of them claimed that they definitely improved their competitiveness to a large extent. Only, 2% answered that the financial support from the OP IE did not improve the level competitiveness of their businesses.

Figure 7. Increase of competitiveness according to the surveyed companies



Source: Own calculations based on the survey results.

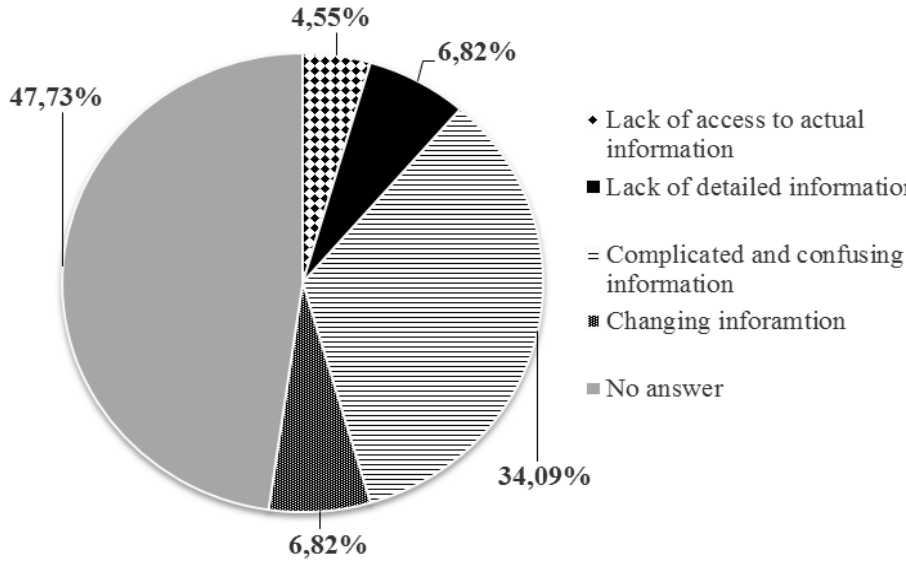
As a conclusion from the research presented above it may be stated that the general influence of the funds from the OP IE on the companies from the Polish e-business sector is highly positive and the research hypothesis is confirmed. However, the research covered also the aspects of the support of the Implementing Institution (PARP) for the companies that applied for the EU support, the level of cooperation with that institution and the level of the information available for the companies during the application process. The results of that research are presented in the paragraph below.

5. The information, application process and the cooperation with the Implementing Institution

It is very important that the cooperation of the companies with the Implementing Institution is at a good level due to the fact that it may result in proper utilization of the support granted for the companies and increase the range to which the funds that are granted for the country are being utilized, which in the case of Poland is currently still at an unsatisfactory level, as it is known even from the everyday newspapers. The conducted research showed that one of the reasons for such disappointing state in the case of the e-business sector in Poland can be the unsatisfactory cooperation level, support in the application process and the level of information available for the companies.

More than half of the respondents estimated the information availability as positive, 45% of the entrepreneurs considered, that the access to the essential information concerning the measures' realization is good, but only 2% that it is very good. More than one third (36%) of respondents was dissatisfied with the access to information, and 16% still claimed that it was not good enough and should be improved. The main reasons of the dissatisfaction were too complicated and confusing information. For more than 52% of the respondents it was difficult to clearly understand information given by the Implementing Institution (PARP). Complicated and confusing information was a problem for more than 34% of them. Lack of the detailed information and many changes introduced to the measures' regulations were arduous for 13,5% of respondents. Only 4,55% of the respondents complained about lack of the actual information. The rest of them did not even want to reply to the question concerning the information, which could have been caused by the fact that they did not think that their opinion would change anything. The detailed data can be seen in Figure 8.

Figure 8. Reasons for which the surveyed companies reckoned the access to the information as bad

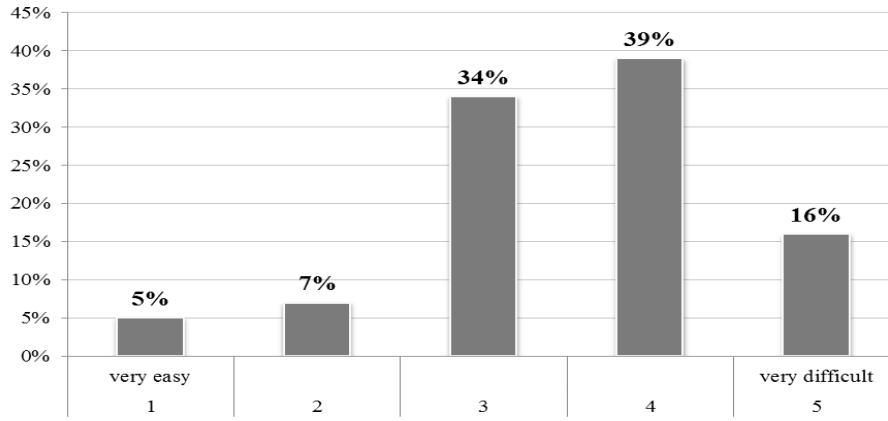


Source: Own calculations based on the survey results.

As regards the time of submitting the application forms, more than half of the surveyed entrepreneurs (57%) evaluated it as sufficient. However, for 27% of them it was short, and for 11% of them too short. Only 5% of respondents claimed, that it was long enough. Nobody complained for too long period of time for sending the applications.

According to the respondents, the most difficult step in the procedure of applying for the EU funds was obtaining of the specific and the detailed information. Quite often there appeared problems with business plan preparation, work with online applications' generator and with data preparation for the project application. Entrepreneurs complained about incorrect documentation for contests, which was incoherent and contradictory with other regulations, huge difficulties with online generator, which was not well prepared for working online and lack of the specific criteria. It indicated that the procedures were too difficult and complicated for the beneficiaries and should be changed in the future in order to facilitate the process of applying for the EU funds.

Figure 9. Difficulty level of fulfilling the application forms according to the surveyed entrepreneurs



Source: Own calculations based on the survey results.

As it can be seen from Figure 9, the entrepreneurs had difficulties with completing the application forms. Only 12% of them evaluated this procedure as easy or even as very easy. It indicated again that obtaining funds from EU was connected with arduous and excessive bureaucracy, which was incomprehensible for the beneficiaries.

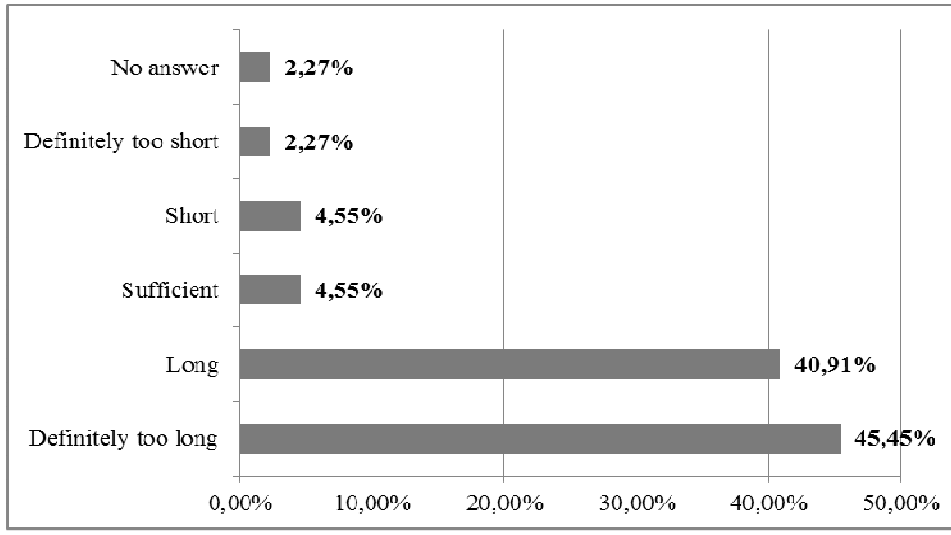
Due to the significant level of difficulties connected with completion of the application forms, the majority of respondents needed additional assistance with this process. It resulted in the fact, that 64% of entrepreneurs used some kind of help with completing and gathering the documents required for the contest. Only 34% of them prepared the documents on their own (2% did not want to reply to the question concerning help). The majority of assistance (for 48% of the surveyed companies), connected with the previously described question, was provided by the professionals, who were outsourced or even employed in the company. This shows that the application process itself generated additional costs for the companies. As most of them are small and micro firms it should be considered that the procedures are simplified in the future so that the additional costs for companies are reduced. For 7% of the respondents the main source of help was the employees of the Implementing Institution, while 11% of entrepreneurs asked their friends for help while completing documentation.

Only 65% of the respondents appreciated the usefulness and helpfulness of the manuals prepared by the Implementing Institution for the application process, and for 4,55% of the surveyed entrepreneurs it was very helpful.

However, still 32% of them claimed that it was not so helpful and the manual did not resolve their problems during the fulfilling of the application documents.

Another problem was the waiting time for the decision about the granted support and after that the waiting time for getting the transfer of funds after the acceptance of the projects. In the opinion of the surveyed companies that received funds it took the Implementing Institution too long to announce the results. As it can be seen from Figure 10, according to the respondents, this time was too long and should obligatory be shortened in the future.

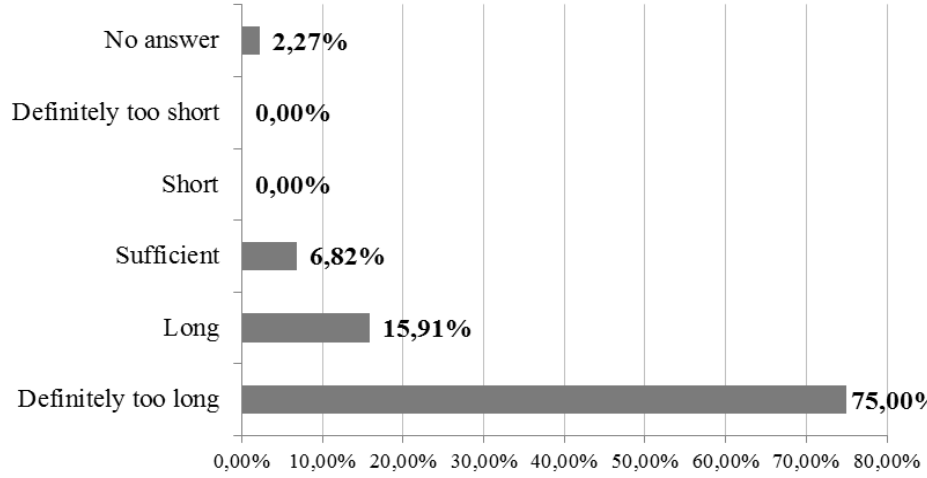
Figure 10. Assessment of the length of waiting time for the decision about the granted support by the surveyed companies



Source: Own calculations based on the survey results.

The waiting time for receiving the financial resources for projects, which were approved, was also definitely too long according to the surveyed companies (see Figure 11) and as a result, the entrepreneurs complained, that because of such a huge delays in receiving of the funds, they could not realize all the assumptions of projects or implement new ideas.

Figure 11. Assessment of the waiting time for the transfer of funds after the decision about the granted support by the surveyed companies



Source: Own calculations based on the survey results.

As a result of all the above mentioned problems with information or cooperation with the Implementing Institution, the opinion about it was differentiated. However, the biggest group of entrepreneurs complained about bad cooperation with the Implementing Institution (38%), the cooperation with PARP was neither good nor bad for 36% of the respondents and only 25% of them evaluated it as positive.

6. Conclusions

Based on the data presented in the article the research hypothesis: 'The wide possibilities of applying for financial support within European Union funds can contribute to the development of e-business sector in Poland, which enables entrepreneurs to reach new customers and increase the sales, turnover and profit, at relatively low cost of investments', which was set for the needs of the work, can be verified positively. The opportunities provided by the EU funds, in the form of a Polish Operational Programme Innovative Economy, undoubtedly facilitate the growth of e-business sector in Poland, which was shown in the work. The analysis of the potential of available financial support related to e-business projects and provided by the EU indicated that the entrepreneurs, particularly those from micro and small enterprises' sector, had wide

opportunities for applying for funds and assistance from the EU. The financial resources gave the profound possibilities for entrepreneurs to invest in new projects, its promotion, IT infrastructure and in human capital. With the support from the EU, the enterprises could improve the cooperation with R&D centers, create favorable conditions for the future development, what in a result increased the competitiveness and innovation potential of the Polish enterprises from the e-business sector. Those, which benefited from EU funds, in majority increased their turnover and attracted new clients. Moreover, they had opportunities to create new sustainable jobs and could contribute to the decrease of unemployment. The EU funds provided Polish entrepreneurs with the opportunity to reduce the development disparities between regions in Poland and to strengthen the economic and social cohesion. However, there are some limitations and difficulties in obtaining the EU funds, which may slow down the development of e-business sector in Poland in the future, which was also shown in the work. The procedures connected with applying for the EU funds are still too complicated. Moreover, there are no specific and detailed information, which very often impeded completion of the required documents. It also may discourage the potential future beneficiaries and result in the resignation from applying for the European support. The procedures are so difficult that the potential beneficiaries of the EU funds usually have to ask for help of some other entities, including professionals, what generates higher costs. In many cases, the cooperation with the Implementing Institution, so the Polish Agency for the Enterprise Development (PARP) in the case of the OP IE, was evaluated negatively by the entrepreneurs, because it additionally impeded obtaining the EU funds.

On the basis of the conducted survey it can be concluded, that to enable fast and efficient growth of the e-business sector in Poland, and also the better utilization of the funds that are granted to our country, there should be introduced some improvements in the procedures of applying for the EU funds. First of all, it should be more entrepreneurs friendly. That is why it should be connected with the reduction of unnecessary bureaucracy, improvement of cooperation with the Implementing Institution and improvement of the flow of information. Moreover, the Polish government should consider the market requirements and ensure possibility of obtaining funds for a bigger group of beneficiaries, as the amount of potential entrepreneurs, who would like to benefit from the EU funds and have very innovative project increases still, however, due to the limited resources their projects were not approved. So finally, in order to facilitate the development of electronic business in Poland in a faster and more efficient way, the amount of funds devoted to this sector should be increased.

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All the results of the survey research concerning the electronic business sector in Poland presented in this article are taken from the master thesis, entitled 'The influence of European Union funds on the development of e-business sector in Poland', written by Katarzyna Kopycka under the

supervision of PhD Tomasz Czajkowski and PhD Aleksandra Januszkiewicz, which was defended in October 2010.

Streszczenie

WPŁYW FUNDUSZY UE NA ROZWÓJ SEKTORA BIZNESU ELEKTRONICZNEGO W POLSCE

W artykule zaprezentowana jest analiza wyników badań, dotyczących wpływu funduszy UE z Programu Operacyjnego Innowacyjna Gospodarka, Działanie 8.2. Wspieranie wdrażania elektronicznego biznesu typu B2B oraz Działanie 8.1. Wspieranie działalności gospodarczej w dziedzinie gospodarki elektronicznej w zakresie eUsług, na rozwój sektora biznesu elektronicznego w Polsce. Zostały poruszone takie ważne aspekty, jak innowacyjność i konkurencyjność ankietowanych przedsiębiorstw oraz ich współpraca z Instytucją Wdrażającą – PARP (Poska Agencja Rozwoju Przedsiębiorczości). W artykule zaprezentowano również wnioski z badań oraz rekomendacje dotyczące poprawy przyszłej pracy Instytucji Wdrażającej i jej współpracy z przedsiębiorstwami.

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