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**SOCIO-ECONOMIC  
GUIDELINES  
OF FISCAL POLICY**

**Monograph**

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The monograph deals with the theoretical bases and practical peculiarities of functioning of financial system under conditions of geopolitical imbalances. The innovative trends in modern fiscal and economic policies are considered. The features of running business activities in the conditions of tax harmonization are ascertained. The ecological and labour prospects of fiscal policy reform are outlined. The ways of improvement of fiscal policy aimed at improvement of social development of society and economic conditions of the state are suggested.

For researchers, lecturers, postgraduates and students, government officials, including employees of fiscal services, economics practitioners, and everyone interested in issues of fiscal policy.

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*All authors are responsible for the content of their articles*

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## **PREFACE**

The modern stage of economic relations development is characterized by dominant influence of globalization processes, which outline new megatrends in development of national economies and their fiscal and socio-economic components, affecting countries around the world. In this context, effective functioning of the State in local and international dimensions is impossible without consideration and analysis of the essence of determinants of development, whose emergence is caused by globalization transformations.

The formation of modern tax systems as the main source of financial support for fulfilment of State functions under conditions of globalization challenges and threats is important prerequisite for the process of civilizational transformations of the economic system of Ukraine and other countries. The search for effective instruments and measures of fiscal policy is a complex task caused by the necessity of consideration of the nature and analysis of course of modern development trends under conditions of geopolitical imbalances.

Determination of the ways of minimization of such imbalances above all requires selecting the adequate theoretical tools of fiscal theory able to identify the determinants of realization of tax processes in the global fiscal space. Above-mentioned issues became the subject of intense debate among scholars and practitioners during the International Scientific and Practical Conference “Modern Determinants of Fiscal Policy: Local and International Dimensions”. The Conference was initiated and organized by Ternopil

National Economic University (Ukraine) and Wrocław University of Economics (Republic of Poland).

The Conference was conducted in the following areas:

1. Financial system in the conditions of geopolitical imbalances.
2. Ecological and labour prospects in fiscal policy reforming.
3. Business activities in the conditions of tax harmonization.
4. Innovative tendencies in modern fiscal and economic policy.

At the time of the Conference important issues of socio-economic aspects of fiscal policy of Ukraine and Poland, the use of tax and debt instruments as well as peculiarities of functioning of economic institutions as prerequisite for formation of competitive environment in the State were discussed.

The reports were represented at a high theoretical level and were the subject of professional discussions among participants of the Conference with prospects of practical implementation in fiscal reforms in Ukraine and Poland.

*Prof A. Krysovaty, Prof A. Gospodarowicz*

## **ANNOTATIONS**

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### ***THE RISK OF EXECUTION OF MUNICIPALITIES BUDGETS***

#### Abstract

The main purpose of the paper is presenting various categories and sources of risk relating to running of local communes. All entities operating in the economy and society life need to manage risks they are facing. This applies to financial institutions, enterprises, public sector entities, households. Therefore, risk is a main driver of decision making. The author intends to indicate possible area of risk's influence on shaping of local communes' incomes and expenses.

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***INVOLVEMENT OF FOREIGN CAPITAL  
IN POLAND AND ITS IMPACT ON THE SIZE  
OF EXTERNAL IMBALANCE***

Abstract

Poland is a structural importer of foreign capital. Every year the value of financial liabilities owed to foreign countries increases, which could raise concerns about the external balance of the country. This article aimed to assess the size, dynamics and generic structure of Poland's foreign liabilities arising from capital inflows in the years 2004-2014 and the impact of these liabilities on the external balance (imbalance). The study revealed that the levels of the analysed indicators have developed in different ways. Although most of them are at a safe level or have shown some improvement, the Polish economy still remains dependent on foreign capital. This means that in the case of the sudden outflow of capital or the reduction of its inflow, the financial stability of the country may be jeopardized. Hence the need for continuous monitoring of indicators that assess external imbalance.

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***DEBT OF LOCAL GOVERNMENT UNITS  
IN POLAND AFTER 2013***

Abstract

This article aims to point out a set of problems associated with the implementation of the individual debt indicator in Poland after 2013. It is the result of the introduction into the Public Finance Act of 2009 fiscal rules



protecting local government units from losing their financial liquidity and preventing them from taking on excessive debt (the balanced budget rule and the individual debt indicator). Regarding the individual debt indicator, it is worth highlighting that the idea of abandoning strict debt limits had been recommended by both the local government and academic circles for a number of years. However, an analysis of these legal solutions shows that they are burdened with many flaws and in practice do not contribute to an improvement in financial stability at the local government level.

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***SOCIAL CONSEQUENCES OF THE FINANCIAL  
AND ECONOMIC CRISIS: IMPLICATIONS  
FOR FISCAL POLICIES***

Abstract

The impact of the crisis on the countries and regions is diverse and it depends to a large extent on the national economic situation and the given sectoral structure. In the short run, the crisis will have more effect on regions of obsolete economic structures, where manufacturing sector dominates. However, the long-term effect of the crisis in different regions can be diversified. The purpose of this article is to broaden the knowledge about the social consequences of the financial and economic crisis as well as to formulate proposals for fiscal policy.

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***THE ROLE OF OWN REVENUES  
IN FINANCING BUDGETS  
OF LOCAL GOVERNMENT UNITS IN POLAN***

Abstract

Efficient functioning of local government units (LGUs) is determined by several factors; the most important factors include the size of funds transferred to them their disposal and the scope of these units' flexibility in shaping their revenues. Own revenues should play a particular role in the local finances system. In the wider sense, as adopted in Article 167 section 2 of the Constitution, own revenues of local government units are revenues other than general subsidies and specific grants from the state budget, namely also shares in central taxes. However, local taxes and fees are the most important part of revenues. The requirement that at least some funds at the disposal of the local government should come from local taxes and fees results both from the European Charter of Local Self-government, ratified by Poland, as well as from Article 168 of the Constitution of the Republic of Poland.

This paper focuses on the issue of local government units' own revenues. Its first part analyses the term "own revenues of local government units" and indicates groups of receipts classified as revenues, and discusses controversies. It indicates discrepancies regarding this term on the ground of theory and binding legal regulations. In the second part of the paper, an attempt was made to determine the role played by own revenues in financing budgets of local government units in Poland, based on the analysis of the structure of revenues of local government units in the years 2006-2014. The paper concludes with a summary that assesses the degree of implementation of the postulate that local government budgets should rely on own revenues. The paper's summary also outlines the proposals of changes made with regard to own revenues of local government units.

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***IMPEDIMENTS OF FUNDING INNOVATIVE SOLUTIONS  
IN THE ECONOMY OF WASTE ELECTRICAL AND  
ELECTRONIC EQUIPMENT***

Abstract

The introduction of innovation to the management of waste electrical and electronic equipment has a particular importance for the development of pro-ecological companies. Elaboration and implementation of appropriate scheme requires not small financial outlay. In the article it was made an attempt to identify the negative impact of the lack of financial expenditure for environmental activities of enterprises and society as a fundamental obstacle to the introduction of innovative solutions. It has been listed the target source of financing the management of waste electrical and electronic equipment, which significantly can improve current state which leaves a lot to be desired.

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***BITCOINAS ALTERNATIVE CURRENCY  
ON THE FINANCIAL MARKET – ITS CURRENT STATUS  
AND FUTURE***

Abstract

The purpose of the study is to analyze and evaluate bitcoin's presence on the financial market, used as alternative money in both virtual and real world, as well as attempt forecasting some possible scenarios of its development, which can be performed following two options:

- development scenarios referring to bitcoin's presence on the financial

market as an alternative currency, where these issues can be observed in the system of the authorities' approach to e-currencies (regulated or unregulated presence on the financial market, usage ban) or taking into account the scale of functioning along with the traditional currencies;

- adopting technologies used for bitcoin's functioning, which can be applied as: decentralized, online register of resources; decentralized network aimed at transferring ownership rights (without intermediaries) or the network to do settlements in a centralized manner (national cryptocurrency – e.g. "fedcoin", adopting bitcoin's technology for interbank settlements).

As of today bitcoin is present on the financial market and plays the role of alternative money, however, it is mainly used for settlements in the virtual world. In the future bitcoin will not be capable of replacing traditional money, however, it will constitute its significant alternative, also in the virtual world. Officially, formal functioning of traditional and virtual currencies does not remain an abstract vision, but just one of the possible and realistic scenarios of development.

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***THE CONCEPT OF TAKING THE COMPANY THROUGH  
A LEVERAGED BUYOUT –  
LEGAL AND ECONOMIC ASPECTS***

Abstract

The last decades show a growing role of financial markets and capital. An important phenomenon is also increasingly common mergers and acquisitions. The article shows the concepts of undertakings entity without own capital that is very popular in the UK. The article shows the economic and legal aspects of these activities on the basis of one of the most important pharmaceutical entity in Poland (JELFA SA).

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### ***CREATING A CAPITAL MARKETS UNION WITHIN THE EUROPEAN UNION***

#### **Abstract**

In the study, the authors try to bring the reader closer to the issues related to the integration of the capital market within the European Union (EU).

The creation of the Capital Markets Union (CMU) is to be the next step towards deeper integration of the financial markets in the EU. Nowadays, the capital markets in the EU are still relatively poorly developed compared with the United States, Japan or Switzerland. As a result of underdevelopment of capital markets, European companies more than, for example, American enterprises, depend on bank financing. The creation of a capital markets union within the EU aims to change the financing structure of enterprises.

The idea of building a capital market union within the EU generally enjoys the support of the governments of the member states and economic circles. When it comes to banks, large commercial banks do not have objections to this project. In contrast, smaller banks, which are savings banks and cooperative banks, look at the planned integration of the financial markets with a certain distance. Undoubtedly, a capital markets union will contribute to a change in the financing of economic activity in continental Europe. The role of the capital market in the process of raising funds by enterprises will increase at the expense of financing by banks.

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***CHANGES IN RATES OF EXCISE DUTY TAX  
FOR HARD ALCOHOLIC BEVERAGES  
IN RELATION TO CONSUMER BEHAVIOUR  
IN POLAND BETWEEN THE YEARS 2008 AND 2012***

Abstract

It is known that increase of rates of excise duty tax on hard liquors raises their prices, which determines consumer behaviour – namely, the demand on this stimulant. Therefore, it is important to choose such rates of excise duty that can satisfy the state budget's and consumers' needs. This is why the study intended to analyse the influence of rates of excise duty on hard liquors on consumer behaviour in relation to changes of excise rate in Poland between 2008 and 2012. To do this, excise duty tax on hard alcoholic beverages was defined and described, its shifts were analysed along with the way the shifts affected consumer demand. Next it was possible to conclude that changes in the rates of excise duty tax on alcohol affect consumers only to a limited extent. The study employed the tools of statistical analysis and deduction.

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***BEHAVIOURAL ECONOMICS AND TAXES –  
SOME INSIGHTS FROM EXPERIMENTS  
WITH POLISH TAXPAYERS***

Abstract

Recent years have seen a rapid expansion of interest in behavioural economics, which draws on ideas from psychology to shape economic

theory. Behavioral economics is changing our understanding of how economic policy operates, including tax policy.

The paper describes two experiments carried out in Poland and involving the taxpayer behaviour analysis. The first experiment was conducted by the World Bank and the Polish tax administration, while the second by the team of researchers from the Faculty of Economics, University of Gdansk.

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***THE ISO 31000 STANDARD AS A MODEL  
OF RISK MANAGEMENT IN ORGANIZATION***

Abstract

Standard described in ISO 31000, issued in 2009 by the ISO (International Organization for Standardization) is one of several risk management models. Due to the universal approach becomes one of the global risk management systems.

The starting point for the construction of the system described in ISO 31000 was the Australian-New Zealand standard AS / NZS 4360: 2004.

The purpose of this article is to present the risk management system based on ISO 31000.

The universality and international nature of the system makes it is possible to use in many organizations, regardless of size and range of activities.

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***GENDER AND THE USE OF FINANCIAL  
DEVELOPMENT INSTRUMENTS IN SMES.  
BEHAVIOURAL STUDY OF ENTREPRENEURSHIP  
SUPPORT***

Abstract

The analysis of a group of businesses from Pomorskie Voivodeship has been used as an example to show with a tool of behavioural economics how the application of a wide range of behavioural stimuli affect financial decisions taken in the SME sector. It has been proven that only in specific situations the gender of decision-makers contributes to differences in the level of accepting or rejecting a development instrument.

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***ENVIRONMENTALLY RELATED TAXES  
IN ACCORDANCE WITH EUROSTAT METHODOLOGY***

Abstract

The presented study discusses taxes which, in accordance with the criteria specified by Eurostat, can be qualified as environmentally related taxes. They constitute one of major modules in the European Environmental Economic Accounts (EEEEA), representing satellite accounts related the European System of Accounts (ESA). EEEA present interactions between economy and environment. They are also used for monitoring the pressure exerted by economy on the environment, as well as environmental inputs in



economy. The monitoring results should be used in assessing the effectiveness of the conducted environmental policy and possibly in the development of directions in taking corrective measures.

The first, substantive part of the article discusses the concept of environmentally related taxes and places them within the framework of national taxation systems in accordance with the provisions of the Regulation by the European Parliament and the Council No 691/2011 and Eurostat methodology. The concept of environmentally related taxes had to be defined precisely in view of the fact that in the recent decades particular EU Member States introduced an extensive spectrum of public levies to their legislation (taxes, charges, customs duties), justifying it by the environmentally related (ecological) considerations. The titles of these levies do not always refer to the current doctrine of public finance.

The second part of the article is devoted to the classification of environmentally related taxes. The criteria of such classification are covered by a specific Eurostat methodology. It has been emphasized that it is merely of directional nature and brings about numerous dilemmas of practical nature.

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### ***FINANCING ENVIROMENTAL PROTECTION IN POLAND***

#### **Abstract**

The financial system is a set of functioning financial institutions, created according to financial law in the country. The financial system in an economy is therefore a mechanism whereby services are provided allowing the circulation of purchasing power in the given economy. In contrast, the financial system with the environmental rules and regulations in focus defines the modalities and procedures for collection and redistribution of funds

allocated for this purpose. Projects related to the financing of environmental protection are therefore an integral part of the financial market economy.

The article presents the financing system for the protection of the environment in Poland in the years 2000-2013. For this purpose, a review of normative material and of the literature in the field of environmental law, economics and finance has been done. For the analysis of the structure and funding for activities in the field of environmental protection, secondary source publications such as the Central Statistical Office (GUS) in Warsaw in the years 2000-2013 have been used.

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### ***THE SOURCES OF FINANCING ENVIRONMENTAL PROTECTION IN POLAND***

#### **Abstract**

The sources of financing environmental protection in Poland

The budgetary funds, private funds and foreign funds are recognized as the main sources of financing for tasks in the field of environmental protection. Budgetary funds are provided by the government and local authorities, while private funds include: investors' own funds and loans. Foreign funds include EU funds and other foreign resources.

EU funds have become the main impulse to take action in the field of environmental protection.

# **I. FINANCIAL SYSTEM IN THE CONDITIONS OF GEOPOLITICAL IMBALANCES**

## **1.1. The risk of execution of municipalities budgets**

### *Introduction*

One of the main purposes of self-government sector's decentralization has been enabling local citizens establishment of development directions of their communes. Self-governments have become perceived as making better decisions than the government. Significant freedom of decisions was granted to self-governments in the Constitution of the Republic of Poland<sup>1</sup> mainly through flexibility in method of own and ordered tasks execution accompanied by shaping own financial policy<sup>2</sup>, including planning of incomes and expenses<sup>3</sup>. To small only extent the flexibility is embedded in shaping of local tax system.

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<sup>1</sup> Konstytucja Rzeczypospolitej Polskiej z dnia 2 kwietnia 1997 roku, Dz. U. z 1997, Nr 78, poz. 483. Art. 165 pkt 2

<sup>2</sup> Misterek W.: *Zewnętrzne źródła finansowania działalności inwestycyjnej jednostek samorządu terytorialnego*. Wyd. Centrum Doradztwa i Inwestycji Difin sp. z o.o. Warszawa 2008. – p. 15

The main purpose of the paper is presenting various categories and sources of risk relating to running of local communes. All entities operating in the economy and society life need to manage risks they are facing. This applies to financial institutions, enterprises, public sector entities, households. Therefore, risk is a main driver of decision making. The author intends to indicate possible area of risk's influence on shaping of local communes' incomes and expenses.

### **1. Budget and factors influencing its planning and execution**

Processes in self-government administration are chains of sequential activities that have measurable goals, are repetitive and may be documented. One shall nevertheless be aware that barriers to decision making exist on informational, resources, skills, organisational and society levels<sup>4</sup>.

The fundamental tool enabling execution of social-economic policy of a given commune is budget being its plan of incomes and expenses<sup>5</sup>. It is the basis for all economic decisions. Moreover, it informs about probable scale of cash flows from all sources and upper limits for public expenses on assigned tasks. It acts as not only financial plan but as general plan of undertaken actions in a given calendar year as well<sup>6</sup>. It supports day-to-day control of relation between incomes and expenses, being therefore a tool enabling assessment of financial stability.

Policy regarding incomes expresses the independence of commune's authority. It enables partly independent shaping of the structure of incomes. Policy regarding incomes includes:

1. taxes and local fees rates;
2. types and scope of tax reliefs, including for use of wealth and services rendered on commune's request;

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<sup>3</sup> Borodo A.: *Samorząd terytorialny. System prawno-finansowy*. Wydanie 5. Wydawnictwo Prawnicze LexisNexis sp. z o.o. Warszawa 2008. – p. 37

<sup>4</sup> Jastrzębska M.: *Zarządzanie – podejście normatywne do zagadnienia pod kątem procesów decyzyjnych i ryzyka*, "Finanse Komunalne 2015, nr 1-2

<sup>5</sup> Ustawa z dnia 27 sierpnia 2009 r. o finansach publicznych (Dz. U. z 2009, Nr 157, poz. 1240). Art. 211

<sup>6</sup> Patrzałek L.: *Finanse samorządu terytorialnego. Wydanie drugie zmienione*. Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu. Wrocław 2010. – p. 83

3. collection of single incomes by communes, including “dedicated funds” (fundusze celowe);

4. assumptions on collectability of incomes what significantly affects assessment of incomes size.

Working out of fundamentals of budget requires not only decision on proposed tax rates and other incomes volume but assessment of their financial implications accompanied by underlying rationale as well.

Subsidies and other one-off incomes are to be considered in budget fundamentals only when they are certain. Otherwise it is necessary to work out the strategy of operation if a given income is not collected.

The purpose of the budget is safeguarding of funds on execution of local communes tasks. Prior to starting assessment of incomes and expenses it is required to consider what shall be their outcome. Planning shall be precise, its outcome shall be specific projects and tasks. It is of utmost importance to state goals to enable precise assessment of their execution level. Assumptions relating to investments include information regarding started projects and expenses required for their completion and proposals of new tasks that are to be undertaken in a year for which a budget is worked out.

Before a planning of budget is launched one is to make decisions on assumptions concerning changes in employment and salaries of self-government’s employees. Increase in employment shall especially be rationalised and described.

Assumptions on salaries of employees working in units remunerated from local budget shall include salary policy rules that include volumes and periods of planned increases accompanied by financial effects on budget and rules concerning bonuses.

Due to significant number and variability of factors influencing projecting and execution of budget it is required to assess at least generally risks that can hamper execution of given budget categories. These risks shall concern both external (i.e. independent from decisions made by local-governments) and internal (i.e. specific for this local-government) factors. These assumptions do not require working out of detailed execution plans if a negative factors take place. It is nevertheless of importance to make these

assumptions since it affects the assessments and provisions policies relevant for planned budget.

Precise description of incomes values is of significant importance for economy of commune. It shall be cautious since if plan is not executed, limiting of expenses has to be introduced. These decisions made under time pressure or necessity, violate to some extent efficiency of communes' operations and lead to inconveniences for local society. They often do also increase final costs of projects execution due to time delays.

On the other hand underassessment of incomes has negative impact on commune's economy as well. Too cautious assessment of incomes results in deferral of projects important for local society. Realisation of unbudgeted financial resources leads usually to modifications of plan to utilise the surplus. Such decisions can violate assumptions of rational public funds expenditure and can be not aligned with important goals for commune

It is also of importance that not all income types are of the same importance. One of the task assigned to planners is focusing on these categories where execution is of highest importance to achieve incomes enabling execution of planned projects.

## ***2. Local taxes and fees***

One of the most important sources of incomes are inflows from taxes and local fees. These are simultaneously these categories of incomes that are collected and kept by communes only and for which rates are set by decision body of a given self-government.

The majority of local taxes are linear. The value of income generated by them may be presented as tax base multiplied by tax rate and assessed rate of tax collection (being relation of tax paid to tax due). From the practical perspective incomes from linear taxes are assessed on the basis of their level in preceding year. The assessment takes also into consideration the rules concerning tax grants.

Other self-generated incomes of communes are inflows from local fees, rents from assets owned by communes and interests from funds on bank deposits. These categories are difficult to assess due to lack of easily calculable factors that affect them. It is therefore recommended to specify them in budget as of zero value or at the level of prior year. Potential increase

in their level is possible only if they are unquestioned. Despite cautiousness their assessment can be erroneous. These errors shall nevertheless not have significant effect on total financial plan execution due to low share in budget's structure.

### **3. Share in Personal Income Tax (PIT) and Corporate Income Tax (CIT)**

Polish law in the Act on local communes incomes (Ustawa o dochodach jednostek samorządu terytorialnego) ensures that every commune has its share in taxes collected from members of this commune<sup>7</sup>. The share accounts for 39,34% but is nevertheless adjusted for the number of citizens being inhabitants of social welfare units. Forecasting of incomes from share in PIT is perceived as one of the most difficult tasks since it bears high risk of incorrect assessment. The forecast depends among others on employment trends, salary levels trends, price indices and GDP development<sup>8</sup>.

Participation in personal income tax accounts for significant part of many communes (it accounts for 20 to 30% in cities acting as counties in Silesian voivodship). It is therefore recommended to be conscious and diligent while forecasting this category<sup>9,10</sup>.

Act on local communes incomes grants to local communes right of share in corporate income tax. Its level was set at 6,71% of total incomes from CIT entities domiciled in a given local commune<sup>11</sup>. Despite lower share

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<sup>7</sup> Ustawa z dnia 13 listopada 2003 r. o dochodach jednostek samorządu terytorialnego (Dz. U. 2003 Nr 203 poz. 1966 z późn. zm.). Art. 4 pkt 2

<sup>8</sup> *Planowanie budżetowe a alokacja zasobów*. Ed. S. Owsiak. Wyd. Polskie Wydawnictwo Ekonomiczne. Warszawa 2008. – p. 171

<sup>9</sup> Czempas J.: *Участие в налогах на прибыль НДС и в налогах на прибыль предприятий – одни из важных факторов развития сообществ*, w: *Природопользование и устойчивое развитие: экономика, экология, управление*, Национальный Университет Государственной Налоговой Службы Украины, Kijów 2014.

<sup>10</sup> Czempas J.: *Udziały jednostek samorządu terytorialnego w PIT i CIT jako efekt lokalnej przedsiębiorczości na przykładzie miast na prawach powiatu województwa śląskiego*, Górnośląskie Studia Przedsiębiorczości, tom XI, Oficyna Wydawnicza Górnośląskiej Wyższej Szkoły Przedsiębiorczości im. Karola Goduli, Chorzów 2014.

<sup>11</sup> Ustawa z dnia 13 listopada 2003 r. o dochodach jednostek samorządu terytorialnego (Dz. U. 2003 Nr 203 poz. 1966 z późn. zm.). Art. 4 pkt 3

in communes' income structure compared to PIT (1 – 10 %) described category of incomes is perceived as a very important constituent of communes' budgets. Forecasting of this category is one of the most difficult tasks especially in communes where CIT is paid by a few or a dozen of large companies. Financial standing of one or a few companies may lead to significant influence on commune's budget execution, especially if changes are decrease in incomes.

Assessments relating to incomes from CIT are mainly based on forecasted profitability of companies that depend on various factors such as: general standing of economy, incomes of citizens and currency fluctuations.

In final stages of budget preparation one can rely on forecasts of the Ministry of Finance both for PIT and CIT assessments. Dilligence needs nevertheless to be applied.

#### **4. Risk**

Risk as a combination of many constantly changing factors is subject of various fields of science. Wide interest in risk is visible in practice as well what causes that the term is defined in various ways. It is mostly treated as synonym to "uncertainty" what is nevertheless wrong and both shall not be exchanged. These categories relate to the same decision process but at different stages. Risk changes correspond to changes in uncertainty: the more uncertainty, the more risk and vice versa. Decrease in uncertainty leads to decrease in risk. It is to be emphasised that risk increases correspondingly to increase in capital placed in undertaken activity; it is expressed through decrease or loss of commune's incomes as an investor in case of unsuccessful end of investment process<sup>12</sup>. Risk is a term from the area of decision making theory and means situation when selecting a given variant of problem solving (technical, organisational, economic etc.) leads to possibilities of various effects with known probability<sup>13</sup>.

Risk is a deviation from expected outcome. According to the so called negative concept of risk perception it is the effect of negative outcome; it is

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<sup>12</sup> Zachorowska A.: *Ryzyko działalności inwestycyjnej przedsiębiorstw*, PWE, Warszawa 2006. – p. 55.

<sup>13</sup> Jedynak P, Teczke J., Wyciślik S., *Zarządzanie ryzykiem w przedsiębiorstwach zorientowanych międzynarodowo*, Księgarnia Akademicka, Kraków 2001. – p. 21.



probability of loss (negative side is emphasised) – one should treat it as threat then. The neutral theory of risk assumes that risk results from possibility of achievement e.g. income different from expected one. It is potentially negative occurrence that may cause that project goals will not be achieved<sup>14,15,16,17,18</sup>.

### **5. Risk types and classifications**

Numerous discussions on risk definitions lead to four main conclusions regarding its nature:

1. Risk is not homogenous and it is not possible to give one universal and unequivocal definition of this term.
2. Risk exists in at least two aspects:
  - impartial,
  - subjective.
3. Risk may be assessed in various contexts, e.g. as: danger, hazard, uncertainty, probability.
4. Risk changes and has phases. It is a process rather than state<sup>19</sup>.

The literature (not only economic one) one can find various classifications of risk. The most general classifications are::

- **Actual risk** – resulting from law of grand numbers and relating to catastrophes such as fires, floods etc.
- **Subjective risk** – relating to imperfect behaviours of a man that subjectively assesses the probability that some events will take place in the future.

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<sup>14</sup> Jajuga K., Jajuga T.: *Inwestycje*, PWN, Warszawa 1996. – p. 99.

<sup>15</sup> Kucharska-Stasiak E.: *Nieruchomość w gospodarce rynkowej*, PWN Warszawa 2006. – p. 203.

<sup>16</sup> Kendall R.: *Zarządzanie ryzykiem dla menedżerów*, Liber, Warszawa 2000.

<sup>17</sup> Marcinek K.: *Ryzyko projektów inwestycyjnych*, Wydawnictwo Akademii Ekonomicznej w Katowicach, Katowice 2000. – p. 90.

<sup>18</sup> Tworek P.: *Ryzyko wykonawców przedsięwzięć inwestycyjnych*, Wydawnictwo Akademii Ekonomicznej w Katowicach, Katowice 2010. – p. 11.

<sup>19</sup> Monkiewicz J.: *Podstawy ubezpieczeń*, Poltext, Warszawa 2000. – p. 27.

- **Objective risk** – absolute form of uncertainty that relates to impossibility of some events forecasting<sup>20</sup>.

Another classification enables identification of two types relating to functions of communes or corporates:

- **Stable risk** – relates to the whole economic system (inflation level, unemployment level etc.).

- **Variable risk** – relates to one organisational unit: corporation, commune, bank, household (strikes, bankruptcy, wrong employees, dismissal of communes heads etc.)<sup>21</sup>

Next classification is connected directly with investment decisions of company or public institution. The probability is very varied:

- **Project risk** – related to technical conditions of project execution (e.g. solution working at one economic entity or commune does not work at another due to e.g. higher level of production, more tasks, wider area of supervision or number of citizens).

- **Investor's risk** – relating to wrong assessment by commune acting as investor e.g. future market conditions (e.g. prices of water or electricity) or tax system (assuming unreal level of tax incomes due to wrong calculations etc.).

- **Decision-makers risk** – resulting from lack of interest of decision-makers in diversification of development fields of commune what leads to minimal level of investment activities<sup>22</sup>.

The whole risk may be divided into systemic and specific risks. The main criterion of this division are factors shaping risk:<sup>23,24,25,26,27,28</sup>

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<sup>20</sup> Tarczyński W., Mojsiewicz M.: *Zarządzanie ryzykiem*, PWE, Warszawa 2001. – p. 15-16.

<sup>21</sup> Skov N.: *Finanse i zarządzanie. Amerykańskie propozycje dla polskich firm prywatnych*, Placet, Warszawa 1991. – p. 115.

<sup>22</sup> Tarczyński W., Mojsiewicz M.: *Zarządzanie ryzykiem*, PWE, Warszawa 2001. – p. 15.

<sup>23</sup> [Capiga M, Ogrodnik H.: *Ryzyko w działalności przedsiębiorstwa, banku i zakładu ubezpieczeń*, Wydawnictwo Akademii Ekonomicznej w Katowicach, Katowice 2007. – p. 26-27.

<sup>24</sup> Jedynak P, Teczke J., Wyciślik S., *Zarządzanie ryzykiem w przedsiębiorstwach zorientowanych międzynarodowo*, Księgarnia Akademicka, Kraków 2001. – p. 43-44.

- **Systemic (external) risk** – determined by external forces, out of entities' control and economic conditions of a given market and global market (e.g. climate changes, inflation, unemployment); this type of risk shall not be eliminated by investor and its fundamental sources are changes in interest rates, inflation, tax rules, political-economic situation.

- **Specific (non-systemic, internal) risk** – encompasses the area of entities' activities and may be under its control (future events that may at least to some extent be controlled); the most important origins of this risk are: management of a company or commune, competition, availability of suppliers, liquidity, bankruptcy<sup>29</sup>.

Considering factors that lead to disruptions and threats to working of commune one may identify many detailed risks. Therefore systemic risk comprises<sup>30</sup>:

- **Interest rate risk** – due to changes in interest rates on markets; these changes affect deviations in level of income in investment decisions and instability of financial instruments based on interest rate.

- **Currency risk** – relating to changes in currency rates and occurring when money held by one entity is denominated in currency differing from its' country; changes in rates result in different levels of rate of return depending on currency they are expressed in.

- **Purchasing power risk** – relating to inflation and occurring when at a certain moment purchasing power of money changes due to inflation.

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<sup>25</sup> Kaczmarek T.T.: *Ryzyko i zarządzanie ryzykiem. Ujęcie interdyscyplinarne*, Difin, Warszawa 2006. – p. 176.

<sup>26</sup> Jastrzębska M.: *Polityka inwestycyjna jednostek samorządu terytorialnego*, w: Samorząd Terytorialny 2005, nr 9.

<sup>27</sup> *Zarządzanie ryzykiem* (Ed. K. Jajuga), Wydawnictwo Naukowe PWN, Warszawa 2007.

<sup>28</sup> Grzesiak K.: *Kilka uwag o ryzyku w sektorze ochrony zdrowia*, w: Modelowanie preferencji a ryzyko '09 (Ed. T. Trzaskalik), Wydawnictwo Akademii Ekonomicznej w Katowicach, Katowice 2010.

<sup>29</sup> Tarczyński W., Mojsiewicz M.: *Zarządzanie ryzykiem*, PWE, Warszawa 2001. – p. 12.

<sup>30</sup> Jajuga K., Jajuga T., *Inwestycje, instrumenty finansowe, ryzyko finansowe, inżynieria finansowa*, Wydawnictwo Naukowe PWN, Warszawa 1996. – p. 99.

- **Political risk** – occurring as a result of decisions made by government, parliament, central administration that have significant influence on economy, corporations and self-government units.

- **Events risk** – relating to possibility that unexpected events occur that affect standing of investor or suppliers but do not affect general market situation.

Considering non-systemic risk, the types relating to investment process dominate. One can identify:

- **Risk that the contract will not be executed** – cancellation of contract, suing by suppliers.

- **Management risk** – occurs due to incorrect management of commune as e.g. investor; missing information may be the basis for wrong decisions.

- **Tax risk** – relating to changes in incomes generated by taxpayers.

- **Financial risk** – is the state of uncertainty that relates to financing method (own or external capital). Use of loans leads to additional charges on communes due to loan servicing. This type of risk is highly influenced by changes in interest rates that are difficult to forecast<sup>31,32</sup>, wrong assessment of costs, conditions and payment terms; characteristic trait for this risk is relatively high level of measurability and possibility of its identification and impact on project.

- **Suppliers bankruptcy risk** – results from the risk that financial terms will not be met and financial risk occurs what can lead to bankruptcy of company.

- **Price changes risk** – special type of interest rate risk that relates to bonds; it occurs when company as holder of external debt wishes to sell it before maturity and exposes itself on interest rate risk relating to changes in bond prices as a result of interest rates.

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<sup>31</sup> Tarczyński W.: *Rynki kapitałowe – metody ilościowe*, Placet, Warszawa 1997, Vol. II. – p. 38.

<sup>32</sup> Grzesiak K.: *Kilka uwag o ryzyku w sektorze ochrony zdrowia*, w: *Modelowanie preferencji a ryzyko '09* (Ed. T. Trzaskalik), Wydawnictwo Akademii Ekonomicznej w Katowicach, Katowice 2010.

- **Reinvestment risk** – occurs when funds collected from holding financial instrument are reinvested by other interest rate than rate of return from instrument.
- **On-demand redeeming risk** – related to financial instrument that may be redeemed on demand; unfavourable interest rates may cause that one side of contract may find itself in unfavourable situation.
- **Volatility risk** – relates to instrument that may be converted into another instrument (e.g. convertible bonds) what takes place under unfavourable conditions for its holder.
- **Operational risk** – one of the broadest categories of risk; literature defines it as a risk that losses will be incurred due to wrong systems, insufficient control, man's error or incorrect management.
- **Legal risk** – relating to possibility of loss due to commune acting in environment not compliant with laws and regulations what can hinder correct execution of contract<sup>33,34,35</sup>; receivables may be questioned, documents may be faulty.
- **Technical risk** – relating to the scope of project, interdependency of tasks, Assessment of expenses, efficiency of labour, resources management, contract terms, communication in project, procedures, technologies, norms, standards, quality of machines, availability of resources, experience of contract executors, suppliers reliability; due to the fact that investment project may not be such errors made at development and execution stage have large impact on investment risk level.
- **Risk from difference between goals of executing and establishing powers** – lack of support for activities, incorrect selection of labour and personal conflicts, labour-dependence.
- **Risk of incorrect interpretation** of results from prior execution of similar investments in other communes.

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<sup>33</sup> Socik K.: *Przedsiębiorstwo a ryzyko – podejście praktyczne*, "Rynek Terminowy", 2000, nr 4. – p. 49.

<sup>34</sup> Korombel A.: *Ryzyko w finansowaniu działalności inwestycyjnej metodą project finance*, Difin, Warszawa 2007.

<sup>35</sup> Marcinek K.: *Finansowanie projektów inwestycyjnych na zasadach project finance*, Wydawnictwo Akademii Ekonomicznej w Katowicach, Katowice 2006. – p. 16.

- **Risk of overdue start** of project and time of its completion due to unfavourable atmospheric conditions.
- **Insufficient provisions risk**
- **Reputational risk** if investment is wrong.
- **Risk of incorrect assesment of investment costs** – increases when costs significantly exceed budgeted amounts.
- **Risk of insufficient funds for own contribution** in investment co-financed by central budget or EU funds.
- **Risk of not received vow for EU funds.**
- **Risk of unfulfilled effects in a given time** – all delays cause negative effects for all investment participants. This causes additional costs for commune-investor e.g. from freezing of funds or contractual fines.
- **Insolvency of commune-investor risk** accompanied by risk of investment break.
- **Risk relating to agreement procedures or dismissal procedures** (e.g. extension of agreement periods) and opinion collections for investment proposals.
- **Environmental risks** – protests of neighbours or environmental organisations.
- **Risk of unfavourable geo-technical conditions**
- **Investment sector risk** – relating mainly to investors, financial institutions or local communes perception that in a given area of activity one may have lower efficiency than in other sectors.
- **Exploitation risk** – is a risk of technical nature that exists in operational phase only and is described as threat that incomes will fall due to slowdown or break in activity from technical reasons (e.g. transmission networks, sewage treatment plants, hydro technical units). Activities can be disrupted both due to technical problems as well as due to economical, organisational and other. The most important origins of exploitation risk are:
  - application of new, untested technologies
  - errors made at design and construction of devices stage,
  - wrong production and low-quality materials,
  - higher than planned level of machiens and devices wear,

- lower than planned efficiency of technical infrastructure,
- incorrect exploitation and servicing of objects and devices<sup>36</sup>.

• **Incorrect management risk** – its result may be among others uncollected incomes of communes as investors. The quality of management depends not only on employees but on skills and competences of persons chosen for decision-making positions. Persons with long-term experience in self-government area ensure that decision made are better. The author is of the opinion that significant risk affecting correct execution of budget results from the overrepresentation in decision-making bodies from public selection of persons without even basic understanding of finance, law, engineering, management. Mandate granted by society and popularity does not ensure the competency and knowledge of commune's problems. This bitter truth relates mainly to educational, medical etc. background. Such state affects also the external image of a given commune what hinders its competitiveness towards other communes, counties, voivodships especially when applying for donations from central budget or foreign funds.

• **Information risk** – relates mainly to availability of information and asymmetry of information possessed by investor and project executors.

• **Fraud risk** – relates to forging of data on financial standing of investment project executor.

• **Social risk** – notwithstanding the efforts undertaken by local representatives and management of communes the results of these may be perceived as weak by local societies. It will depend on the social standing in self-government. The more discrepancy of goals, criteria and motivation for acting of local governments and goals, expectations and interests of citizens, the higher social risk that budget will not be executed what can lead to imposed adjustments to budget from society. This type of risk is imminent trait of decision making in communes. Similarly to legal risk, investor does not have an opportunity to directly protect from this type of risk.

• **Data certainty risk** – important for potential investors and entities cooperating with commune.

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<sup>36</sup> [http://akson.sgh.waw.pl/~akazuk/zajecia/stare\\_zarzadzanie\\_ryzykiemi/zarzadzanie%20rzykiem%20ident\\_cz\\_%20II.pdf](http://akson.sgh.waw.pl/~akazuk/zajecia/stare_zarzadzanie_ryzykiemi/zarzadzanie%20rzykiem%20ident_cz_%20II.pdf)

The above classifications of risk does not exclude themselves and only help in deep understanding of this phenomenon. Some of them do not constitute dual divisions what results from significantly imprecise borders between them and eventually causes that they may be classified to a few categories at the same time. One shall also note that increase in risk can result from various factors. It can be result of both economic growth, technological development and from social and sociological changes in commune's structure<sup>37,38,39</sup>.

Variability of economic and legal conditions accompanied by complexity of relations between decisions requires communes to use clearly specified decision system. The decision process relating to generation of incomes is a constant process – many decisions are part of whole decision chain and analysis of results enables analysis of errors' origins and their mitigation. Development of knowledge and skills of decision-makers increases the rationality of decisions as well as relying on scientific methods, societal process of decision-making and simplification of organisational structures.

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<sup>37</sup> Zachorowska A.: *Ryzyko działalności inwestycyjnej przedsiębiorstw*, PWE, Warszawa 2006. – p. 61.

<sup>38</sup> Kendall R.: *Zarządzanie ryzykiem dla menedżerów*, Liber, Warszawa 2000.

<sup>39</sup> Socik K.: *Przedsiębiorstwo a ryzyko – podejście praktyczne*, "Rynek Terminowy", 2000, nr 4. – p. 50.



## **1.2. Involvement of foreign capital in Poland and its impact on the size of external imbalance**

### ***Introduction***

Countries with insufficient internal savings (with an accumulation limit) and undergoing a stage of rapid economic growth are forced to rely on foreign savings to finance their investments (or the share of their consumption). The benefits brought by the inflow of foreign capital, foreign direct investment, foreign portfolio investment, other forms of foreign investment and derivative financial instruments have a lasting character, provided that the current account deficit in the balance of payments is kept at a safe level in order to avoid the rapid growth of foreign liabilities and their servicing costs, destabilizing the internal and external balance of a country.

Poland is a structural importer of foreign capital. Its inflow rate was particularly high in the 1970s. As a result, Poland was caught in the debt trap, which in the early 1980s led creditors to declare the country's insolvency. In the early 1990s, after signing an agreement with creditors on reducing and restructuring the foreign debt, Poland managed to resolve issues related to the so-called "old debt".<sup>40</sup> As a result of the agreement, Poland regained access to foreign capital. Its increasing inflow was further facilitated by the political and economic transformation. These factors allowed the acceleration of the economic development in Poland despite insufficient domestic savings. After joining the European Union in 2005, Poland gained even wider access to foreign capital due to the improved credibility of the country and far-reaching liberalization of capital flows. The increasing involvement of foreign capital in

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<sup>40</sup> For more on this topic see, i.a.: H. Nakonieczna-Kisiel, *Zadłużenie zagraniczne Polski w okresie transformacji*, w: *Determinanty i wyzwania gospodarki światowej*, red. E. Najlepszy, M. Bartosik-Purgot, ZN 126, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań 2009.

the Polish economy may, however, raise concerns about the growing external imbalance which threatens the financial stability of the country. These risks became more apparent after the recent international financial crisis, which prompted the European Commission to introduce the Macroeconomic Imbalance Procedure.<sup>41</sup>

The purpose of this paper was to assess the size, dynamics and generic structure of Poland's foreign liabilities arising from non-resident investment in the years 2004-2014 and the impact of external financing on the internal balance (imbalance). Our research method was based on the comparative analysis of statistical data which – to a necessary extent – was supplemented by analysis of the literature on the most fundamental indicators of the external balance of a country. The study covers the period from 2004 to 2014, i.e. from the accession of Poland to the European Union until now. The EU membership brought many changes in the Polish economy, such as the impact on the financial relations with foreign countries, reflected in the balance of payments and international investment position.

### ***1. Polish financial liabilities arising from foreign capital inflows***

At the end of 2014, the cumulative value of the liabilities arising from foreign capital imported by the Polish economy amounted to more than EUR 461.6 billion, which was 12% higher than the GDP and nearly 3 times higher than in 2004 (see Table 1).

Nevertheless, the growth in the liabilities arising from foreign investment has varied over the last ten years. The highest dynamics was recorded in the years 2005-2007 as a result of the improvement of Poland's credibility after joining the European Union, full liberalization of capital flows between Poland and the EU, OECD and EEA countries, acceleration of economic development, increasing budget deficit, appreciation of the zloty, and relatively higher interest rates than in the world market.<sup>42</sup>

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<sup>41</sup> *European Economy*, "Occasional Papers", February, Brussels, Paper and Internet, 2012, no 92, [http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2012/pdf/ocp92\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp92_en.pdf) (accessed July 5, 2015).

<sup>42</sup> See E. Bilewicz, H. Nakonieczna-Kisiel, *Wpływ sektora bankowego na wzrost zadłużenia zagranicznego przedsiębiorstw w Polsce, w: Problemy wymiany handlowej w integrującej się Europie*, red. K. Budzowski, K. Kaszuba, S. Wydymus, Kraków-Rzeszów 2007.

Table 1

**Polish foreign liabilities arising from non-resident investment in the years 2004-2014**

Item	Unit of measure	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total foreign liabilities	EUR million	<b>156.6</b>	<b>190.5</b>	<b>221.8</b>	<b>277.8</b>	<b>276.2</b>	<b>308.8</b>	<b>391.2</b>	<b>385.2</b>	<b>438.3</b>	<b>444.9</b>	<b>461.6</b>
	Previous year = 100	-	121.7	116.4	125.2	99.5	111.8	126.7	98.5	113.8	101.5	103.8
including those arising from:												
direct investment	EUR million	66.9	80.9	100.8	127.4	122.3	134.9	176.8	167.5	190.1	197.3	201.7
	Previous year = 100	-	<b>120.8</b>	<b>124.7</b>	<b>126.4</b>	<b>96.0</b>	<b>110.4</b>	<b>131.0</b>	<b>94.7</b>	<b>113.5</b>	<b>103.8</b>	<b>102.2</b>
	Direct investment / total investment (%)	43	42	45	46	44	44	45	43	43	44	44
portfolio investment	EUR million	41.5	60.3	64.4	71.3	55.3	70.8	98.0	97.3	128.2	126.8	134.6
	Previous year = 100	-	<b>145.3</b>	<b>106.8</b>	<b>110.7</b>	<b>77.5</b>	<b>128.2</b>	<b>138.3</b>	<b>99.3</b>	<b>131.8</b>	<b>98.9</b>	<b>106.2</b>
	Portfolio investment / total investment (%)	27	32	29	26	20	23	25	25	29	28	29
other forms of investment	EUR million	47.8	48.9	56.1	78.0	95.5	102.1	111.9	114.9	114.6	116.4	118.3
	Previous year = 100	-	<b>102.2</b>	<b>114.7</b>	<b>139.0</b>	<b>122.5</b>	<b>106.9</b>	<b>109.6</b>	<b>102.7</b>	<b>99.7</b>	<b>101.5</b>	<b>101.6</b>
	Other forms of investment / total investment (%)	31	26	25	28	35	33	29	30	26	26	26
derivative financial instruments	EUR million	0.3	0.4	0.5	1.1	3.2	1.0	4.6	5.6	5.4	4.4	7.0
	Previous year = 100	-	145.2	105.9	230.5	294.3	30.2	474.5	121.9	96.7	82.2	158.5
	Derivative financial instruments / total investment (%)	0.2	0.2	0.2	0.4	1.2	0.3	1.2	1.4	1.2	1.0	1.5

Source: own calculations based on *Międzynarodowa pozycja inwestycyjna Polski w 2013 r.*, <http://www.nbp.pl> (accessed August 2, 2015)

The outbreak of the financial crisis caused the reduction in the growth rate of Poland's foreign liabilities by 0.5% in 2008. In the following years, its liabilities were still on the rise, but at a significantly lower rate than before the crisis. It was associated with the structural changes in global capital markets after the crisis. Furthermore, the indicators of Poland's investment attractiveness in the rankings by international institutions worsened due to a lack of structural reforms, especially no reform of budget expenditures. The lower rate of economic growth was also recorded.<sup>43</sup>

Poland's foreign capital inflow has been dominated by foreign direct investment. At the end of 2014, the cumulative value of these liabilities reached EUR 201.7 billion, which represented 49% of GDP and 3 times more than in 2004. The inflow of foreign portfolio investment was slightly smaller; at the end of 2014, those liabilities amounted to EUR 134.6 billion (32.7% of GDP), 3.2 times more than in 2004. The capital inflow in other forms of foreign investment (mainly financial credits) was lower; at the end of 2014 it amounted to approximately EUR 118.3 billion (28.7% of GDP), which was still around 2.5 times higher than in 2004. Foreign investment in the form of derivative financial instruments was the least attractive for non-residents. Its inflow to Poland was estimated at EUR 7 billion. This confirms the popular opinion that the low use of those financial instruments in the Polish banking sector helped avoid the more dramatic effects of the financial crisis.<sup>44</sup>

The role of different kinds of foreign capital inflows in the study period is reflected in their structure. Foreign direct investment, considered to be the most stable form of foreign capital, was prevalent during the entire period. Until the economic crisis, its share in the total liabilities owed to non-residents generally showed a rising trend and stood at 43% to 46%, while in the subsequent period it decreased to 44%. The second came other forms of foreign investment, although subject to large fluctuations and with a general tendency to decrease. In 2008, its share was at its highest (amounting to 35% of total liabilities owed to foreign countries), while at the end of the study

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<sup>43</sup> *Agencja Fitch: brak reform to presjana rating Polski*, "Gazeta Wyborcza" 23.06.2010, [http://wyborcza.biz/biznes/1,100896,8051425,Agencja\\_Fitch\\_\\_brak\\_reform\\_to\\_presja\\_na\\_rating\\_Polski.html](http://wyborcza.biz/biznes/1,100896,8051425,Agencja_Fitch__brak_reform_to_presja_na_rating_Polski.html) (accessed July 15, 2015).

<sup>44</sup> See *Rozwój systemu finansowego w Polsce w 2008 roku*, NBP, Warszawa 2009, <http://www.nbp.pl> (accessed June 10, 2015).

period it stood at about 26%. The share of foreign portfolio investment – taking the third place –also underwent major variations, but with a general tendency to increase (around 27% in 2004 and 28-29% in 2013-2014). Derivative financial instruments have played a small, almost non-existent role in the foreign capital inflow in Poland. In spite of the highest growth, their percentage ranged from 0.2% to 0.4% before the financial crisis, while in the following years it increased to 1.2%-1.5%.

These analyses indicate that the development of the Polish economy during the study period was financed mainly by foreign investors. A question arises whether the increasing involvement of foreign investors in the economy puts in danger the external balance of the country.

To evaluate it, various indicators based on the balance of payments statistics were used. Their analysis is presented below.

## **2. Foreign capital inflow to the Polish economy**

The primary indicator for assessing an external balance is the ratio of a current account balance to GDP.<sup>45</sup> A long-lasting current account deficit, regardless of the form of investment that finances it, results in the accumulation of foreign debt and/or sale of domestic assets.<sup>46</sup> Debt service (the repayment of interest and instalments and the payment of dividends from foreign assets) impedes economic growth, because it reduces a pool of foreign exchange assets assigned to finance current import. On the other hand, a large current account surplus indicates insufficient domestic demand, which also has a negative effect on the economy. In the aforementioned Macroeconomic Imbalance Procedure, The European Commission established the threshold value of the analysed indicator for the member states between -4% and 6% of GDP.<sup>47</sup>

The data in Table 2 shows that in 2014 the level of the current account deficit in relation to GDP in Poland stood at 1.4%, 2.6 percentage points below

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<sup>45</sup> Regulation (EU) No 1176/2011 of the European Parliament and of the Council of 16 November 2011 on the prevention and correction of macroeconomic imbalances; 23.11.2011, Official Journal of the European Union L 306/25.

<sup>46</sup> See J. Sawicki, *Rola BIZ w stabilizacji finansów zagranicznych w Polsce w latach 2012-2014* in: *Inwestycje zagraniczne w Polsce 2012-2014*, IBR, KiK, Warszawa 2015, p.72.

<sup>47</sup> *European Economy...*, op.cit.

the limit. Since 2008 this index has been declining. In 2008, it amounted to 6.5%, which was 2.5% over the safety threshold. This indicates the decreasing demand of the economy for the external sources of finance that is needed for development.

Table 2

**Selected indicators of the Polish external balance  
in the years 2004-2014 (%)**

Item	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Current account balance/GDP	-5.4	-2.6	-4.0	-6.2	-6.5	-3.9	-5.6	-5.2	-3.6	-1.3	-1.4
Current and capital account balance/GDP	-4.9	-2.2	-3.4	-5.2	-5.4	-2.3	-3.8	-3.3	-1.3	1.0	1.0
FDI inflow/current account balance	102	143	157	93	41	83	68	71	43	47	208
Net international investment position/GDP	-45.4	-43.9	-46.0	-52.1	-47.3	-60.9	-65.8	-59.5	-67.7	-70.1	-66.7
Net external debt/ GDP	13.4	13.8	16.8	21.6	24.7	33.6	33.3	33.2	33.4	36.7	37.8
Gross external debt/ GDP	46.4	45.9	47.2	50.5	47.9	61.7	66.2	67.5	72.8	71.3	70.8
Short-term external debt/ total external debt	19.1	20.4	20.4	26.1	26.9	25.0	24.4	22.4	19.3	19.9	17.4
Short-term external debt / official reserve assets	67.5	63.6	71.3	92.6	106.0	88.0	82.6	73.4	64.1	71.4	61.1
Official reserve assets –expressed in the number of months of import of goods and services	4.3	4.9	4.0	4.1	3.4	5.5	5.5	5.4	5.7	5.3	5.3

Source: *Sprawozdanie z wykonania założeń polityki pieniężnej na rok 2014*, Warszawa, NBP, 2015, p.31, <http://www.nbp.pl> (accessed August 3, 2015), *Międzynarodowa pozycja inwestycyjna Polski w 2013 r.*, Warszawa, NBP, 2014, p. 54, <http://www.nbp.pl> (accessed August 3, 2015), *Bilans Piątniczy Polskiza IV kwartał 2014 roku*, Warszawa, NBP, 2015, p. 73, <http://www.nbp.pl> (accessed August 3, 2015), *International Investment Position*, Eurostat, <http://epp.eurostat.ec.europa.eu>, (accessed August 7, 2015).

Capital flows may take a form of either investment or transfers. The latter do not create foreign liabilities. In the case of Poland, they have been essential for the financing of infrastructure investments since its accession to

the EU.<sup>48</sup> The transfers of the EU funds have a decisive impact on the value of the capital account in the Polish balance of payments which in 2014 showed a positive balance amounting to more than EUR 10 billion.<sup>49</sup> The sum of this value and the negative current account balance equal to EUR 5.2 billion yielded a surplus of about EUR 4.8 billion, representing 1% of GDP. These estimates strongly indicate a lack of the borrowing needs of the Polish economy in 2014. However, this situation is of temporary character and cannot provide a reliable basis for assessing external imbalances. Due to the ongoing discussion in the EU on the necessity of the cohesion policy reform, it should be expected that in the future these capital inflows will be reduced. As a result, the capital account will not balance the current account deficit to the same extent as in recent years, which will lead to the growth of external imbalance. The same effect can be observed after including the balance of net errors and omissions whose value has fluctuated between EUR 7 and 11 billion since 2008. If the current account deficit and the negative balance of errors and omissions were summed up and used for assessment, the external imbalance would turn out to be even greater.

In terms of the methods of financing the current account deficit, the ratio of foreign direct investment (FDI) inflow to current account balance is also significant. In the years 2004-2006, this indicator was positive (stayed above 100%), but in the following period it fluctuated at a relatively low level, ranging between 41% and 93%, which was caused by the collapse of economic growth in developed countries. It was not until the end of the study period when the value of FDI inflow to Poland was two times greater than the current account deficit.

External balance may also be evaluated by means of indicators created from a country's international investment position (IIP). It represents the foreign assets and liabilities of a given country. Such indicators include the ratio of net IIP to GDP, for which the European Commission set the safety threshold at a level of minus 35%<sup>50</sup>.

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<sup>48</sup> *Bilans płatniczy Polska IV kwartał 2013 roku*, NBP, Warszawa, p. 11, <http://www.nbp.pl> (accessed August 3, 2015).

<sup>49</sup> Balance of Payments Statistics, National Bank of Poland, [http://www.nbp.pl/home.aspx?f=/statystyka/bilans\\_platniczy.html](http://www.nbp.pl/home.aspx?f=/statystyka/bilans_platniczy.html) (accessed August 5, 2015).

<sup>50</sup> *European Economy...* op. cit.

Data from Table 2 proves this indicator deteriorated in Poland in the study period. In 2004 it stood at minus 45% in relation to GDP, which is almost 1/3 higher than the safety threshold, while at the end of 2014 it rose to nearly minus 67% of GDP, exceeding the limit almost two times. The high negative value of net IIP reflects the cumulative current account deficits from previous years. The high level of liabilities arising from capital contributed by foreign investors results in large expenditures due to income from foreign investment, which leads to a further increase in the current account deficit and foreign debt.

However, not all foreign IIP liabilities need capital servicing, i.e. the repayment of capital from/or interest. Such repayment is not required in the case of foreign direct investment (purchases of shares and reinvested earnings). As shown above, the share of Polish FDI in the foreign liabilities has been relatively large during the last decade. This is why, in spite of the high value of the NIIP in relation to GDP, foreign liabilities requiring service are at a much lower level. It is verified by yet another indicator, the ratio of net external debt to GDP, which takes only debt instruments into account, while excluding non-debt instruments (equity capital, reinvested earnings, equity securities, other equities and financial derivatives). In 2014 this ratio was approximately 38%, about 29% lower than the NIIP to GDP ratio. Nevertheless, in the years 2004-2014 the value of this indicator decreased almost three times due to a faster increase in liabilities than in foreign receivables related to debt. On the other hand, the ratio of gross external debt to GDP was considerably higher in the study period, and since 2009 it has been regularly exceeding the threshold limit.<sup>51</sup> Its highest level was recorded in the years 2012-2014, when it reached more than 70% of GDP. High foreign debt is a risk factor, as it requires the constant inflow of foreign capital to service liabilities. In 2014, the value of the latter accounted for almost 25% of GDP, exceeding the value of the official reserve assets by 19%.<sup>52</sup>

Assessment of a country's external imbalance may involve using other indicators associated with foreign debt, such as the ratio of short-term external debt to total external debt or to official reserve assets and the relationship of official reserve assets to the value of monthly import of goods and services.

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<sup>51</sup> W. Czepiel, *Obsługa zadłużenia zagranicznego, a deficyt płatności bieżących*, "Bank i Kredyt", 2000, no 5.

<sup>52</sup> *Bilans płatniczy RP za IV kwartał 2014 r.*, NBP, Warszawa, s. 73, <http://www.nbp.pl> (accessed August 3, 2015).



The share of short-term debt in total foreign debt increased from 19.1% to 26.9% in 2004-2008. However, in the following years it indicated a downward trend, standing at only 17.4% in 2014. This process should be considered as beneficial, because it proves, on the one hand, the reduction of tensions in the currency market, as evidenced by the relative stability of the zloty exchange rate and the reduction of the borrowing needs of the economy, as mentioned above.

The external balance has also improved in terms of the relationship of short-term debt to official reserve assets, which shows whether liabilities with a maturity of up to one year may be fully financed by the central bank's foreign receivables without the need for refinancing. The data included in Table 2 shows that in 2008 the debt with maturity of up to one year was 6% higher than the accumulated reserve assets of the Polish National Bank. In this period the risk of refinancing and losing credibility by Poland increased. However, after the crisis the situation improved and at the end of 2014 the level of short-term liabilities was nearly 40% lower than reserve assets.

The financial security of the country may also be assessed by means of another indicator: the ratio of official reserve assets to the monthly value of imported goods and services. It is generally accepted that reserves should be equal to at least 3 months of import to ensure the safe purchase of necessary goods and services. Currently in Poland this ratio exceeds 5 months, which should be considered a safe level.

### ***Conclusion***

The research shows that in the last decade the involvement of foreign investors in the financing of the Polish economy was relatively large, but the dynamics of the growth of liabilities has decreased. Foreign direct investment and portfolio investment had the most significant share in the capital inflow, while the importance of other forms of investment, despite a relatively large share, decreased. The role of derivatives was almost symbolic.

The analysis conducted in this study indicates an improvement in the Polish external balance in terms of the size of the current account deficit in relation to GDP. From 2009 it started to decrease, while since 2012 it has stayed within the safety threshold. Its stabilization was also facilitated by the inflow of EU funds which is recorded mainly in the capital account. In

contrast, the large value of the net errors and omissions account meant that the official data on the size of deficit showed lower values than it would have, had the National Bank of Poland had more detailed information on foreign transactions.

The significant share of foreign investors in the Polish economy results in the deepening of the external imbalance, measured by the value of both negative international investment position and external debt. However, the structure of NIIP is relatively safe, because the half of it does not require ongoing servicing. Likewise, the indicators of Polish external debt analysed in different aspects do not signify the threat of insolvency.

Nevertheless, if the current account deficit remains and the inflow of funds from the European Union decreases after 2020, the Polish economy will be increasingly dependent on foreign capital. This may present a significant threat to the external balance of the country. Therefore, as required by the European Commission, it is essential that indicators representing our relations with foreign countries are continuously monitored in order to counteract the imbalance, if necessary.

### **1.3. Debt of local government units in Poland after 2013**

#### ***Introduction***

The sudden increase of debt at the local government level by 2.5 times between 2008-2013 was caused by a drop in income during the economic slowdown, which was the result of the global financial crisis and increased investment. At the same time, local government units were given new projects to complete without sufficient funds to cover them. The debt of local government units and their associates rose by 45.7% in 2009 when compared with the previous year, 39.1% in 2010, and 21.0% in 2011. In 2012 the debt increased by 4.6% and in 2013 by 1.9%. The debt of local government units and their associates grew from 4.2% of the national public debt in 2008 to 7.4% in the year 2013.

The public finance reform in Poland was based, among others, on the introduction in 2009 of the third Public Finance Act, which was implemented on 1 January 2010<sup>53</sup>. At local government level this meant the introduction of fiscal rules pertaining to balancing the operational part of budget for local government units (from 2011), as well as the creation of an individual debt indicator (from 2014). The requirement to balance the operational (current) section of the budget of local government units means that a deficit is allowed in the capital expenditure section. This rule does not make it possible for local government units to enter into debt to finance current spending. Moreover, linked with the individual debt indicator legislation it is meant to motivate the generation of an operational surplus. Regarding the individual debt indicator, it is worth highlighting that the idea of abandoning strict debt limits had been suggested by both the local government and academic circles for a number of

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<sup>53</sup> Ustawa z dnia 27 sierpnia 2009 r. o finansach publicznych, Dz.U. 2009 nr 157 poz. 1240 z późn. zm. (Public Finance Act of 27 August 2009).

years. Nonetheless, an analysis of these legal solutions leads to the conclusion that they are plagued by many flaws and practically do not contribute to an improvement in financial stability at the local government level.

With this in mind, the aim of this article is to point out a set of problems caused by the introduction of the individual debt indicator in Poland after 2013.

### **1. Local government debt limits between 2010-2013**

Quantitative debt level limits were in place for all types of local government units until the end of 2013 based on art. 169 and 170 of the Public Finance Act of 30 June 2005<sup>54</sup>. A distinction was made for the first limit – *the debt service costs rule*, which could not exceed 15% of the planned income for the financial year ahead in the budget of the local government unit (15% limit relating to the scheduled loan and mortgage payments, purchase of bonds together with interest and interest in advance in a given financial year in relation to the budgeted income). Limits to debt repayment in a given year did not apply to securities, loans and mortgages based on agreements entered into with a unit that had at its disposal non-returnable aid resources (from the budget of the European Union or the aid from EFTA countries), as well as warranties and guarantees granted to local government legal entities completing local government projects utilizing these funds.

The second limit – *the debt rule*, stipulated that aggregated debt could not exceed 60% of the income of a local government unit in a given financial year. During the course of the year, the aggregated debt of a local government unit at the end of each quarter could not exceed 60% of the planned annual income. The calculation of the indicator ratio did not take into account the securities issued, loans and mortgages with European Union aid entities or help provided by EFTA states. This principle was binding until the completion of the programme, project or assignment funded by this aid and until refunds of incurred costs were received.

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<sup>54</sup> Ustawa z dnia 30 czerwca 2005 r. o finansach publicznych, Dz.U. 2005 nr 249 poz. 2104 z późn. zm. (Public Finance Act of 30 June 2005 )

## **2. Individual debt indicator**

2010 to 2013 was treated as a transition period preceding the introduction of the individual debt indicator, which is based on various parameters. Despite the two debt limits which were mentioned above, from 2011 to 2013 local government units were required to include in their long-term forecast information regarding the ratio documented in art. 243 of the Public Finance Act of 27 August 2009. On the one hand, the new indicator removes the limitations restricting local government units with high development potential, for whom taking on even significant financial commitments is a safe tool to stimulate growth. On the other hand, it brings discipline to units whose commitments impact revenues, because they need to be careful when taking out new mortgages or loans<sup>55</sup>.

The essence of the new solution documented in art. 243 of the Act can be narrowed down to forecasting that the annual ratio of payments and their associated charges compared with planned income cannot exceed the indicator based on the arithmetic mean calculated for the last three years from current income, plus earnings from sale of assets minus current spending. The indicator is calculated based on figures reported over the previous three years and represents the real ability of the given local government unit to make payments. Such criteria for the indicator make the level of debt for a given unit dependent on the operational surplus achieved in the preceding three years. On the other hand, a better indication is gained by the local governments that achieve higher income from sales of assets<sup>56</sup>. The legislator, in order to increase the capability of absorbing funds from the European Union (EU) and help offered by member states of the European Free Trade Association (EFTA), excluded those funds from the restrictions limiting repayments (over a period of 90 days).

As early as the beginning of 2014 concerns were raised regarding the implementation of the individual debt indicator. Some of them were: basing the calculations on historical data rather than the current financial health of

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<sup>55</sup> *Uzasadnienie do projektu ustawy o finansach publicznych z 2009 roku*, [http://www.nettax.pl/serwis/nawosci/Projekty/080929\\_01uz.pdf](http://www.nettax.pl/serwis/nawosci/Projekty/080929_01uz.pdf), 10.10.2015. – p. 38-39.

<sup>56</sup> E. Kornberger-Sokołowska, *Wskaźnik zadłużenia a uwarunkowania funkcjonowania jednostek samorządu terytorialnego w warunkach zmiennej koniunktury gospodarczej*, "Finanse Komunalne" 1-2/2015. – p. 38.

the local government unit; the method of calculation for the operational surplus; the inability of units that did not generate an operational surplus to enter into debt; disregard of the current economic situation; the necessity to postpone the costs of servicing debt, which will increase the cost of debt and the accumulation of these costs in the following years; the apparent improvement of a unit's financial health through sales of assets in a given year, because income from asset sales constitutes one of the parameters that influence the level of debt<sup>57</sup>.

Data from the Regional Accounting Chambers shows that prior to the introduction of the individual debt indicator, between 2010-2013 there was a drop in the number of local government units for whom the ratio from art. 243 of the quoted Public Finance Act was more advantageous because of the possibility of higher repayments than the limit applied until the end of 2013, which was 15% in relation to income (debt service cost limit). In 2010 there were 721 local government units; 437 in 2011; followed by 227 and 162 in 2012 and 2013 respectively.

In calculating the three year average, data from three quarters of the year preceding the budget year is taken into consideration, as well as annual data for the two years preceding the previous year. On the basis of the completed budgets of local government units for the year 2014, it can be stated that data for the third quarter of 2014, as well as the annual data for 2014 will influence the level of the individual debt indicator ratios in the years that follow. Comparing the averages for the years 2014 and 2015 (table 1), an increase by 196 can be observed in the number of local government units that in their budget forecast for 2015 were able to plan debt repayment at a level exceeding 6.0% of the forecast income.

There was also an increase by 14 units in the group that forecast their debt repayments together with the associated debt charges at a level exceeding 15.0% of the forecast income. The biggest drop, from 779 to 640, was noted in the group of local government units in which the individual admissible indicator of payments oscillated between 3.0% – 6.0%.

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<sup>57</sup> M. Korolewska, K. Marchewka-Bartkowiak, *Zadłużenie samorządów terytorialnych w Polsce*, "Studia BAS" Nr 4(28) 2011. – p. 121-122.

Table 1

**Average distribution of the maximum allowed level of debt repayment of local government units calculated according to art. 243 of act 1 & 2 effective in 2014 and 2015**

Wyszczególnienie	2014					2015				
	Total	Gminas	Cities with powiat status	Powiats	Voivodships	Total	Gminas	Cities with powiat status	Powiats	Voivodships
<b>Total</b>	<b>2809</b>	<b>2413</b>	<b>66</b>	<b>314</b>	<b>16</b>	<b>2809</b>	<b>2413</b>	<b>66</b>	<b>314</b>	<b>16</b>
<b>Less than 0,0%</b>	9	3	-	6	-	11	3	-	8	-
<b>0,0% – 3,0%</b>	128	89	3	36	-	69	38	2	29	-
<b>3,0% – 6,0%</b>	779	610	17	152	-	640	459	19	161	1
<b>6,0% – 9,0%</b>	990	862	27	97	4	1027	901	24	96	6
<b>9,0% – 12,0%</b>	549	512	11	17	9	641	605	15	15	6
<b>12,0% – 15,0%</b>	219	205	6	5	3	272	260	5	4	3
<b>More than 15,0%</b>	135	132	2	1	-	149	147	1	1	-

Source:<sup>58</sup>

### **3. Dangers of excessive debt**

Apart from theoretical considerations (economic and ethical) about the positive and negative consequences of entering into debt, it is important to point out the reasons why local government units use returnable sources of funding. Some of the reasons could be as follows<sup>59</sup>:

1. Ensuring financial liquidity;
2. Covering budget deficit;

<sup>58</sup> *Sprawozdanie z działalności regionalnych izb obrachunkowych i wykonania budżetu przez jednostki samorządu terytorialnego w 2014 roku*, Krajowa Rada Regionalnych Izb Obrachunkowych, Warszawa 2015. – p. 255.

<sup>59</sup> M. Jastrzębska, *Finanse jednostek samorządu terytorialnego*, Wolters Kluwer, Warszawa 2012. – p. 197-198.

3. Adjusting the weight of investment spending to be incurred by future generations of the local community to the benefits gained at the time;

4. Preventing the deterioration of living conditions and management levels in the area governed by the unit;

5. Limiting the negative socio-economic consequences of sudden or temporary changes in levels of spending;

6. Insufficient funding of local government unit caused by incompleteness of the decentralization of the public finance sector;

7. Rolling of debt (leading to the so called "debt trap").

In light of the above, it is vital to take the position that local government units should only enter into debt in order to complete investment projects, rather than to service public debt.

Regarding the assumption that the individual debt indicator will facilitate more rational financial management for both the local government units with significant development potential, as well as those that are weaker, a cautious approach should be taken. This is because increasing the level of debt becomes a limitation on spending over the long-term rather than an increase in spending. Debt repayment has to be kept in mind, which is problematic because it contributes to the phenomena of reduced income/underfinancing of local governments. The least appropriate argument for increasing debt is justifying it by the necessity of co-financing EU funding<sup>60</sup>.

An audit on the levels of debt in local government units conducted by the National Council of the Regional Chambers of Audit in 2013, that is before the implementation of individual debt indicator, showed that in the 90 local government units that were audited, attempts to increase the operational surplus by better utilization of their income sources and optimization of spending, were inadequate in relation to the rapid increase of debt, and the inevitably linked increased debt service costs (interest and interest in advance payments)<sup>61</sup>. Hence the National Council of the Regional Accounting

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<sup>60</sup> B. Guziejewska, *Dyskusja, SESJA: Indywidualny wskaźnik zadłużenia – przewidywane problemy wdrażania w samorządach i możliwe zmiany regulacji prawnych*, "Finanse Komunalne" 1-2/2014. – p. 138.

<sup>61</sup> *Zadłużenie jednostek samorządu terytorialnego Przestrzeganie ustawowych limitów zadłużenia i jego spłaty*, Krajowa Rada Regionalnych Izb Obrachunkowych, Łódź 2014. – p. 9-10.



Chambers emphasized that the above situation calls for increased care when entering into debt and considering its repayment, culminating in the establishing of standards to increase the rigor in limiting current spending; searching for new sources of funding or optimizing existing sources; developing effective mechanisms to monitor debt; careful planning and forecasting of financial figures in budgets and long-term financial forecasts; accurate presentation of data regarding the financial condition of the unit, including debt and repayments; firming up the management controls required to get debt and its repayments<sup>62</sup>.

Oversight of financial matters for local government units is given by the Regional Accounting Chamber, which in turn can be audited by the Supreme Audit Office. The latter conducted an audit whose main goal was to assess the quality of tasks performed by the Regional Accounting Chambers to counteract threats arising from excessive debt (increasing public debt) in the local government units. Overall the Supreme Audit Office focused on threats arising from excessive debt which limits development opportunities among self-governing communities, including the use of EU funds in the new financial outlook for 2014-2020. This was led by expert opinions from 2012-2013, which concluded that if investment spending in the period 2015-2020 continues at the same levels as in the period 2007-2011, it could result in over 900 local government units violating the principle of balancing the budget current spending, the so-called "Golden Rule" of finance stated in art. 242 of the Public Finance Act of 27 August 2009<sup>63</sup>. Excessive debt also carries with it the risk of loss of financial liquidity which threatens the proper completion of regulatory tasks by the local government unit<sup>64</sup>.

The result of the audit mentioned above is the identification of harmful practices used by local government units to bypass the measures (individual

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<sup>62</sup> *Zadłużenie jednostek samorządu terytorialnego Przestrzeganie ustawowych limitów zadłużenia i jego spłaty*, Krajowa Rada Regionalnych Izb Obrachunkowych, Łódź 2014. – p. 10-11.

<sup>63</sup> Ustawa z dnia 27 sierpnia 2009 r. o finansach publicznych, Dz.U. 2009 nr 157 poz. 1240 z późn. zm.

<sup>64</sup> *Wykonywanie zadań regionalnych izb obrachunkowych w zakresie przeciwdziałania zagrożeniom wynikającym z nadmiernego zadłużania się jednostek samorządu terytorialnego*, *Informacja o wynikach kontroli*, Najwyższa Izba Kontroli, Warszawa 2015, <https://www.nik.gov.pl/plik/id,8484,vp,10578.pdf>, 10.10.2015. – p. 7.

debt indicator) preventing them from taking on more debt through fictional asset sales (sale back); loans taken from parabanks; debt trading and double reporting<sup>65</sup>.

### **Conclusion**

The debt limits in place until the end of 2013 were quantitative and uniform for all types of local government units (15%; 60%). They came under criticism, which on the one hand focused on the debt limitations of financially healthy local government units, while on the other hand exposing the danger of weak units entering into excessive debt. The limitations mentioned above did not take into account the size and income potential of a given local government unit; caused rating agencies to use other methods to assess creditworthiness, but also did not include the specific attributes of particular local government units, such as, geographical position, size or natural resources<sup>66</sup>.

The idea of introducing the individual debt indicator came down to adjusting it to the financial health of the particular local government unit. However, it needs to be emphasized that this type of individual debt indicator can halt pro-development efforts, as the lowering of the budget deficit in local government units is accompanied by a decrease in investment spending.

Based on the premise that the individual debt indicator in such a form makes the possibility of local government units entering into debt dependent on the generated operating surplus, as well as the opportunity to gain income from asset sales, it should not seem strange that local government units undertake efforts aimed at improving their indicator ratio through various ways and methods of consolidating and restructuring their debt. According to E. Kornberger-Sokołowska, "it should be mainly emphasized that the new rule was introduced without making any significant changes in shaping the income and spending parts of the local government units (where there are many

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<sup>65</sup> *NIK w RIO. W Sejmie o tym, jak samorzady obchodzą ograniczenia*, [http://samorzad.pap.pl/depesze/temat\\_dnia/155630/](http://samorzad.pap.pl/depesze/temat_dnia/155630/), 10.10.2015.

<sup>66</sup> *Finanse samorządu terytorialnego (Local Government Finances)*, D.A. Hałaburda (red.), Wydawnictwo Wyższej Szkoły Ekonomicznej, Białystok 2010. – p. 119.

instances of excess, for example, the principle of having adequate funding for a project)<sup>67</sup>.

Work on improving the individual debt indicator should be given high priority because of the risk of losing financial liquidity as well as the significance of the existing regulations on issues of managing public finance and the further development of local government units.

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<sup>67</sup> E. Kornberger-Sokołowska, *Wskaźnik zadłużenia a uwarunkowania funkcjonowania jednostek samorządu terytorialnego w warunkach zmiennej koniunktury gospodarczej*, "Finanse Komunalne" 1-2/2015. – p. 40.

## **1.4. Social consequences of the financial and economic crisis: implications for fiscal policies**

### ***Introduction***

The world is experiencing a deep and prolonged economic slowdown, which is sometimes called the “great recession”. In comparison to the Great Depression of 1929-1933 and the previous economic breakdowns, the current recession occurs in an economically and financially much more integrated world. Global patterns of trade flows and foreign direct investments have contributed to a reduction of aggregate demand and financial wealth. Most OECD countries recorded lower exports and inflow of investment, rising unemployment and economic slowdown, increase in poverty and difficulties in achieving the Millennium Development Goals. One of the most important consequences of the global financial crisis was a severe deterioration in the fiscal situation of countries around the world.

The global financial and economic crisis has increased the interest in studying its consequences. Many studies show that crises are common throughout the history of rich and of poor countries<sup>68</sup>, and that their impact on unemployment, inflation and the financial sector could be huge.<sup>69,70</sup> However, we have much less information on the impact of the financial and economic crisis on the general public.

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<sup>68</sup> C.M. Reinhart, K.S. Rogoff, *This Time is Different: Eight Centuries of Financial Folly*, Princeton University Press, Princeton 2010 (NJ).

<sup>69</sup> G. Dell’Ariccia, E. Detragiache, R. Rajan, *The real effect of banking crises*, Journal of Financial Intermediation 2008, nr 17.

<sup>70</sup> S. Claessens, M. A. Kose, M. E. Terrones, *What happens during recessions, crunches and busts?*, Economic Policy 2009, nr 24.

Certainly, the impact of the crisis on the countries and regions is diverse and it depends to a large extent on the national economic situation and the given sectoral structure. In the short run, the crisis will have more effect on regions of obsolete economic structures, where manufacturing sector dominates. However, the long-term effect of the crisis in different regions can be diversified.

Hence, the purpose of this article is to broaden the knowledge about the social consequences of the financial and economic crisis as well as to formulate proposals for fiscal policy.

The article has used different research methods including secondary sources, literature and other studies, magazines and other publications, statistical analysis, inference and synthesis.

### ***1. Consequences of the social crisis***

Most countries nowadays have either directly or indirectly to do with the impact and consequences of the current financial and economic crisis.

The social costs of recent financial and economic crisis in the EU are very high. In a research conducted in 2011, it was showed that 80% of respondents believe that poverty has increased in their country over the last past 12 months, and 67% say that it increased in the EU and 63% that it happened in the area where they live.

Concerning the financial situation of households, 18% of the EU respondents said that their households within 12 months run out of money to pay for the basic goods and services.

The citizens of the European Union perceive the future rather pessimistically. Only one out of ten EU citizens (14%) believes that the financial situation of its household will improve, and almost half (47%) expect their financial situation to remain stable. More than one third (36%) of those asked expect deterioration of their situation, while in October 2010 the percentage of those people was 26%.

Subsequently, only 6% of respondents believe that they may be forced to leave their accommodation within the next 12 months because they no longer will be able to afford their housing. Hereby, more and more people perceive such a situation as “very likely” as opposed to “highly unlikely”.

Furthermore, nearly one-fifth (18%) of respondents are convinced that they will not be able to keep their jobs in the next 12 months. In seven countries, at least 3 out of 10 respondents say that they are not convinced about being able to keep their jobs.

In the health and social care, nearly one-third (32%) of the EU citizens believe that access to health and social care is getting more and more difficult. 38% of respondents have difficulties in dealing with the underlying costs of health care and childcare, which is becoming increasingly difficult. Equally, 40% of respondents say that long-term care is also becoming increasingly difficult. In 2011, for the three mentioned types of care, there has been an increase in the number of people in the EU countries who have difficulty accessing it.

The bad financial and economic situation in most of the EU countries is translated into perceptions and concerns about personal income for the retirement age. Only 14% of respondents in the EU consider that the financial and economic crisis will not affect their pensions. The majority (57%) of the EU respondents is worried that they will have insufficient incomes for their retirements allowing them to live in dignity. Only in seven EU member states, a majority of respondents say that they do not worry about their incomes in retirement: Denmark (81%), Sweden (72%), Luxembourg (67%), Finland (62%), the Netherlands (62%), Austria (61%) and Germany (58%).

MA van Dijk points to other social consequences of the crisis. For instance, in the six years following the crisis, the average life expectancy has reduced by nine months, enrolment in primary schools was reduced by 3.5%, fertility decreased by 5.5% and an increase in fertility was observed by young people by 4.5%.<sup>71</sup>

The completed and planned budget cuts, as a consequence of bad economic situation, can be detrimental to the protection of human rights. It is important therefore to avoid this risk, in particular with regard to vulnerable groups. Efforts undertaken since 2010 were related to savings, which generally lead to reductions in social benefits (retirement, disability, unemployment, etc.) as well as to a reduction in the quality of social services in general (health, education, care for children, etc.). The consequences of

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<sup>71</sup> M. A. Van Dijk, *The Social Costs of Financial Crises*, Rotterdam School of Management, Erasmus University, 2013.

these actions have primarily an affect on the population that is already economically and socially affected.

The way in which many governments decided to adapt their national budgets to austerity programmes should also be questioned from the point of view of democratic standards. Very often, the sovereignty of states and governments decreases in crisis situations and decisions are based on rather short-term considerations, on the realisation of vital needs and urgent procedures while aspects of transparency and democratic processes are neglected. In some cases even, the austerity programmes are imposed by international creditors (IMF, European Union, European Central Bank) as a pre-condition for further loans.

The main argument to promoting austerity programmes in Europe was the need to reduce excessive budget deficits that arose as a result of large social spending during the financial and economic crisis. Increasingly, however, many experts and international organisations raise doubts about the effectiveness of such programmes and claims that this financial crisis and massive bailouts for European banks rather belong to the causes of the crisis and are not effects of it. Since the end of 2009, the so-called “debt crisis” began to develop as a result of increasing debts governments experienced around the world; and at the beginning of 2010, these processes have even intensified. According to the data from the European Central Bank (ECB), the gross debt of the public sector has grown steadily since 2007, with a clear acceleration in the years 2008-2010, and then little slowed-down trend though still a further increase in the public debt ratio to GDP ratio (from 66.2% of GDP in 2007 to 88.5% in 2012).<sup>72</sup> From the beginning, public money has been used to rescue the financial system from collapse.<sup>73,74,75</sup>

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<sup>72</sup> European Central Bank (ECB): *The size and composition of government debt in the euro area*, Occasional Paper Series no. 132, October 2011, <http://www.ecb.int>.

<sup>73</sup> W Polsce na ten temat piszą także m. in.: S. Owsiak, *Spółeczny wymiar kryzysu – lekcja dla przyszłości*, Biuletyn PTE 2012, nr 2, pp. 62-75.

<sup>74</sup> T. Brzozowski, *Kryzys jako problem filozoficzno-społeczny*, Prace Komisji Geografii Przemysłu 2012, nr 17, Warszawa-Kraków, pp. 261-271.

<sup>75</sup> A. Śliwiński, *Spółeczne skutki kryzysu ekonomicznego w Polsce : bezrobocie i emigracja zarobkowa*, [www.polishclub.org](http://www.polishclub.org) (last accessed: 15.04.2014).

Based on the above general information on the social situation in the EU, it can be expected that the standards of social rights are seriously threatened in some countries, in particular given that austerity measures are frequently used in public services and social programmes, which has an impact on those who are usually dependent on social assistance or are disadvantaged by having to access to more expensive services, such as complementary services in the health sector.

Recent studies have shown that women are disproportionately affected by the financial and economic crisis. Firstly, they are not included in the decision-making process on an equal footing and cannot therefore claim to demonstrate their political priorities. Secondly, when it comes to tax reforms and social benefits, women are often more affected than men. Single women in particular are losing more as a percentage of their income. In addition, women are also negatively affected due to other types of cuts in social services, such as those on child benefits and child care, which disproportionately impacts the situation of single mothers and women from low incomes groups.

The report of the Institute of Fiscal Studies on the impact of recession on the situation of English families shows that the austerity programmes implemented by the government took place at the expense of families, especially those with many children. It is once more estimated that the income among UK families with children will fall in real terms by 4.2% in 2010-11 and 2015-16. Forecasts indicate that income in families with three children will decline by 6.8% in 2015-2016, while income in families with one child will decline by 3.3%. Experts have warned that the number of children in extreme poverty will increase by about 500,000 between 2010-2011 and 2015-2016, i.e. mostly in households where the youngest child is under the age of five.<sup>76</sup>

The most important and legally binding instrument at the European level in the field of social policy is the European Social Charter, which provides broad protection of social rights, including protection against poverty and social exclusion (Art. 30) and the right to housing (art. 31). In addition, the

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<sup>76</sup> *UK Recession: Families 'Shouldering Austerity Burden, Says Institute for Fiscal Studies*, Huffington Post (United Kingdom), 4 January 2012, [www.huffingtonpost.co.uk](http://www.huffingtonpost.co.uk).



European Social Charter pays a lot of attention to the social groups who require special protection, such as single parents, the elderly or children.

The presented unfavourable trends in the social impact of the financial and economic crisis were confirmed by the OECD in 2011.<sup>77</sup> Referring to the “debt crisis”, the OECD report stressed that despite the initial responses to the crisis, which resulted among others in raising the level of social security and reforming the pension system, the income gap has widened to the detriment of the poor.

Cephas Lumina also drew attention to the serious social consequences of the implemented austerity programmes<sup>78</sup>, claiming that they can have a serious impact on basic social services and thus on the fulfilment of human rights for the most vulnerable groups of the population such as the poor, the elderly, the unemployed and people with disabilities.<sup>79</sup> The impact of the financial and economic crisis was also confirmed by the International Labour Organisation in the “Global Wage Report 2010/2011”. The report shows that the greatest impact of the global financial and economic crisis on wages takes place in Central and Eastern Europe and Central Asia.<sup>80</sup> Thus, consequently, all Member States of the Council of Europe should strengthen cooperation and consult each other in order to promote economic and social progress, but also because they are – economically and socially – closely linked with one another.

In the context of discussion on the social impact of the financial and economic crisis, one must not forget the intensifying migration within Europe, which will also have an affect on the future of Europe.<sup>81</sup>

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<sup>77</sup> OECD: *Divided we stand: why inequalities keep rising*, Paris, 2011, [www.oecd.org](http://www.oecd.org).

<sup>78</sup> An UN independent expert on foreign debts and human rights refers in his speech Greece.

<sup>79</sup> *Greek austerity measures could violate human rights, UN expert says*, UN News Centre, 30 June 2011, [www.un.org](http://www.un.org).

<sup>80</sup> *Wages Policies in Times of Crisis*, International Labour Office (ILO): Global Wage Report 2010/2011, Geneva 2011, [www.ilo.org](http://www.ilo.org).

<sup>81</sup> J. Berger, *Demographische Folgen der Eurokrise* (Demographic consequences of the euro-crisis), NachDenkSeiten – Die kritische Website, 26 April 2012, [www.nachdenkseiten.de](http://www.nachdenkseiten.de).

## **2. Fiscal policy in crisis situation**

State institutions behaving rationally (parliament, government, political parties) should be prepared for the changes in the business cycle and the effects of institutional failures that lead to the crisis. The preparation done by the state to the management of impact of the crisis boils down to creating secure financial basis for actions (intervention) of the state, i.e. those which do not result in the deepening of the crisis. Creating such a financial basis of activities of the state in periods of slow (negative) economic growth is however not an argument for creating at the same time extraordinary financial surpluses in the national budgets (domestic), because it would then lead to unnecessary transfers of resources out of the economic circulation and social development.

There are many ways of dealing with the crisis and they vary from country to country and the level of decision-making (the central government, local government). Trying to mitigate the effects of the recession for ordinary citizens, a number of central governments started to implement large stimulus packages. The situation is particularly difficult for local governments (counties, medium and small cities, municipalities, villages) due to their often complex dependencies on transfers, as well as due to their more limited fiscal autonomy and management capabilities in the events of external shocks. There is no reason to fear that the crisis could have a negative impact on decentralisation of management. If budgets are limited due to the revenue decline, then the local governments will be less able to meet the expectations of population and will have to face the erosion of their confidence.

In many European countries, there is evidence that central governments deliberately applied pressure on local budgets to create fiscal space at the national level in order to deal with the effects of the crisis by either reducing transfers and local credits or by forcing local governments to use their own financial surpluses (Romania, Serbia, Bulgaria).<sup>82</sup> Some large countries, despite the fact that in the first phase of the crisis they did not experience a significant decline in real income at the central and local level, such decline occurred in the end though with some delay (Poland, Spain, France). In the case of only a few regions, central governments secured local budgets from the potential effects of the crisis by increasing the number of transfers in its first year (France, Czech

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<sup>82</sup> *Local Government in Critical Times: Policies for Crisis, Recovery and a Sustainable Future*, Council of Europe texts Edited by Kenneth Davey 2011, pp. 49-59.

Republic, Slovenia, Russia) or by increasing local tax rates, which are set by national governments (Czech Republic). The local budgets were also protected by the UK Government during the crisis. The Scandinavian countries (Sweden, Denmark, Finland) also fared fairly well in the crisis: they managed to protect local budgets against large cuts even though their central budgets in the first year of the crisis experienced large deficits. In essence, this was a result of the operation of automatic stabilisers and in particular the implementation of the mechanism transfers, which helped to offset the impact of fiscal shocks on sensitive social services.

The global financial crisis had (and still has) a very strong and negative impact on public finances in many countries. This was due to both the operations of automatic stabilisers and discretionary measures aiming at stimulating the economy and the financing institutions (mainly from the financial sector) that are at risk of bankruptcy. In many countries, the main challenge for fiscal policy in the coming years will thus be to stabilise public finances. If the balance in public finances is affected by expenses exceeding revenues in terms of prosperity, actions taken by such a state must be assessed as irresponsible. Such fiscal policy is the beginning of serious difficulties in public finances in the situation where one sees a clear slowdown in the economic growth or negative growth, in particular during the financial and economic crises where a greater financial engagement in the economy and corrective measures (rescue) in the financial sector are required.

If one takes a look at the basics of financial activities shaping the state, then generally the behaviour of the state in many countries in the past was far from rational. An indication of that is a deterioration of the financial foundations of state activities as a result of conscious limitation (CIT and PIT taxes). Reasons for such activities are rather of ideological character, which comes from the neo-liberal doctrine. The effects of these taxes are twofold: decline in state revenue and growth in inequalities of income.

This is confirmed by Eurostat data, which shows that in the years 2008 – 2009 there was a decline in public revenues and an increase in expenditure in relation to the GDP, which resulted in increasing by leaps of the deficits. In 2010, the total government's public expenditures (general government) of the EU-27 amounted to 50.6% of the GDP, while the total income of the general government decreased to 44% of the GDP, which increased the budget

deficit of 6.4% of the GDP. While these are average numbers, the actual situation in the EU member states was strongly differentiated.<sup>83</sup>

### **Conclusion**

Coping with effects of the social impact of the crisis on development requires promoting two interrelated policy actions. Firstly, developing a basis for social protection must be seen as an economic investment and not as a social cost. Increasing income security also increases the inclination of people of middle and lower incomes to expenses that drive the economy. This mechanism is triggered automatically and contributes to the growth of domestic demand and macroeconomic stability. Second, fiscal stimulus packages should take into account the situation of women in times of crisis, thus it should in the first place be directed towards places where women play a significant role.<sup>84</sup>

Financial crises cause an open and a covert redistribution of income (wealth) at the expense of the poorer strata of society, which are charged by the crisis the most. This thus requires a revision of the orthodox approach to fiscal policy conducted by the state, which lowers taxes and other public charges, resulting in high budget deficits due to the economic downturn, rescue operations taken by the state, and in turn due to increasing public debts and high costs of operations.

Regardless of the criticism of effectiveness of the solutions that are supposed to lead to reforms and to a deepen coordination of undertaken actions, the practice shows that it is easier to apply certain standards in fiscal policy in the international structure than when such actions are taken individually by one country. In addition, it is more difficult to destabilise the market as a consequence of an internal or an external shock. The concerted prevention, warning and anticipation of unwanted phenomena, is greater in terms of international solutions than in terms of individual actions.<sup>85</sup>

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<sup>83</sup> L. Wahrig, I. Gancedo Vallina, *The effect of the economic and financial crisis on government revenue and expenditure*, Statistic in Focus 2011/45. Eurostat.

<sup>84</sup> For instance, the planned large public projects will mainly create jobs in construction, where 80-90% of jobs are held by men.

<sup>85</sup> K. Żukrowska, *Kryzys finansowy 2007/2008+ i jego skutki dla Unii Europejskiej i strefy Euro*, *Krakowskie studia Międzynarodowe* 2012, nr 4, pp. 87-88.

## **1.5. The role of own revenues in financing budgets of local government units in Poland**

### ***Introduction***

Efficient functioning of local government units (LGUs) is determined by several factors; the most important factors include the value of funds transferred to them for their disposal and the scope of these units' flexibility in shaping their revenues. Own revenues should play a particular role in the local finances system. In the wider sense, adopted in Article 167 section 2 of the Constitution<sup>86</sup>, own revenues of local government units are revenues other than general subsidies and specific grants from the state budget, namely also shares in central taxes. However, local taxes and fees are the most important part of revenues. The requirement that at least some funds at the disposal of the local government should come from local taxes and fees results both from the European Charter of Local Self-Government, ratified by Poland<sup>87</sup>, as well as from Article 168 of the Constitution of the Republic of Poland<sup>88</sup>.

In connection with an increasing scope of tasks delegated from the central level to local government units, a question arises whether the financing system and the structure of sources of financing introduced in the Act of 13 November 2003 on the revenues of local government units<sup>89</sup>

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<sup>86</sup> *The Constitution of the Republic of Poland of 2 April 1997*, Journal of Laws of 1997, No. 78 item 483 as amended.

<sup>87</sup> *European Chart of Local Self-government*, Journal of Laws 1994, No. 124, item 607.

<sup>88</sup> *The Constitution of the Republic of Poland of 2 April 1997*, Journal of Laws of 1997, No. 78 item 483 as amended.

<sup>89</sup> Act of 13 November 2003 on the revenues of self-government units, Journal of Laws of 2003, no. 203, item 1966 as amended.

correspond to the contemporary realities of the functioning of local government units and enable them to satisfy the needs of local communities. Thus, the purpose of the paper is to clarify the term “own revenues of local government units”, indicate groups of receipts classified as revenues, their structure, and related controversies. The paper also attempts to determine the role of own revenues in financing the budgets of local government units in Poland. The analysis of the structure of revenues of local government units in the years 2006-2014 is supposed to enable the formulated purpose to be achieved.

### **1. Term and characteristics of own revenues**

The basic responsibility of self-government comes down to the provision of public services. Apart from the fulfilment of current needs of local communities, its activities should also support socio-economic development. Local government units must thus have funds adequate to the scale of public tasks they perform. The mentioned European Chart of Local Self-government reads that own revenues should be a significant part of funds, with regard to which local government authorities could pursue their own tax policy. This view is expressed also in the subject literature. S. Owsiak states that “*Theory and practice of public finance confirm a regularity that the use of public funds is more efficient if the holders of funds and the executors of public tasks are closer to the community for the benefit of which they operate*”<sup>90</sup>. The theories that provide arguments for decentralization of the decision-making process and strong local government structures owing to better effectiveness, responsibility, management capacities and decision-making autonomy, include: the principle of decentralization by W. Oates,<sup>91</sup> the principle of adequacy (relevance), by Ch. Tiebout<sup>92</sup> as well as the principles of regulation

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<sup>90</sup> *Act of 13 November 2003 on the revenues of self-government units*, Journal of Laws of 2003, no. 203, item 1966 as amended. – p. 127.

<sup>91</sup> Oates W., *The Effects of Property Taxes and Local Public Spending on Property Value: An Empirical Study of Tax Capitalization and Tiebout Hypothesis*, “Journal of Political Economy”, vol. 77, no. 6, 1969. – p. 957-971.

<sup>92</sup> Tiebout C., *A pure theory of local expenditures*, “Journal of Political Economy”, vol. 64, no. 5, 1956. – p. 416-424.

under the “public choice theory” by G. Stigler<sup>93</sup>.

In the literature, sources from which local governments obtain funds, are divided according to different factors. The most popular and generally commonly used division of the sources of financing takes the form of distinguishing two types: own revenues and compensating (balancing) revenues. M. Kosek-Wojnar notices, however, that budget balancing instruments are a non-uniform economic category because they include both non-refundable revenues (e.g. subsidies, shares in central taxes) and refundable receipts (e.g. under incurring loans or issuing securities)<sup>94</sup>. Therefore, with regard to this group of financing sources, it seems more justified to use the term revenues and compensating receipts or to separate three categories of budget financing sources, i.e. own revenues, balancing revenues and refundable receipts. On the other hand, E. Ruśkowski distinguishes only two groups of financing sources, i.e. own revenues and other revenues.

Despite the common use of the own revenues term, this category is not defined in legal regulations. Attempts of its formulation were made in the doctrine, where two concepts of own revenues of local government units can be found, i.e. own revenues in the strict sense and own revenues in the wide sense.

In the first meaning, own revenues are only revenues involving the power to impose taxes or with characteristics of specific revenue sources, or having the right to introduce and shape specific revenues (e.g. revenues from taxes and fees, revenues from property, budget units revenues). In this perspective, own revenues do not include shares of local government units in central taxes<sup>95</sup>.

In the wide sense, as adopted in Article 167 section 2 of the Constitution of the Republic of Poland, own revenues of local government

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<sup>93</sup> Stigler G., *The Tenable Range of Functions of Local Government*, [in:] *Joint Economic Committee, Federal Expenditures Policy for Economic Growth and Stability*, Washington 1957, DC. – p. 213-221.

<sup>94</sup> Kosek-Wojnar M., Surówka K., *Podstawy finansów samorządu terytorialnego (Basics of self-government finance)*, Polskie Wydawnictwo Naukowe PWN, Warsaw 2007. – p. 68.

<sup>95</sup> Ruśkowski E., Salachna J. M., *Finanse lokalne po akcesji (Local finance after the accession)*, Wydawnictwo Wolters Kluwer, Warsaw 2007. – p. 106-107.

units are revenues other than general subsidies and specific grants from the state budget, namely also shares in state taxes. In this perspective, own revenues of local government units are presented both in the currently binding Act of 13 November 2003 on the revenues of local government units and in budget reporting.

The concept of own revenues in the strict sense is accepted both in the doctrine and by the majority of representatives of local government authorities. The literature contains also other definitions of own revenues. For instance, E. Denek, taking into account financial autonomy, examines own revenues in the strict and wide sense. In the strict sense, own revenues include revenues whose amount can be determined by local authorities. In the wide sense, the author classifies as own revenues the revenues to which the following characteristics can be attributed:

- they are collected from sources in the area of operations of a given local government,
- they are transferred to local government units for disposal in full and for an indefinite period of time by the law,
- they come from sources which can be affected by local government authorities who can decide on their imposition or at least specify the legal structure of these revenues.

However, none of these notions classifies shares in state taxes as own revenues<sup>96</sup>. A similar view is expressed by P. Swianiewicz who lists 4 large sources of financing for local government, i.e. own revenues; transfers from the state budget, from other local government or other extra-budgetary sources; shares of local governments from sharing receipts from some taxes between the levels of local government authorities and the state budget and refundable funds<sup>97</sup>.

In addition, P. Swianiewicz, when discussing the recommendations concerning the structure of local government financing system, lists among

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<sup>96</sup> Denek E., Sobiech J., Wolniak J., *Finanse publiczne (Public finance)* (ed.), Wydawnictwo Naukowe PWN, Warsaw 2001. – p. 159.

<sup>97</sup> Swianiewicz P., *Finanse samorządowe. Koncepcje, realizacja polityki lokalne (Self-government finance. Concepts, execution of local policy)*, Wydawnictwo MUNICIPIUM SA, Warsaw 2011. – p. 31-33.



many elements also those related to own revenues. He suggests that possibly the biggest part of local government revenues should come from own sources. Such construction of the revenues system ensures, *inter alia*<sup>98</sup>:

- Increased responsibility of local government authorities towards inhabitants, since the budget is largely based on decisions concerning local taxes and fees, which, in consequence, also favours the building of a local democracy.

- Increased streamlining of expenses and seeking possible savings. This system limits the possibilities of increasing expenses because it would also involve increasing taxes imposed on own voters.

- Possibility of adjusting the fiscal policy to local preferences. In some towns, inhabitants can expect a higher level of social services in exchange for higher local taxes, whereas inhabitants of a different place will prefer a smaller scope and availability of services in exchange for lower taxes.

In addition, the suggested structure of revenues reduces pressure on the volume of public expenses, especially on the volume of expenses from the state budget. It results from, first of all, the fact that a dominant importance of own revenues induces to a greater extent to search for savings rather than to make attempts to obtain higher transfer revenues from the central level. A similar view is expressed by J. Rattsø, who emphasized that when a greater part of local government revenues is obtained in the form of transfers, inhabitants have a tendency to expect an excessive scope of local services, as they do not bear direct costs of financing tasks. Local government authorities, in order to satisfy the expectations of local communities, increase pressure on the central authorities expecting larger transfers, which in turn increases pressure on higher public expenses<sup>99</sup>.

An argument which supports such a solution where most revenues are own revenues is the fact that it reinforces the position of the local government in the state because the local government is, to a greater extent, a partner

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<sup>98</sup> Swianiewicz P., *Finanse samorządowe. Koncepcje, realizacja polityki lokalne (Self-government finance. Concepts, execution of local policy)*, Wydawnictwo MUNICIPIUM SA, Warsaw 2011. – p. 34-35.

<sup>99</sup> Rattsø J., *Fiscal Controls in Europe: a Summary* [in:] *Local Public Finance in Europe: Balancing the Budget and Controlling Debt*, B. Dafflon (ed.), Edward Elgar, Cheltenham UK – Northampton MA, USA 2002. – p. 277-278.

who participates in financing public tasks. It should also be noted that high share of own revenues in budgets of local government units stimulates the interest of local government authorities in promoting local development and support for local activity, which would be reflected in the form of higher tax receipts to the budget.

If budgets of local government units rely on own revenues, some concerns and dangers are involved, as such a structure of revenues results in increased differences between poor and rich regions. Taking this aspect into consideration, it appears that shares in central taxes, which raise such a great controversy, are an example of own revenues that deepen the said differences. As own revenues, these shares do not contribute to a better adjustment of the fiscal policy to local preferences, either. Therefore, it is necessary to have a system of compensating revenues, provided that only the level and character of compensating policy may raise doubts.

Notwithstanding the adopted concept of the strict or wide sense of defining own revenues, a special role within this category is played by local taxes and fees. The notion of local taxes is hard to define clearly, because this category was created not due to its economic nature or similarity of tax structures, but on the basis of legal and ownership factors related to an entity authorized to impose and collect tax. In the unitary countries, central taxes and local taxes are here distinguished, while in the countries with federal or regional structure, three groups of taxes can be indicated – federal, national and local taxes<sup>100</sup>. The discussed criterion based on ownership of revenues sources is largely traditional and results from the provisions of acts granting receipts from a specific levy to budgets of local government units. From the legal point of view, there are no obstructions to transfer any type of tax to local governments and to classify it as own revenues<sup>101</sup>. Therefore, the desired characteristics of taxes financing local government budgets gain particular importance. Some of the desired characteristics of local taxes are

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<sup>100</sup> Gajl N., *Finanse i gospodarka lokalna na świecie (Finance and local economy in the world)*, Państwowe Wydawnictwo Ekonomiczne, Warsaw 1993. – p. 134.

<sup>101</sup> Mazurek-Chwiejczak M., *W sprawie klasyfikacji dochodów jednostek samorządu terytorialnego*, [w:] *Stan i kierunki rozwoju finansów samorządu terytorialnego (Local taxes in the self-government financing system – experience of the OECD countries)*, Annales Universitatis Mariae Curie-Skłodowska. Sectio H, Oeconomia, Vol. 46 (2012), 3, Wydawnictwo UMCS, Lublin 2012. – p. 156.

identical with the characteristics of a good tax system, which are indicated by S. Owsiak. In this context, the system of local taxes should be designed considering several fundamental principles.

First, local taxes should be characterized by a suitable fiscal efficiency, making it possible to obtain funds to finance tasks imposed on local government. Also, the tax base should be distributed evenly, as it is aimed at minimizing the revenue differences between richer and poorer local governments. Another suggestion involves the so-called territorial unambiguity, meaning that it should not be difficult to determine which local government unit should receive levies from a specific taxpayer. A permanent spatial association of the tax base is also important: it means that the object of tax should be permanently connected with the given area, so that tax evasion in the form of tax base migration due to tax rate differences between local governments is impossible. Taxes that provide financing to the budgets of local government units should be “visible”, which promotes politicians’ responsibility towards their electorate. This characteristic seems particularly important owing to the profile of local democracy. An important postulate that should be taken into account when developing a system of local taxes is also the one relating to the flexibility in relation to inflation. Its implementation would enable automatic adjustment of tax receipts to the level of inflation, it would also ensure that the financial interests of local governments are protected. The simplicity of taxation, leading to reduction in costs of collection of local taxes, is equally important. A complex and non-transparent system undermines responsibility of local authorities towards inhabitants. On the other hand, the common nature of tax burdens, understood as imposing a levy on as high a number of inhabitants as possible, will contribute to increasing its fiscal efficiency<sup>102</sup>.

Individual tax structures fulfil the above requirements to a lesser or larger extent. Taxes executing the above postulates to the greatest degree include both local taxes (e.g. property tax) and state taxes that finance, which

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<sup>102</sup> Swianiewicz P., *Podatki lokalne w systemie finansowania samorządów – zagadnienia teoretyczne i praktyka rozwiązań w Polsce oraz w krajach europejskich (Local taxes in the self-government financing system – theoretical issues and practice of solutions in Poland and in European countries)* “Samorząd Terytorialny (Self-government)” 2002, no. 12 (144). – p. 5-7.

finance local government budgets in shares, and as such are classified as own revenues of local government units (e.g. personal income tax).

## **2. Own revenues of local government units in Poland**

The basis for a system of financing for the local government is the Act of 13 November 2003 on the revenues of local government units<sup>103</sup> which has been in force since 1 January 2004. The sources of revenues of local government units are set out in Articles 4-8. In this Act, the legislator outlined a concept of own revenues in the wide sense by referring to a wide constitutional definition. Emphasizing its choice, in Article 3 section 2 the legislator wrote as follows: “*as defined by the Act, own revenues of local government units are also shares in receipts from personal income tax and from corporate income tax*”.

In Article 4, the legislator lists, among others, local taxes and fees that constitute tax revenues of the municipality, i.e. taxes: property tax; agricultural tax; forest tax; tax on vehicles; tax on business operations of natural persons, paid as fixed amount tax; tax on inheritances and donations, tax on civil law transactions; fees: stamp duty, fair fee, local fee, spa fee and fee for having dogs, and part of maintenance fee, also other public fees on the basis of separate regulations. The same article also reads that revenues of the budget of the municipality include shares in taxes constituting the state budget revenues in the amount of:

- 39.34% of receipts from personal income tax paid by natural persons residing in the municipality
- 6.71% of receipts from corporate income tax paid by partnerships and companies, and by organizational units without legal personality having their seat in the municipality.

In the case of poviats and voivodeship local governments, the list of tax revenues is much shorter. For poviats local governments, it is listed in Article 5 sections 2 and 3 and is limited to:

- 10.25% of share in receipts from personal income tax,

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<sup>103</sup> *Act of 13 November 2003 on the revenues of self-government units, Journal of Laws of 2003, no. 203, item 1966 as amended.*

- 1.4% of share in receipts from corporate income tax, from taxpayers of this tax, with their seat within a poviats.

In turn, voivodeship local government, under Article 6 sections 2 and 3, receives:

- 1.6% of share in receipts from personal income tax,
- 14.75% of share in receipts from corporate income tax, from taxpayers of this tax with their seat within a voivodeship.

Under tax revenues of local government units, one may distinguish shares in receipts from taxes constituting the state budget revenues on one hand, and local taxes on the other, yet the latter are only present at the level of municipalities. The general principle says that the maximum rate of these taxes is determined by the Act, while exclusive competence of the municipality council is to adopt a resolution on tax rate binding in a given municipality. The Act may introduce statutory exemptions, while a resolution of the municipality council may also provide for additional exemptions. The mayor / municipality head, when taking individual decisions regarding public administration, may also give individual reliefs, exemptions, remissions and deferments of tax payment.

The catalogue of other sources of own revenues, except for receipts from taxes, is practically identical for municipalities, poviats and voivodeships. It is presented in the table below.

Own revenues are a special type of revenues of the local government units. They determine the degree and scope of financial autonomy of local government authorities, as they are treated as an index of such autonomy's level<sup>104</sup>. In addition, it strongly determines the quality and scope of the services provided for the local community. Including the shares in state taxes in own revenues of local government units definitely raises the value of the index of financial autonomy of local government units and indicates high possibilities of local authorities in the scope of shaping the amount of most revenues collected to the budget. However, in reality, this impact is limited.

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<sup>104</sup> Marczak J., *On the classification of revenues of self-government units*, [in:] *Condition and directions for development of self-government finance*, (ed.) L. Patrzalek, Wydawnictwo WSB, Poznań-Wrocław 2007. – p. 175.

Table 1

**Other sources of own revenues of local government units**

Other sources of own revenues		
Municipalities	Poviats	Voivodeships
<ul style="list-style-type: none"> <li>• revenues obtained by local government budget units and payments from local government budget-financed institutions;</li> <li>• revenues from property of a given local government unit*;</li> <li>• inheritances, bequests and donations for a given local government unit *;</li> <li>• revenues from fines specified in separate regulations;</li> <li>• 5.0% of revenues obtained for the state budget in connection with the execution of tasks within government administration and other tasks commissioned by acts, unless separate regulations provide for otherwise;</li> <li>• interest on loans granted by a given local government unit *, unless separate regulations provide for otherwise;</li> <li>• interest on untimely transferred receivables constituting revenues of a given local government unit*;</li> <li>• interest on funds collected on bank accounts of a given local government unit *, unless separate regulations provide for otherwise;</li> <li>• subsidies from budgets of other local government units;</li> <li>• other revenues due to a given local government unit * on the basis of separate regulations.</li> </ul>		
	revenues from fees constituting revenues of a poviats, paid on the basis of separate regulations;	

\* to a given municipality, poviats and voivodeship, respectively.

Source: prepared by the author on the basis of *the Act of 13 November 2003 on the revenues of local government units*, Journal of Laws 2003, No. 203, item 1966 as amended

The presented classification considerations and dilemmas translate into the structure of budgetary revenues of local government units. Adequate data from this field for 2006-2014, with the assumption that own revenues of local government include shares in state taxes, are presented in the table below.

The average share of own revenues in total revenues for all local government units was decreased. However, the same trend is not so clearly visible on individual levels of local government. Own revenues are the most important source of revenues in cities with poviats status and in municipalities. On the other hand, in poviats, they account for only approximately 30% of total revenues, and in voivodeships – approximately 37 %.

Table 2

**Structure of revenues of particular degrees of the local government  
in the years 2006 – 2014 (in %)**

Specifi- cation	Years	Total own revenues	including:				Specific grants	General sub- sidy	including:	
			shares in income taxes	receipts from local taxes and fees	revenues from prop- erty	other revenues			educat- ion	other
Poland, of which:	2006	53.73	22.70	14.42	4.84	11.77	16.77	29.50	22.88	6.62
	2007	56.43	25.28	14.22	4.87	12.06	15.60	27.98	21.47	6.51
	2008	54.95	25.26	13.66	4.31	11.72	16.67	28.38	21.68	6.70
	2009	48.63	21.70	12.60	3.67	10.66	22.12	29.25	21.57	7.68
	2010	48.27	20.28	12.50	3.90	11.59	22.75	28.98	21.51	7.47
	2011	48.83	21.19	12.55	3.77	11.31	22.95	28.22	21.55	6.67
	2012	49.09	21.20	12.99	3.91	10.98	22.36	28.55	22.07	6.48
	2013	49.91	21.00	13.32	4.11	11.48	22.10	27.99	21.58	6.41
2014	50.54	21.22	13.10	4.11	12.11	23.03	26.42	20.39	6.03	
Municipalities	2006	47.38	15.22	19.33	3.95	8.88	19.98	32.63	24.22	8.42
	2007	49.50	17.41	19.08	4.79	8.23	19.15	31.34	23.14	8.20
	2008	49.26	18.23	18.71	4.44	7.87	18.79	31.95	23.24	8.72
	2009	46.27	16.27	18.33	3.70	7.96	19.84	33.89	23.88	10.01
	2010	44.62	14.79	17.03	3.63	9.16	24.02	31.36	22.45	8.91
	2011	45.48	15.95	17.37	3.43	8.73	23.83	30.68	22.36	8.33
	2012	46.58	16.41	18.35	3.49	8.33	21.98	31.44	23.09	8.35
	2013	48.11	16.85	19.13	3.46	8.66	20.93	30.96	22.60	8.36
2014	49.24	17.26	18.87	3.31	9.81	21.63	29.13	21.62	7.51	
Cities with poviat status	2006	67.70	28.82	16.79	8.01	14.08	11.01	21.29	19.57	1.72
	2007	70.32	31.22	16.65	7.03	15.42	9.79	19.90	18.05	1.85
	2008	69.51	32.07	15.81	6.04	15.59	9.86	20.63	18.88	1.75
	2009	66.09	29.94	15.15	5.84	15.17	11.45	22.46	20.25	2.20
	2010	63.62	26.99	14.93	6.08	15.63	14.47	21.91	19.92	1.99
	2011	63.23	27.30	14.66	5.90	15.37	14.82	21.95	20.18	1.77
	2012	61.08	25.91	14.15	6.03	14.99	17.24	21.68	20.08	1.61
	2013	62.07	25.39	14.23	6.63	15.83	16.61	21.32	19.82	1.49
2014	62.57	25.56	13.96	6.82	16.24	17.34	20.09	18.74	1.35	
Poviats	2006	30.79	14.88	x	1.89	14.02	23.13	46.08	38.12	7.96
	2007	32.23	17.08	x	1.67	13.48	21.68	46.09	36.88	9.21
	2008	32.36	17.31	x	1.64	13.42	23.15	44.49	35.71	8.78
	2009	28.37	14.44	x	1.27	12.66	25.76	45.87	35.12	10.74
	2010	28.17	13.00	x	1.36	13.81	28.49	43.34	32.72	10.62
	2011	27.73	13.97	x	1.38	12.38	29.39	42.88	32.94	9.94
	2012	29.36	15.48	x	1.40	12.48	25.26	45.38	35.49	9.90
	2013	29.87	15.89	x	1.53	12.45	25.59	44.53	34.77	9.76
2014	31.22	16.57	x	1.50	13.15	25.96	42.82	33.15	9.67	
Voivodships	2006	63.84	49.33	x	0.55	13.96	14.22	21.94	6.09	15.85
	2007	68.28	52.01	x	0.86	15.41	13.07	18.65	5.25	13.40
	2008	58.53	44.65	x	0.76	13.12	23.54	17.93	4.84	13.09
	2009	32.30	25.92	x	0.45	5.94	53.41	14.28	3.37	10.91
	2010	40.44	34.39	x	1.02	5.03	38.71	20.86	4.87	15.99
	2011	44.29	35.84	x	1.14	7.31	39.13	16.59	4.90	11.68
	2012	42.98	35.37	x	1.32	6.29	40.57	16.45	5.07	11.38
	2013	38.99	31.63	x	1.05	6.31	44.66	16.35	4.82	11.53
2014	36.49	29.53	x	1.04	5.92	47.48	16.03	4.01	12.03	

Source: Information from performance of budgets of local government units after 4 quarters for particular years (2006 – 2014), Ministry of Finance, [www.mf.gov.pl](http://www.mf.gov.pl).

The share of own revenues decreased to the greatest degree in voivodeships – from 63.8% in 2006 to 35.5% in 2014, and in cities with poviats status, however the change was significantly smaller (from 67.7% to 62.6%). In the case of poviats, the share of own revenues in total revenues remained unchanged, in spite of the fact that changes were observed in the analysed period. On the other hand, in municipalities, this trend was opposite, which means that the importance of own revenues increased, while only slightly (from 47.4% to 49.2%).

Among own revenues of all local government units together, shares in central taxes (approximately 41-43%) as well as revenues from local taxes and fees (approximately 25-27%) are the most important. On the other hand, the situation differs among individual levels of local government. In municipalities, the greatest share of own revenues is attributed to receipts from local taxes and fees (approximately 38-39% of own revenues), and shares in income taxes account for approximately 33-35% of own revenues. In own revenues of cities with poviats status, shares in central taxes are of the greatest importance. In the initial period of the analysis, they reached as much as 45%, but since 2010, their importance has shrunk and presently they account for approximately 42%. The share of receipts from local taxes and fees (by about 2.5 percentage points) and revenues from property also decreased. In 2014, they accounted for 22.3% and 10.9% of own revenues, respectively. On the other hand, other revenues increased, and in 2014 they accounted for nearly 26% of own revenues. In poviats, shares in state taxes have been recently more than 52% of own revenues, and revenues from property were approximately 5% of own revenues.

To sum up, it should be concluded that within the structure of revenues of local government units, own revenues account for approximately 50%. In the period 2006-2008, they accounted for approximately 55%, and since 2009 their share has decreased slightly. This change was a result of the increased role of subsidies. Since 2009, local government units have received, apart from the past specific grants, the so-called development subsidy, which was not recorded previously, and in 2010 it was replaced by subsidies § 200 and 620, transferred within programs financed by European funds, and other foreign non-refundable funds and payments from European funds<sup>105</sup>. As a result, the share of specific grants in total revenues of local government units

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<sup>105</sup> *Act of August 27 2009 on public finance*, Journal of Laws of 2009, no. 157, item 1240, as amended, Art. 127, section 2.



in the analysed period increased from 16.77% in 2006 to more than 23% in 2014 (which was particularly visible in budgets of voivodeships). In the case of general subsidy, its share decreased slightly in the structure of revenues. Transfers to local government units account for nearly half of revenues. In the period during which the provisions of the Act of 13 November 2003 on the revenues of local government units<sup>106</sup> were in force, the scope of economic autonomy of local government units changed slightly: it is determined by the share of own revenues in the overall amount of budgetary revenues of local government units, despite some fluctuations in particular years of this period. Change in the structure of revenues of local government units consisted, above all, in increasing share of subsidies and decreasing share of own revenues (except for municipalities and poviats) and decreasing share of general subsidy. This change has brought about insignificant decrease in autonomy resulting from a lower possibility to use general subsidy for the purposes determined by the statutory body, especially as the manner of calculating some of its parts was related to the execution of specific tasks (e. g. educational tasks).

The financing system for municipalities, cities with poviat status, poviats and voivodeships in the period 2006-2014 was characterized by an overall trend consisting in decreasing own revenues, limiting the role of subsidies, and significantly increasing the importance of specific grants in financing tasks: as a result, the system is more and more based on transfers.

### **Conclusion**

25 years of the local government system served as a reason for intensifying the debate on its basic problems and challenges concerning the sources of financing, scope of activities as well as the area of activity of local governments.

The conducted analyses show that own revenues account for approximately 50% of total revenues of local government units. However, a clear trend cannot be indicated, because their significance varies among individual levels of local government. Own revenues play the most significant role in financing budgets in cities with poviat status and in municipalities (they account for approximately 63% and 49%, respectively). In the case of

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<sup>106</sup> *Act of 13 November 2003 on the revenues of self-government units*, Journal of Laws of 2003, no. 203, item 1966 as amended.

voivodeships, their share in the structure of total revenues in the analysed period was falling gradually and in 2014 they accounted for 36.5%. However, the smallest role of own revenues in financing budgets was recorded in poviats with the share of approximately 30%. A considerable part of own revenues are shares in central taxes whose classification into this category of revenues raises huge controversy on theoretical grounds. In cities with poviat status they account for nearly 45% of own revenues, and in municipalities approximately 35%. Thus, it may be concluded that the principle that budgetary revenues of local government units should be based on own revenues is implemented to a different extent, depending on the local government level. Although budgets of municipalities and cities with poviat status are based on own revenues in at least 50%, in the case of poviats and voivodeships, transfers from the state budget are crucial.

For a certain period of time, we have been observing subsequent proposals of changes in this respect; they have been presented both by practitioners and theoreticians working on the topics related to local government. Expectations of the local government relate to changes with regard to local taxes and fees by strengthening tax revenues of municipalities and a system approach to property taxation reform. Meanwhile, the majority of the postulates presented is focused on increase in the share of local government authorities in income taxes and intermediate taxes, and strictly speaking, share in Value Added Tax. The concept of introduction of the so-called municipality PIT, on which works were conducted in the Chancellery of the President of the Republic of Poland<sup>107</sup>, is also widely discussed.

It should be emphasized that the volume of revenues of local government authorities is influenced by institutional solutions. The scope of these solutions includes a system of public levies as well as a system of distribution of public revenues between central authorities and local authorities. Therefore, any changes in the system of public levies that determine the level of financing of local government authorities should be made extremely carefully, following in-depth analyses and calculations of the hypothetical effects for the tasks executed by local government units.

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<sup>107</sup> Office of the President of the Republic of Poland, *The President transferred to self-government members the draft Act*, <http://www.prezydent.pl/aktualnosci/wydarzenia/art,3304,spotkanie-z-przedstawicielami-samorzadu-terytorialnego.html>, [accessed on 23.07.2015].

## **II. INNOVATIVE TRENDS IN MODERN FISCAL AND ECONOMIC POLICY**

### **2.1. Impediments of funding innovative solutions in the economy of waste electrical and electronic equipment**

#### ***Introduction***

Finances is one of several major factors of problem that accompanies the society for a very long time. Mainly play a decisive role in the pace of economic development inter alia. the electronics branch.

Dynamic development of the electronics branch in the world fast pace of appearing i.a. new electronic and electrical equipment also resulted in dynamic growth of problematic waste from this branch.

Therefore, funding for eco-friendly solutions in terms of the overall economy of e-waste<sup>108</sup> is important. Bearing in mind the special nature of this waste cannot allow for lack of financial support in the form of subsidies and

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<sup>108</sup> Other term for waste electrical and electronic equipment.

low-interest credits for projects carried out not only by governments, but also by groups or individual recipients<sup>109</sup>.

Phenomena such as globalization, the rapid flow of information, dynamic technological progress, relatively easy access to capital, changes in cultural values, the evolution of social norms, generalization of the concept of the knowledge-based economy, reducing the life cycle of electronic and electrical products fiercer competition between enterprises in different fields should gather unprecedentedly wide-ranging speech towards the intense change in terms of financing environmentally friendly behavior.

Observing the current management of electronic and electrical waste, it can be recognize the relatively low level of social activity of citizens, self-governments, economic operators in their efforts to develop a coherent system of financing and management of this particular group of waste. Introducing innovative solutions for the management of waste electrical and electronic equipment and organize the appropriate functioning of the financial system is very important since increasing annually the number of new waste with a very complex structure and sophisticated chemical composition is dangerous to humans and the surrounding nature. The globalization of the world economy, the essence of which is the process of creating a network of connections and interdependencies between countries and regions, both in the economic sphere and in the technological and cultural sphere. Therefore, in the area of financial relations and trade, which is associated with increasing flows of goods and services, physical capital and financial capital<sup>110</sup> is the current approach to the management of waste electrical and electronic equipment is very superficial. This is mainly resulted from too little funding for this purpose as well as insufficient ecological awareness, which is the result of lack of suitable environmental education.

The main aim of introducing an adequate system of management and financing of projects relating to waste electrical and electronic equipment is the pursuit of the system which is consentaneous with the principle of balanced and sustainable development. This is only possible with the effective use of all available opportunities at the same time, those of the part of man and technology.

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<sup>109</sup> M. Nowak, *OZE: w którą stronę?*, Ekopartner nr 10, 2008.

<sup>110</sup> A. F. Bocian, *Globalizacja a zrównoważony rozwój*, w: *Teoretyczne aspekty ekonomii zrównoważonego rozwoju*, red. B. Poskrobko, Wyd. WSE, Białystok 2011, s.20

According to S. Szukalski, global organizations are carriers of the realization of new trends in research and implementation. It is particularly evident dynamically growing participation of corporations in the financing of research and the role of corporate research centers. Creating a corporate business support centers is now becoming an important source of competitiveness in global markets. They give basis for a reduction in costs, but also enable the use of local resources, research capacity in other countries and allow you to enter the markets, where there is a beneficial relation of inputs to profit<sup>111</sup>. We should use the knowledge, experience and technology of countries that already use it.

Only by the certainty of achieving a positive economic result from the introduction of innovation and the possibility of its use in practice<sup>112</sup> due to the meaning of its exploration and introduction to such a special group of waste, that electrical and electronic equipment.

Analyzing the subject it is hard do not ask the basic question, how so current topic of innovation and financial barriers is part of the functioning of the management of waste electrical and electronic equipment?

### ***1. The concept and the tasks of introduced innovations to the management of waste electrical and electronic equipment***

The term "innovation" derived from the Latin "innovatis", that is, renewal, creating something new. Currently it defined as the introduction of something new, of newly introduced thing, novelty, reform<sup>113</sup>. Efforts which lead to introduce innovative solutions to the economy are a number of activities of a scientific (research) technical, organizational, financial and trade (commercial) nature, whose aim is to develop and implement new or significantly improved products and processes<sup>114</sup>.

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<sup>111</sup> S. Szukalski, *Nowe trendy w organizowaniu badań i prowadzenia działalności gospodarczej*, red. B Poskrobko, Wyd. WSE, Białystok 2011, s. 59-70

<sup>112</sup> P. Niedzielski, K. Rychlik, *Innowacje i Kreatywność*, Uniwersytet Szczeciński, Szczecin 2006, s. 19.

<sup>113</sup> J. Tokarski (red.), *Słownik wyrazów obcych*, PWN, Warszawa 1980, s. 307.

<sup>114</sup> Podręcznik Oslo: *Zasady gromadzenia i interpretacji danych dotyczących innowacji*. 2008.

In the professional literature, PR Whitfield proposed particularly interesting definition of innovation. He determines the innovation as a sequence of complex activities involving problem solving. In a result, a comprehensive and completely elaborated novelty is formed<sup>115</sup>.

In contrast, in colloquial speech, it means something new and different from existing solutions associated with the required change for the better<sup>116</sup> innovation<sup>117</sup>, that improves the efficiency of use of natural resources in the economy, reduce the negative impact of human activities on the environment or strengthens the environmental resistant to the developmentally – economic pressures, without much hesitation, concept of “innovation” and it can be included in the canon of attractive economic – environmental terms of contemporaneity.

This concept can be seen in terms of narrow and broad. The narrow innovation is simply an. invention, which use is defined, in contrast, broader sense is the whole management process, which includes a variety of activities leading to the creation, development and introduction of new value in products or new technologies related to the rational use of natural resources, which are new for those units forming, placing and use. Broad innovation also included the transfer of existing or new market partners, and may be the work result of the companies’ group<sup>118</sup>. This approach points to the approval of cooperation, exchange of experiences, sharing of existing technologies and all these activities are guided by one common goal which is the good of them natural environment.

Besides, the second binding term, which is also very important in this issue, is the concept of “innovativeness”. According to P. Niedzielski, innovativeness is a feature of business economic operators or economies,

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<sup>115</sup> P.R. Whitfield, *Innowacje w przemyśle*, PWE, Warszawa 1979, s.26.

<sup>116</sup> W. Janasz, K. Koziół, *Determinanty działalności innowacyjnej przedsiębiorstw*, PWE, Warszawa 2007, s. 11.

<sup>117</sup> Innowacja (za OECD, Eurostat 2008) to wdrożenie w praktyce gospodarczej nowego albo znacząco udoskonalonego produktu, usługi lub procesu, w tym także wdrożenie nowej metody marketingowej lub organizacyjnej dotyczącej sposobu pracy lub stosunków z otoczeniem.

<sup>118</sup> P. Niedzielski, K. Rychlik, *Innowacje i Kreatywność*, Uniwersytet Szczeciński, Szczecin 2006, s. 21.

meaning the ability to create and implement of innovation as well as their absorption, binding to the active engaging in innovative processes and take action in this direction. It is also means a commitment to acquire the resources and skills needed to participate in these processes<sup>119</sup>.

With the concept of innovation and innovativeness it is strongly associated with the phenomenon of progress. Although, the total identification of these concepts is not advisable because of the broader and deeper nature of innovation and innovativeness in particular in relation to the management of e-waste. Introducing innovative solutions to modern management and management of waste before the landfilling process is the best management, for broadly understood environmental aspect. Such approach should be taken into account at the design stage of products, extending their vitality (eco-design). It would allow for reconcile the norms and standards that must meet the requirements of modern electronics with the respective requirements in the “directive waste”.

The introduction of innovation to the management of waste electrical and electronic equipment is associated with a number of challenges which are interdependent of each other – such fundamental element among others is the financial aspect. Directly identified barrier is the most restrictive in the process of implementation and adaptation of new technological solutions. Financial barriers can strongly restrict the introduction of innovativeness, especially in the sector of small and medium-sized enterprises, where an important role from the point of view of innovation economy plays presence and action range of entities interested in financial support for innovative projects.

Consequences of gap in access to capital, both domestic as well as foreign to the costly pro-ecological innovative investments, is the bottleneck in the whole system for the collection, recovery and recycling of used electrical and electronic devices. Take up new activities requires a new impetus to protect its development and not small financial resources to complete tasks that stand before innovation. The issues, that substantially affects the development of the management of waste electrical and electronic equipment, are barriers that impede the reorganization of the national economy and thus adversely affect its functioning.

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<sup>119</sup> P. Niedzielski, *Rodzaje innowacji w: Innowacje i transfer technologii – Słownik pojęć*, K.B. Matusiak (red.), PARP, Warszawa 2005, s. 74.

It should be noted that the approach to introducing innovative solutions to e-waste management is constantly changing and will be changing with increasing environmental education and awareness of society, and increasing degree of threat from this specific group of waste.

The basic tasks associate with innovative techniques and environmental technologies of management of waste electronic and electrical equipment mainly involve limiting its harmful effects towards the environment and its surroundings.

The industry development and pausing the development of technical innovation crucially adversely affect the environment and even such activities contribute to the deepening of environmental pollution.

The introduction of innovative processes for the production will result in socio-economic development, but also will be a source of new threats if, together with innovation in production, will not go innovation in the management of waste.

In the branch literature usually lists the common benefits of innovation, and ignores the adverse effects that manifest themselves with some delay and usually leaps and bounds in the form of crises of environmental, social, societal, etc. To avoid this, innovation should be introduced in parallel, i.e. for production and waste. The negative effects of innovative processes manifest themselves, primarily, in environmental degradation.

This results the fact that constructors see only benefits from the introduction of a new product and do not see the negative impact of technological innovation on the natural environment. The technique can achieve success in the ecosystem if its targets will take into account the economic system as a whole, and not just isolate easily accessible part of it. Goals and effects of technical and technological development should be considered in economic but also environmentally friendly term. Ecology should be an area of intense innovation processes and keeps up with practical solutions in this area. Keep in mind that eco-innovation introduce significant changes in technology, organizational structure and management of the company at the same time reduce or prevent negative impacts on the environment.

Classification of innovations in ecological aspect can be performed from the point of view various criteria such as innovation in:



- the product, where their main task is to reduce or eliminate environmental pollution;

- the manufacturing process, by introducing specific solutions and environmental activities throughout the technological process of production. It may be necessary to change the basic material or other factors of the production process to more environmentally clean technologies;

- management and organization of enterprise which rely on building organizational structures, that integrate environmental protection with the all company's tasks.

The eco- friendly companies with the disposal of scientific potential and using innovative solutions contribute to the technological progress which, to a large extend, determines the pace of development of rational waste management of electrical and electronic equipment. The innovative progress is necessary and inevitable in today's globalization.

Eco-innovation tasks relating to the enterprise and the environment are:

- minimalization of environmental hazards;
- acquiring new customers;
- enhancing the attractiveness of the company on the market – the enterprise “eco”;
- ensuring the business development;
- increase competitiveness of products;
- minimalization of environmental risk-house.

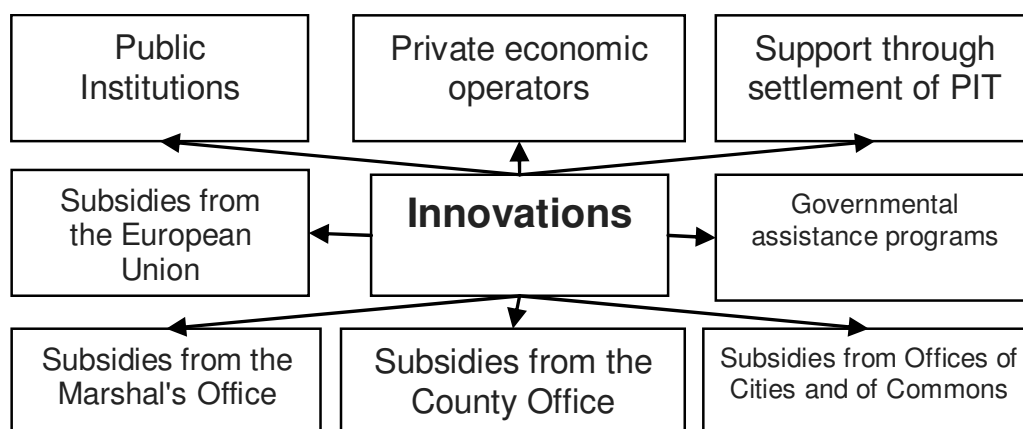
## ***2. The importance of financial resources for the introduction of innovative technologies to the management of waste electronic and electrical equipment***

Economic transformations that are taking place since accession to the EU has created wider possibilities for innovative technology development in relation to electronic and electrical waste. The technological development, in the area of technique, has reached such a high level that the process of “aging” devices used to date follow up quickly and leads to the production of significant quantities of this type of hazardous waste.

It is also observed the phenomenon of abandonment reparation of electric and electronic devices, because very often the service costs are greater than the purchase price of the new device. Because of the wide variety of hazardous substances, poisonous contained in electronics such as mercury, cadmium, lead, chromium, PCB, PBB and PBDB, so waste which arising (withdrawn from service) are treated as dangerous<sup>120</sup>.

Introducing innovative solutions to the management of waste electrical and electronic equipment is a great opportunity to regulate many missing issues as well as elements of conflict, because the development and implementation of innovative solutions from the very beginning is connected with the not inconsiderable financial resources. It should be noted that during the elaboration and the implementation of innovations, costs which are incurred are not always possible to predict in detail at the initial stage. Their amount is dependent on many factors (both internal and external), from the first research work necessary to conduct a thorough analysis of the initial stage of innovation development, the severity of the changes, the cost of promotional activities incurred to promote innovation, etc. Frequently level of these costs exceeds its own financial capacity of entities conducting innovative activity. Hence the need to raise capital from a variety of available sources.

Examples of their imaging is presented below.



**Scheme 1. Expected areas of financial support for innovation**

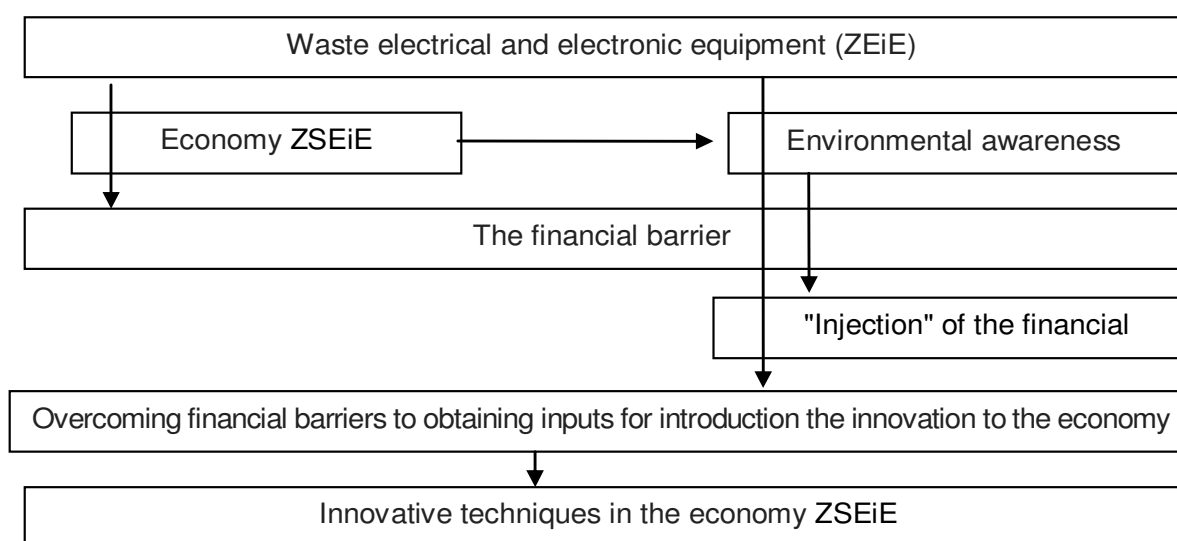
Sources: own elaboration

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<sup>120</sup> A. Listwan, I. Baic, A. Łuksa, *Podstawy gospodarki odpadami niebezpiecznymi*, Politechnika Radomska, Wyd. II, 2009.

Analyzing the above scheme, it can be concluded that the involvement of many entities in the system of financing innovative solutions in order to improve the functioning of the management of waste electrical and electronic equipment promising the long-term perspective of support for innovativeness.

An important element is that the financial support was carried out at many levels of introduced innovations and referred to many aspects of eco-friendly technologies and available instruments, whose primary task is technological and technical support for innovative projects.



**Scheme 2. The way to introduction of innovative solutions in the ZSEiE economy**

Sources: own elaboration

The main barriers on the way to introducing innovations are mainly associated with the financial aspect. Financial constraints, outdated infrastructure and the uncertainty of the market are not conducive to introduce manifestations of ecological changes. Unmatched form of aid and inefficient selection of beneficiaries (mainly large companies) cause reluctance to take any action in this area for small and medium-sized companies, which sometimes have very ambitious plans, ideas, projects.

The reluctance to use expert advisory services is a general problem that arises in all phases of the development and implementation of innovative environmental technologies. The main reason for this is too high cost for such services.

Useful knowledge, experience but limited financial resources disqualified at the start.

### 3. The sources of financing the innovative development of e-waste economy

Innovative solutions in the economy of waste electrical and electronic equipment are a great opportunity to regulate interconnections on the line environment-technology-environment. The search for funding sources of introduced ecological innovations in the economy of waste electrical and electronic equipment, as well as the assessment of the possibility of their implementation in specific conditions, including workers, innovative activity can bring the enterprise great success.

Table 1

#### The target sources of financing the management of waste electrical and electronic equipment

Criterion for the division	The source of financing
The origin of the financial resources	- internal sources (own resources of the operator) - external sources (means from the environment of the operator)
Type of owned capital	- equity (share capital, not divided profit, etc.). - foreign capital (bank loans, factoring, leasing, etc.)
The origin of the entity providing the support	- national sources - sources of foreign
Form of financing	- non-repayable subsidies - backlinks subsidies - loans / credits provided on preferential terms or market
Ownership of the means allocated to the financing of innovative activity	- public sources (state budget, Common or non-governmental institutions) - private sources of entities (investment funds) - public – legal sources (means under the agreements of public – private partnership)
The origin of the socio – Tax	- private transfer 1 percent of the settlement of PIT - write-offs for innovation private and state-owned enterprises, businesses

Sources: own elaboration based on A. Janik, *Koszty i potencjalne źródła finansowania innowacyjnych technologii środowiskowych*, [w]: Łączny J.M., Baran J., Ryszko A. (red.) *Opracowywanie i wdrażanie innowacyjnych technologii środowiskowych stosowanych na zwałowiskach odpadów powęglowych. Podstawy teoretycznometodyczne i przykłady praktyczne*, Wydawnictwo Naukowe ITE-PIB, Radom 2012.

Due to the complexity of construction of waste electrical and electronic equipment, the recycling centers are enforced to the introduction of continuous changes in their technologies and processes, disposal and recycling. At the time of abandonment such activities and put aside introduction of innovativeness to

enterprises means only the risk of losing existing market position. Therefore, an effective system of financing is so crucial.

By analyzing potential sources of financing innovative economic activity we can notice that such activities should be funded from many independent sources. The positive effects of such financing will be particularly felt by local communities and their living environment<sup>121</sup>. It coincided with the struggle of residents to improve their own economic and environmental situation.

### **Conclusion**

The high costs of implementing innovations for the management of waste electrical and electronic equipment is the basic problem of its development. The shortage of equity, as well as lack of access to different forms of financing, like EU and external sources, limited the companies to take, more than once, risky ventures including, in particular, those in the early stages of their realization. The current state stemming from a small involvement of all the cells responsible for the natural environment, too low negligible ecological awareness and education.

The process of raising the level of innovativeness in the economy such special group of waste should steer clear of all bureaucratic obstacles.

Whereas aid to introduction the financing system of innovative technologies to small and medium-sized plants which processing the waste electrical and electronic equipment will result in building competitive advantage and contribute to high development and maintenance on market industry. The economy of this particular group of waste if it wants to develop, must improve their economic conditions, therefore, changes in the system of financing are necessary.

The basic element of any development and functioning of the entire sectors of the economy should be well-functioning legal system. The law and the effectiveness of its execution, which plays a key role and creates the basis for economic activity, also can be the key to success. It should be noted that despite many regulations, ever wider circle of business pro-ecological management of e-waste, so far, has not reached the appropriate effectiveness expected by society, entrepreneurs, public authorities. Low

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<sup>121</sup> Por. P. Roberts: *Alternative forms of local and regional policy for the 1990's*. W: Regional policy at the crossroads. European perspectives. Red. L. Albrechts, F. Moolaert, P. Roberts, E. Swyngedouw. J. Kingsley Publ., London 1989, s. 170-179.

effectiveness of enforcement of existing laws, relating to waste electrical and electronic equipment, is also a problem.

Relatively low expenditures on particular at the present time economy with dynamic growth of electronics production and the phenomenon of abandonment the use of waste equipment for a new is the problem which has doubled and is gaining strength.

The main factors which impeding innovative activity in the economy of waste electrical and electronic equipment, in particular are:

- lack of financial means,
- too high costs of introducing innovative solutions to small and medium-sized enterprises,
- negligible importance of small and medium-sized companies on the corporations' background.

According to A. Jasinski innovative enterprise is one, that <sup>122</sup>:

- conducts a wide range of research-and – development (or purchases new products and technologies),
- spent on this activity relatively high financial outlays,
- systematically implementing new scientific – technical solutions,
- represents a large share of new products (goods and technology) in the volume of production and services,
- constantly introduce the innovations on the market.

According to W. Janasz and I. Leśkiewicz innovativeness of enterprises is the motivation to explore and commercial exploitation of any results of scientific research, new concepts, ideas and inventions leading to increase the level of modernity and strengthen the company's competitive position and realization the technical ambition of entrepreneur<sup>123</sup>.

The authors pay attention to the financial aspect of innovation, and closely combine the innovative nature of the company with the approach of the individuals who are responsible for the management and protection of the environment.

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<sup>122</sup> A. H. Jasiński, *Przedsiębiorstwo innowacyjne na rynku*, KiW, Warszawa 1992, s. 25.

<sup>123</sup> W. Janasz, I. Leśkiewicz, *Identyfikacja i realizacja procesów innowacyjnych w przedsiębiorstwie*, Uniwersytet Szczeciński, Szczecin 1995, cyt. za: E. Stawasz, *Przedsiębiorstwo innowacyjne w: Innowacje i transfer technologii – Słownik pojęć*, K.B. Matusiak (red.), PARP, Warszawa 2005, s. 133.

## **2.2. Bitcoin as alternative currency on the financial market – its current status and future**

### ***Introduction***

The 21<sup>st</sup> century represents the era of computerization and rapid development of virtual organizations, along with the slow gloaming (especially in some economic sectors) of traditional organizations. As a result of social and economic life virtualization new expectations have been recognized and created non-traditional solutions, new methods of everyday life organization and innovative approaches to many issues, including simplifications in online financial settlements. The emergence of virtual means of payment was nothing less but a response to the needs of millions of users taking advantage of the world which has been functioning parallel to the real one. It also appeared that virtual means of payment do not represent just a technological innovation indispensable in the world of the internet, but also an alternative, or even a kind of counterbalance against the widely known physical equivalents – traditional national currency<sup>124</sup>.

The purpose of the study is to analyze and evaluate the presence of bitcoin on the financial market, used as alternative money in both virtual and real world, as well as an attempt forecasting certain possible scenarios of its development. The study presents the analysis of legislation in force, referring to bitcoin's functioning, whereas the specific nature of the discussed subject matter imposed the application of a descriptive method, which supported by the available subject literature, reports and studies conducted by international institutions covering the problems of bitcoin, constituted the primary source of information.

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<sup>124</sup> Milton Friedman, as early as 1999, anticipated the boom of alternative currencies, when the first of them were adopted, however, still of centralized nature [59].

### **1. The general characteristics of bitcoin and its functioning rules**

Bitcoin is a cryptocurrency set up in 2009 by a person using the alias Satoshi Nakamoto, however, the term bitcoin refers not only to cryptocurrencies, but also to open source software, indispensable for its functioning, as well as the peer-to-peer network formed by bitcoin.

Bitcoin is created using cryptography, which defines the methods for generating coins, as well as the mechanism specifying their turnover. Computers connected to the network calculate encrypted strings of mathematical terms necessary to meet the conditions for “creating” new money and to verify the associated transactions<sup>125</sup>. Generating bitcoins requires a special process to occur, referred to as “mining”, whereas bitcoin’s algorithm provides that ultimately 21 million coins will be functioning, the amount of which – according to some estimates – will be reached about 2140. As at 31<sup>st</sup> August 2015 about 14,5 million bitcoins have been mined<sup>126</sup>.

Taking a technical approach, bitcoin represents a protocol functioning in a distributed network, allowing for payments by means of special monetary units transferred between anonymous accounts of its users. Each person participating in the bitcoin network owns a portfolio containing any number of cryptographic keys. Public keys (i.e. bitcoin addresses) operate as the source and a target for all payments made. The respective private keys authorize payments for their owners only. The addresses do not provide any information about their owner and usually remain anonymous.

Bitcoin’s protocol constitutes a decentralized and commonly available network of connections, which controls its activities spontaneously and records its transactions automatically. Bitcoin is managed jointly by the so-called network nodes, i.e. computers of ordinary users connected by a free software substituting databases used by banks or other payment institutions, while a payee and a beneficiary remain the only participants of the transactions performed. Payment verification takes place the moment a given transaction is made (in real time), at minimal transaction costs, whereas the transactions themselves are of anonymous nature, without any reporting being made or any transactional limits imposed.

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<sup>125</sup> Nakamoto S., *Bitcoin: A Peer-to-Peer Electronic Cash System*, <http://bitcoin.org/bitcoin.pdf>. – p. 2-5.

<sup>126</sup> Blockchain.info, *Total bitcoins in circulation*, <https://blockchain.info/en/charts/total-bitcoins> (31.08.2015)



## **2. Bitcoin as currency on the financial market**

Each type of alternative money (alternative currency) represents an arbitrary means of payment used by a particular social group. Bitcoin is an example of such currency, which along with other currencies based on cryptography<sup>127</sup> creates a “family” of alternative currencies of virtual nature, also referred to as cryptocurrencies, e-currencies, cyber money or virtual currencies<sup>128</sup>. The concept of “virtual money” should, however, be distinguished from the term of “digital money” which is recorded in the form of files (e.g. Billon application), or “electronic money” recorded on a magnetic or chip card. Both digital and electronic money represent equivalent forms of traditional money (electronic equivalents of currency) and exchanging one form into the other does not involve any foreign exchange risk, which can occur in case of virtual money.

Bitcoin, as virtual money, does not have any physical representation and in its legal form (pursuant to Polish legislation) is not used as national or foreign means of payment<sup>129</sup>; it does not constitute either electronic or digital money<sup>130</sup>; its turnover is not recognized as payment service<sup>131</sup>, nor does it constitute any category of a financial instrument<sup>132</sup>. It is also true for international transactions where bitcoin is not covered by any regulated legal status. In accordance with the International Monetary Fund, bitcoin does not represent “currency” since it does not meet the provisions set forth in the

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<sup>127</sup> Bitcoin represents one of many virtual currencies, however, it the most widely recognized one and most often used in carrying out transactions. As at August 2015 there were recorded over 600 cryptographic currencies, the capitalization of which amounted to about USD 4 million. These currencies were traded at almost 2000 stock exchanges and bureaux de change.

<sup>128</sup> Kurek R., *Alternatywne waluty wirtualne*, w: *Annales Universitatis Mariae Curie-Skłodowska, Sectio H, VOL. XLVIII, 3, OECOLOGIA*, red. Węclawski J., Wydawnictwo UMCS, Lublin 2014. – p. 189-190.

<sup>129</sup> Ustawa z dnia 27 lipca 2002 r. Prawo dewizowe. Dz.U. 2002 nr 141 poz. 1178.

<sup>130</sup> Ustawa z dnia 12 września 2002 r. o elektronicznych instrumentach płatniczych. Dz. U. 2002 Nr 169 poz. 1385.

<sup>131</sup> Ustawa z dnia 19 sierpnia 2011 r. o usługach płatniczych. Dz.U. 2011 Nr 199 poz. 1175.

<sup>132</sup> Ustawa z dnia 29 lipca 2005 r. o obrocie instrumentami finansowymi. Dz. U. 2005 Nr 183 poz. 1538.

Article VIII of the IMF statute<sup>133</sup>. In terms of the European Union legislation it also does not fall into any category of the regulations in force and still requires the common EU approach to be developed, which is highly likely to occur along with the amendment of the Payment Services Directive – PSD<sup>134</sup>.

Taking a narrower view on bitcoin, i.e. from the perspective of carrying out its basic economic functions assigned to currency, allows referring to it as money, however, to a limited extent. It fully implements the function of an exchange or payment means, it is quite imperfect as a measure of value, whereas bitcoin's significant imperfection consists in its inability to be regarded as the means allowing both collecting and storing value<sup>135</sup>.

In a broad perspective money represents everything that is commonly accepted as payment for goods and services, as well as the means of debt payment<sup>136</sup>. Therefore, in an even broader sense, money does not remain just an abstract settlement unit used for exchange, but becomes a commodity with an assigned function of an exchange medium<sup>137</sup>, hence having considered bitcoin's functionality it can be defined as money. Similarly to all other goods it occurs in limited quantities, it is purchased and stored, it is characterized by its own price expressed in other goods, which is the function of total supply or resources and the total, reported demand. In a narrower sense bitcoin can be regarded as non-ideal money (since it does not perform all the functions assigned to money), whereas in a broader perspective it represents "money" identified with arbitrary "goods", commonly accepted as the means of payment for any commodity, service or debt repayment.

The specific nature of bitcoin, recognized as money, requires indicating and emphasizing several components to distinguish this means of payment

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<sup>133</sup> IMF, 2011, *Articles of Agreement of the International Monetary Fund*, DC, Washington.

<sup>134</sup> Directive of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market 2007/64/EC.

<sup>135</sup> Kurek R., *Bitcoin a ekonomiczne funkcje pieniądza*, w: *Finanse i rachunkowość na rzecz zrównoważonego rozwoju – odpowiedzialność, etyka, stabilność finansowa. Tom I – Finanse*, red. G. Borys, R. Kurek, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu nr 395, Wrocław 2015.

<sup>136</sup> Mishkin F.S., 2002, *Ekonomika pieniądza, bankowości i rynków finansowych*, PWN, Warszawa. – p. 85.

<sup>137</sup> Rothbard M.R., *Co rząd zrobił z naszym pieniądzem?*, Ludwig von Mises Institute, Warszawa 1980. – p. 36.

from traditional currencies. It is not authorized by any State or organization and no one decides about its exchange rate or guarantees its value level (it is independent from the decisions made by governments or financial elites). Bitcoin constitutes a cash instrument which is not influenced by inflation (with a predefined upper limit), whereas its exchange rate is not subject to market regulations and has its price. This price is of speculative nature and does not result from the value represented by bitcoin, since it does not constitute a debt nor has either gold or any other raw material backing. Bitcoin turnover is not subject to oversight or verification by any centralized entity (either controlling or managing), which supervises bitcoin's functioning or could actively react to various events on the market. No more bitcoin can be printed nor can its value be weakened.

Not everybody accepts bitcoin as the form of money, moreover, it happens to be banned in this role due to its perception as a threat to maintaining price or financial stability for the existing payment system. Bitcoin, however, is used by a large part of the Internet community, since its basic utility is related to the possibility of transferring money and making payments<sup>138</sup>, while bitcoin's technology and its functionality in the sphere of settlements can be taken advantage of in many areas, therefore the projections related to various schemes of its presence on the financial market in the future seem justified.

### ***3. Bitcoin on the financial market – potential development scenarios***

While attempting to make the projection of bitcoin's presence on the financial market and to forecast the potential scenarios of its development several variants and diverse presentations covering the aspects of its future functioning should be considered. Two orientations should, however, be adopted as the fundamental ones:

- **development scenarios referring to bitcoin's presence on the financial market as an alternative currency**, where the discussed issues can be perceived:

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<sup>138</sup>As at the end of 2010 as few as 0,2 million transactions involving bitcoin were carried out, whereas as at 31<sup>st</sup> August 2015 the relevant number was 81,8 million. Both, in virtual and real world, about 120 transactions daily were made till the end of August 2015.

- ***in the system of the authorities' approach to decentralized currencies*** (bitcoin and other virtual currencies),
- ***considering the scale of functioning parallel to traditional currencies;***
- **development scenarios related to applying and using the technology which constitutes the basis for bitcoin's functioning (cryptography).**

While analyzing potential **development scenarios referring to bitcoin's presence on the financial market as an alternative currency** the primary issue is bitcoin's perception by national authorities or possibly by transnational institutions (European Union, International Monetary Fund). Having considered ***the approach taken by the authorities to decentralized currencies*** the following variants can reflect the potential scenarios of bitcoin's presence on the financial market:

- the authorities do nothing and the principle is followed "*quae non sunt prohibita, permissa intelleguntur*" – this scenario provides for a "natural" development of cryptocurrency market, including bitcoin and a larger stabilization of this market occurs due to the reduced power of speculators and increased bitcoin's functionality in performing settlements (used as transfer money), whereas all problems resulting from bitcoin's implementation to the existing payment system are overcome<sup>139</sup>. This scenario is highly unlikely, since to a greater or lesser extent governments perceive the phenomenon of alternative currencies development, which rule the virtual world and would like to influence them not only in the form of control, transparency of transactions or reducing its usage for criminal practices, but also in terms of taxes, to make the State a part of the income earned on bitcoin related operations;

- ban on using bitcoin and declaring it illegal—a variant is possible following which countries will not allow to be deprived of the privilege to issue payment means and thus bitcoin will be banned once and for all. It can also be banned because cryptocurrencies will establish an alternative market and take away too much tax income from the States or because in the authorities'

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<sup>139</sup> Wilson D., Ursua J., *Is bitcoin a currency? No.*, Goldman Sachs Global Investment Research 2014. – p. 6.

opinion it will pose a treat to national security. The latter variant remains quite realistic, especially that in many countries bitcoin has already been banned: China, Iceland, Bangladesh, Russia – e.g. according to the Bank of Russia issuing “money substitutes” is banned in the Russian Federation<sup>140</sup>, whereas according to the Russian Prosecution General using bitcoin remains a “criminal activity”. One of bitcoins more important qualities is the anonymity of its transactions, which attracts many users trying to conceal information about their online purchases. Paradoxically this characteristics can become yet another important argument for the advocates of bitcoin’s banning, since they will indicate its probable usage in illegal financing of goods and services exchange, trading prohibited goods (drugs, weapons), or ransom payments for hostages and for such reasons the ban on bitcoin can become a realistic scenario in many countries<sup>141</sup>;

- covering bitcoin with regulations and its formal functioning parallel to national currencies—in this variant the regulators of money and financial payments shall not refer to bitcoin as a threat, but rather as a supplement to modern means of payment and will initiate implementing adequate regulations as well as develop strategies regarding its advancement on the financial market<sup>142</sup> in line with the interests of all parties involved. The discussed variant is not free from certain obstacles in bitcoin’s development related to difficulties in maintaining its financial competitiveness in view of the growing number of regulations, higher operating costs and the increasingly stronger market competition, also in terms of other cryptocurrencies<sup>143</sup>. This scenario of bitcoin’s presence on the financial market seems most likely, whereas the implementation of regulations shall hinder bitcoin’s misuse to avoid paying taxes, money laundering or illegal trade. The problem of

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<sup>140</sup> Stasiuk T., *Bank Rosji ostrzega przed bitcoinem*, Puls Biznesu, <http://www.pb.pl/3535552,44852,bank-rosji-ostrzega-przed-bitcoinem> (27.01.2014).

<sup>141</sup> Obviously, even legal regulations for bitcoin trading or the total ban on its presence on the financial market is not capable of “protecting” bitcoin from using it by criminals for money laundering, attempting financial embezzlements, handing in bribes or trading in prohibited goods.

<sup>142</sup> Leal R., *Is Bitcoin the future of payments?*, Goldman Sachs Global Investment Research 2014. – p. 18.

<sup>143</sup> Wilson D., Ursua J., *Is bitcoin a currency? No.*, Goldman Sachs Global Investment Research 2014. – p. 6.

financial transactions will also disappear, which are totally out of control and thus the basic rights cannot be guaranteed to their participants (trade regulations) or taxes collected. Germany was one of the first countries where bitcoin was officially recognized as the means of payment in private trade, which took place already in 2013<sup>144</sup>, as a result of which the market offering bitcoin transactions was covered by taxes.

Taking into account ***the scale of bitcoin's functioning on the financial market as parallel to traditional currencies*** allows for considering its development scenarios based on the recognized laws of economics referring to the circulation of various types of cash. The following scenarios can be taken into account:

- bitcoin remains a relatively insignificant "innovation" or "attraction" with a small share in turnover against traditional currencies, which are the dominating ones (current situation). It can also be assumed that bitcoin is to become a more stable means of payment due to its increased functionality in making real settlements, however, it will remain a major type of means used in carrying out virtual transactions;

- bitcoin will become "equal" to traditional currencies, but in such situation it will also be referred to as the "worse" type of money, since as provided by Gresham's law "bad money will be more widely circulated than the good one"<sup>145</sup>. Bitcoin's "worse" position results from the fact that traditional currencies are subject to hoarding and bitcoin is not characterized by the quality of "collecting treasure" (but can dominate as the transaction type of money);

- bitcoin will turn out as more functional as traditional currencies – in such situation it will theoretically represent the "better" currency and could be superseded by the "worse" traditional currencies (which is quite a deceitful theory), however, such scenario is impossible to occur since when compared to traditional money bitcoin is not capable of carrying out the hoarding function (it works only as an exchange and payment means and also as the measure of value).

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<sup>144</sup> Gotthold K., Eckert D., *Deutschland erkennt Bitcoins als privates Geld an*, "Die Welt" 16.08.2013.

<sup>145</sup> Balch T.W., *The Law of Oresme, Copernicus and Gresham*, "Proceedings of the American Philosophical Society" 1908 No. 188 (Vol. 47). – p. 25-28.

The discussion about potential **development scenarios related to adopting the technology on which bitcoin's functioning is based** shall refer not only to virtual money, but also to other domains<sup>146</sup>. Adopting bitcoin's technology can cover the following areas:

- online register of resources – common, transparent and also impossible to forge, which could be used in the domains where property rights and their registration are crucial (static approach). Such register could “monitor” the rights to cash, securities or tangible and intangible assets, whereas the technology itself can become the background for future, innovative solutions<sup>147</sup>;

- decentralized network aimed at transferring value (ownership rights) between its participants, which could take place directly between the parties involved (dynamic approach). Such network (e.g. payment network, stock exchange) could guarantee confidence, credibility and despite its centralized nature it could facilitate asset exchange transactions between network participants without the third party involved<sup>148</sup> to settle these transactions (such as e.g. depositories of securities or clearing agencies). The technology behind bitcoin is able to guarantee and carry out settlements between parties (e.g. a derivative acquisition) in an automatic and cost-effective manner<sup>149</sup>;

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<sup>146</sup> On the 18<sup>th</sup> October 2013, during the session of Internal Security Committee and Government Affairs of the US Senate, Mythili Raman the representative of US Department of Justice admitted that “virtual currencies offer legal financial services and have the potential to increase the efficiency of global trade [103] and according to the opinion of Ben Bernanke, Fed's chairman at that time, in his letter addressed to the US Congress (November 2013) “financial innovations, such as bitcoin, can turn out promising in a long-run, especially if they promote a faster, safer and more efficient payment system” [29].

<sup>147</sup> Perka P., *Wszystko, co musisz wiedzieć o bitcoinie*, Miesięcznik Kapitałowy 23.02.2014.

<sup>148</sup> Bitcoin's technology represents yet another example of the revolution in business models in modern economics, which aim at the elimination of unnecessary intermediaries and substitute them by more effective algorithms: Google algorithm eliminates the need to use advertising agencies online, Uber in the transport sector, Airbnb in tourism [175].

<sup>149</sup> Smoleń P., *6 kanałów, którymi bitcoin wpłynie na branżę finansową*, <http://tech.pb.pl/4040731,83662,6-kanalow-ktorymi-bitcoin-wplynie-na-branze-finansowa> (25.08.2015).

- network used for conducting settlements in a centralized manner – even though (as of today) it is hard to envisage taking advantage of all the possibilities offered by bitcoin’s technology in order to carry out all sorts of settlements in a decentralized manner, its centralized application on the financial market seems more likely. The initial attempts in this area have already been performed, since having perceived the innovative nature of cryptocurrencies and their power, some central banks consider the following options<sup>150</sup>:

- *to adopt their own cryptocurrency* (national cryptographic currency), which “...could be used by non-financial institutions and also by ordinary citizens, just as banknotes are today” (Bank of England), or to establish own, national cryptocurrency, which could adopt bitcoin’s technology, however, as reference point use the traditional national currency (this proposal is being considered by the US Federal Reserve Bank and the cryptocurrency is to be called “fedcoin”),

- *to adopt bitcoin’s technology in interbank settlements* – which could be the consequence of the fact that “... the existing private e-currencies have serious economic deficiencies, which make them unstable, however, the possibility of adopting similar technologies by central banks seems quite promising” (Bank of England).

### **Conclusion**

Just as the burden of social and economic life keeps gradually moving towards the network, the consequence of general virtual money acceptance can, in the future, be manifested by its stronger coupling with the real economy. However, there is no clear answer to a question about the depth of mutual relationships between the real and virtual (“network”) world and to what extent their boundaries are going to be blurred. The emergence of bitcoin and similar virtual currencies has already been well identified in the area where these two worlds overlap. Both bitcoin and other cryptocurrencies have become the alternative for the payment system based on currencies endorsed by central banks and the authorities’ monopoly over the means of

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<sup>150</sup> Puls Biznesu, *Brytyjski bank centralny myśli o własnym bitcoinie*, <http://www.pb.pl/4019402,52696,brytyjski-bank-centralny-mysli-o-wlasnym-bitcoinie> (13.03.2015).



payment has been put to a halt. In spite of the attempts to develop adequate regulations covering bitcoin (or even its banning) it will always represent an independent payment instrument allowing for money transfer without the involvement of any financial institutions. The aspect of financial intermediaries' elimination remains the component of a broader trend in modern economics, where "unnecessary" intermediaries are substituted by more effective solutions and the possibility of anonymous transactions will attract many users who will try to conceal information about what and where they buy online.

The overall assessment of bitcoin's functioning on the financial market is not easy from the perspective of less than five years of its functioning, however, it is tempting to make several observations from the current perspective. Bitcoin is definitely a revolutionary and innovative idea, however, also controversial and not entirely acceptable. It is not free from the "childhood diseases" and poses certain threats for its users, since as an untypical commodity on the currency market it does not offer full functionality typical for traditional currencies. Due to the fact that money is based on confidence and an authority (the State) is necessary for its credibility it also does not seem possible for bitcoin to earn good enough confidence to become a new, global currency, since the authority offered by the Internet community may turn out insufficient.

Time will show whether the "idea" of alternative money has proved to be more durable against the traditional, national money<sup>151</sup>. The functionality of gold standard has been confirmed by the centuries of its usage, whereas the unreliability of paper currencies usually becomes visible after several decades. Even though it is possible to envisage the collapse of Euro zone in a long-term perspective and hence its currency, the decline of dollar or the collapse of traditional currencies, both cryptography and peer-to-peer architecture, as fundamental for bitcoin's functioning, remain indestructible<sup>152</sup>. On the other hand, bitcoin itself as alternative money on the financial market

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<sup>151</sup> "Average" life of paper currencies is about 40 years and only 9 of the presently used currencies are older than 120 years and in this period of time lost at least 90% of their initial purchasing power [97].

<sup>152</sup> Just one computer with a working application is enough to restore bitcoin's network along with the amount of bitcoins and the history of all transactions made.

can disappear as quickly and rapidly as it has appeared on this market. Therefore it is hard to determine clearly whether bitcoin will survive the test of time and along with other cryptographic currencies will become the currency of the past. The technology of cryptocurrencies still represents a very early development stage and the ones set up today can turn out to be just a small step in the process of reaching a larger, more advanced system and may be quickly substituted by some other “unique” ideas. The idea of decentralized money seems, however, to be too extensive to just disappear and therefore its development should be expected in the years to come.

Bitcoin has exceeded the limits of traditional approach to money as well as its position on the financial market. The absence of possibilities to use bitcoin as the form of investment (bitcoin does not work in this role since it does not perform the hoarding function) and using it (the technology it is based on) primarily for settlements results in the fact that it is not capable of replacing traditional money. It can, however, offer its alternative, hence the formal, parallel functioning of fiduciary and virtual currencies is no longer an abstract vision, but just one of the possible and realistic development scenarios.

### **III. BUSINESS ACTIVITIES IN THE CONDITIONS OF TAX HARMONIZATION**

#### **3.1. The concept of taking the company through a leveraged buyout – legal and economic aspects**

##### ***Introduction***

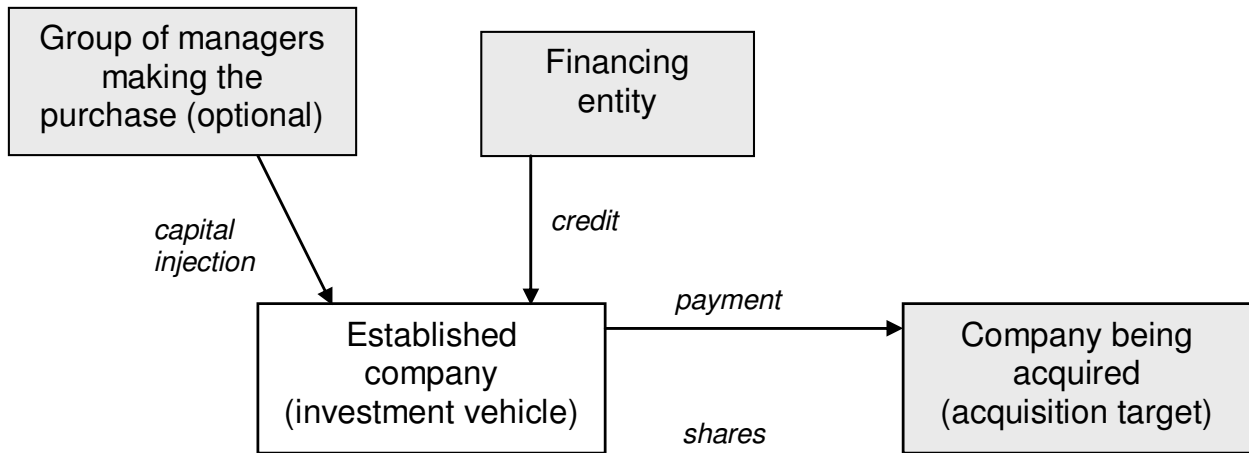
The development of world economies in recent years has been influenced by the globalization, which tends to be terminologically abused in both theory and practice. Yet, it is hard to disagree with its huge role, being aware of its multifaceted character. Free movement of capital, its concentration and the ongoing process of getting a faster communication, both electronic and physical, year by year are having more and more effect on shaping the world's order. The complexity of this phenomenon may be exemplified by the correlation between the electricity demand, economic growth and environmental protection, which is in turn associated with the construction of new power plants. One of the characteristic features of the modern world, determined by the processes of globalization, is the phenomenon of acquisition of business organizations. Means of the

investment is certainly the capital. Capital (in particular the cost and ease of acquisition) usually affects the design of a takeover model. The article focuses on the phenomenon which has been increasing over the last few years, namely on the share of specific capital transactions that are financed by the debt of the acquired entity. The specificity of these acquisitions is that they are characterized by a relatively high rate of return as well as they result in a deep restructuring of the acquired business, which determines their effectiveness.

### **1. Characteristics and mechanism of leveraged buyouts**

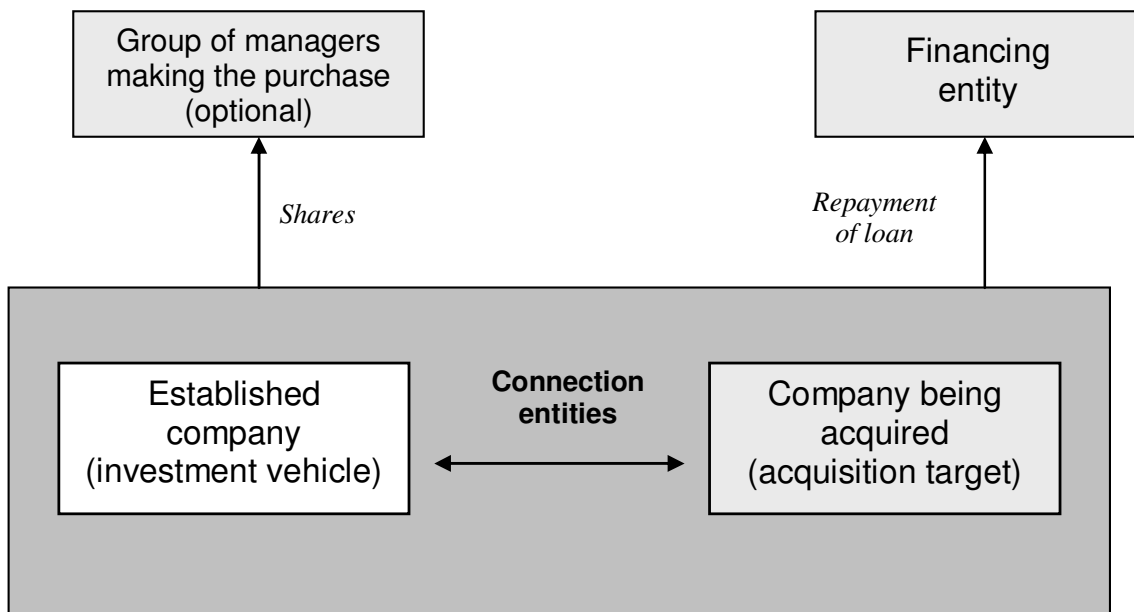
As has been mentioned in the introduction, one of the types of the company acquisitions are the buy-out transactions – very often leveraged. This technique derives from the United States. In Europe it is particularly popular in the UK. Among the buy-out techniques, different types of transactions are to be distinguished. Their definitions are often confused with each other, especially in the countries where the phenomenon is not very common, for instance in Poland. The buy-outs transactions are those that result in acquisition of a controlled stake in the company by acquiring shares from the owner. The participation of the company executives or its employees is possible. The participation of institutional entity (or several entities) is also possible. Depending on the role of foreign capital and the type of parties (participants) of the transaction, each of its sub-types is going to be highlighted and described in detail later in this article. The buyout mechanism is based on several stages. In the first stage a group of managers (in the case of the classical process of MBO) creates a special investment vehicle, whose task will be to acquire the company to be sold. The purchase is financed by bank loans acquired by the established company and the capital founders. Figure 1 presents the first phase of redemption.

The next stage of taking control of the company is to combine the established company (the investment vehicle) and the acquired company (the project). As a result of the merger, the shares of the combined entity (due to the increase in share capital / capital) are transferred to the shareholder / shareholder of the company (an investment vehicle), as shown in Figure 2.



**Fig. 1. The first stage of a management buyout**

*Source: Own work.*



**Fig. 2. The second phase of a management buyout transaction**

*Source: Own work.*

One should note that after the combination of entities the new entity takes over the loan obligation investment vehicle (de facto not having the possibility of its repayment). In addition, the combined company (the original company) due to its core business has the ability to generate cash to service the debt. The economic efficiency in the next stages, therefore, depends on factors such as the attractiveness of the target company and the possibility of

rapid growth of its value. Total purchase ends when the debt is repayed. In practice there are transactions that last a few years. Merger of the entities described above is carried out in accordance with the regime of the Commercial Code, which distinguishes between the two types of mergers. First one is called a fusion per Incorporation (Article 492 § 1 point 1 of the Commercial Companies Code) and the merger per Union (Article 492 § 1 item 2 of the Commercial Companies Code). Merger by acquisition is the incorporation of a company's assets by another company. As a result, the incorporating company retains business continuity, and the incorporated one ceases to exist. In this case, all the rules and acts of corporate of the incorporated company still apply. In the event of a merger by the merger, a combined company will cease to exist, and in its place a new company is created, that will take over their property on the basis of general succession. This is based on the Article 494 of the Commercial Companies Code. In particular, it concerns the permits and licenses that were obtained by the entities participating in the merger. Moreover, the passage of rights disclosed in the registers and land registers ex lege, subrogation disclosure is at the request of the newly formed entity. Transfer of rights in the form of permits and licenses that granted to a company, which is a financial institution, is limited in that the entity granting authority may object within one month from the date of announcement of the merger. It should be noted that in case of the merger, the company is terminated by the liquidation. A new company, regardless of the type of connection, becomes a party to all legal relationships that were previously existing party company.

## ***2. Types and models of leveraged buyouts***

There are buyouts different types of transactions to be distinguished. Among the most acknowledged there are: the LBO transactions – the so-called leveraged buyouts (called leveraged buy-out), the MBO transactions – the above mentioned MBO (called management buy-out), the LMBO operations – leveraged management buyouts (called leveraged management buy-out), EBO (employee buyout) – a transaction involving the redemption of a majority of stake by the employees of the company, MBI (management buy-in) – the purchase of a majority stake of the company by people not connected with the company so far, who are going to manage the purchased

company; the MEBO (management & employee buyout) – the combination of MBO and EBO transactions and, finally, the BIMBO (buy-in management buyout) – the combination of the MBOs and MBI transactions.

Additionally, in the LMBO transaction there may be more other entities apart from managers. In the theory and practice the two models of the LMBO transaction can be encountered. They are presented in Table 1.

Table 1

**Characteristics of the Anglo-Saxon model and the French model  
in the leveraged management buy-out transaction**

<b>Models of LMBO (leveraged management buy-out)</b>	
<b>Anglo-Saxon model</b>	<b>French model</b>
<p>The action consists of the following steps.</p> <p>1. The first stage focuses on the amassing of capital by the management company, which is the subject of acquisition and making contacts with potential institutional investors, such as commercial companies, investment funds, venture capital companies, etc. The consequence of determining the stakeholder groups is the establishment of a new company – a financial holding.</p> <p>2. The second stage focuses on meeting the appropriate level of capital for future transactions (bank loans, issuance of shares or bonds of the created financial holding). A characteristic feature is that the value of the loans is usually a multiple of the equity holding.</p> <p>3. In the last stage the merger of the acquired company financial holding company takes place. As a result of the merger a new company is formed. It has taken over free enterprise funds. They are usually used to repay the part of the liabilities incurred for the acquisition. Over the following years, the company repays the loans with interest.</p>	<p>The model is similar to the Anglo-Saxon one. The difference is that the company – a holding company, is formed jointly by employees, managers and selected institutional investors. Characteristic are the strict limitations on rules concerning its creation Only managers and employees who have worked at least one year are allowed to create it; they should have at least 51% of the vote (up to 49% may belong to institutional investors), and none of them can obtain a majority stake of 51%. After having created a holding company, the managers with staff and institutional investors borrow money to finance their transaction. After having collected the adequate capital, a merger of the holding and the “acquired” company may take place. In practice it happens very rarely. The most common procedure is the acquisition of the company by the newly created holding company. This occurs in 80% of cases.</p>

Source: Szczepankowski P., *Fuzje i przejęcia*, PWN, Warszawa, 2000, s. 99-107 oraz Zając C., *Spoleczne i organizacyjne problemy fuzji i przejęć przedsiębiorstw*, Wydawnictwo AE we Wrocławiu, Wrocław, 2005, s. 53.

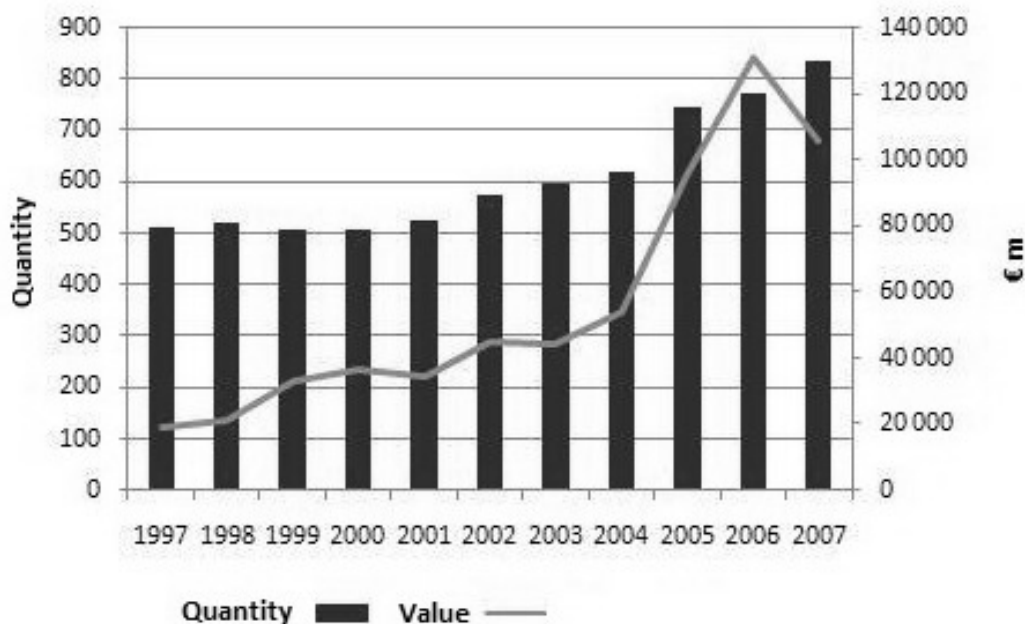
Attention should be drawn to the fact that the leveraged management buyouts are based on the two key elements. They are: high managerial skills that enable the development of the market and increasing its value after the merger or acquisition, as well as functioning of the leverage arising from borrowing. Any actions associated with this type of acquisition are certainly preceded by a detailed financial analysis. For external stakeholders (investors, lenders and banks) a management team is a very important element. It should also be the guarantor of its effective organizational and financial restructuring due to having the most information about the company activities. The high financial leverage in this type of transaction means very high debt to equity ratio – debt reaches up to 90% of the sale of the company. It should be borne in mind that such transactions are successful only in case of the increase in the value of the entity in the next few years. Since the risk of transactions is relatively high, investors expect high rates of return of up to as much as 40% per year. There are many examples of successful completion of such transactions. The American company Gibbon Greeting Cards is a good example. It was acquired by the staff for the amount of \$ 81 million. After one year of this operation the company sold 17% of shares for the amount of \$ 45 million. After this period, the enterprise value was three times greater. Attention should be paid also to the fact that in addition to the competence of the management of the acquiring entity, the type and condition of the company, which is going to be the subject of takeover, is relevant in assessment of the project success. One type of risk of the project will accompany the innovative companies, and the other one in case of operating in less developed markets. The financial structure of the company before the acquisition and its financial ratios are also of particular importance. There are companies being acquired as a result of the LMBO transaction, which possess a financial liquidity surplus and the share in the assets of a several dozen percent. Of course, these subjects are perfect targets of the LMBO transactions due to the fact that one can reduce the debt with the cash available immediately after the transfer.

Referring to the LBO transaction in Polish conditions it should be noted that the market for leveraged buyouts is in the infancy of development. The biggest buyout LBO type in Poland was the sale of the Aster City Cable Cable by the British private equity firm Hicks, Muse, Tate and Furst (under its present name Lion Capital) to another private equity firm – Mid Europa



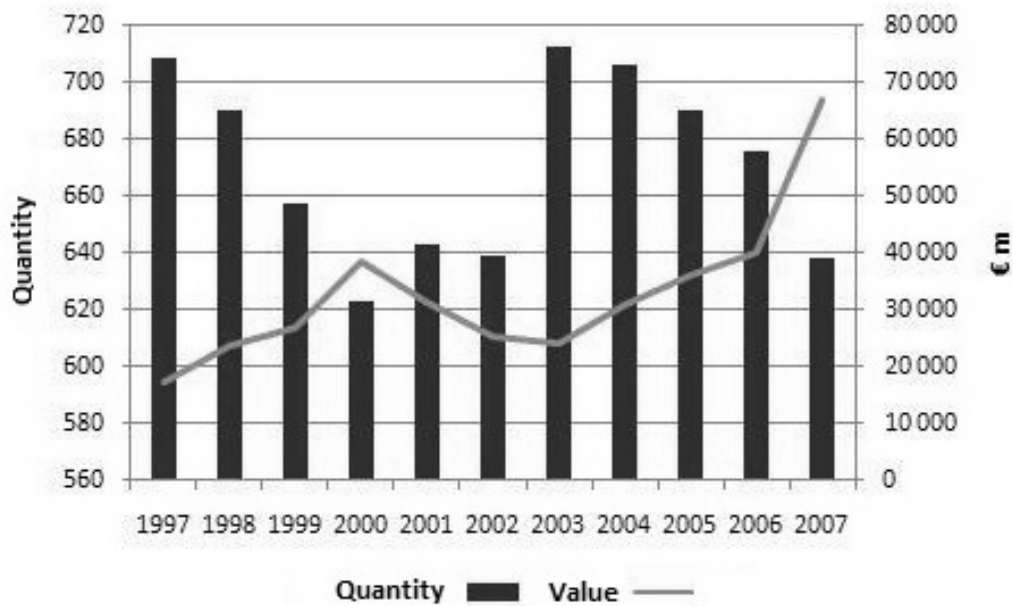
Partners for € 1.6 billion zł. The value of this transaction was twofold higher than the overall market in the previous year.

Apart from the degree of leverage, as has been already stated, the MBO transactions are particularly attractive in the UK. In recent years their share in all the mergers and acquisitions (M & A) remains high, representing about 60% in terms of both volume and value. In other Western European countries the interest in the MBO transactions is highly varied. It is due to the different levels of financial markets development, diversified regulations and different degrees of intensity of privatization processes. The following charts no. 3 and 4 reveal the number and value of the buy-ins and the buy-outs transactions over the years 1997 – 2007 in the UK and the Continental Europe.



**Fig. 3. The number and value of transactions Buy-In/Buy-Out in the UK in 1997-2007**

Source: CMBOR/Barclays Private Equity/Deloitte & Touche



**Fig. 4. The number and value of transactions in Continental Europe Buy-In/Buy-Out in 1997-2007**

Source: CMBOR/Barclays Private Equity/Deloitte & Touche

Analyzing the process of the MBO buyout it can be seen that the intensity of this phenomenon also depends on the assessment of the attractiveness of alternative investments. For instance, the decline in interest in such MBO acquisitions in the United Kingdom a few years ago strongly attracted investors' interest in the new technologies sector entities, which gave hope to the very high rates of return on capital employed. The decline in the number of mergers and acquisitions (classical M & A transactions), in turn, may cause an increase in the number of the MBO transactions owing to the decreasing valuations of companies in this period. A very important factor in the development process are the MBO acquisitions tax regulations. An example of a country in which there has been a significant wave of growth in this type of transactions, as a result of the liberalization of the tax burden in the case of capital income from operations, was Ireland. Also in Germany in recent years there has been changes in regulations and taxes, which increased the interest in the MBO transactions to such extent that Germany in 2003 occupied the second place in Europe in terms of executed buyout firms transactions.

Trying to relate the level of the European buyout market situation to the situation in Poland it should be noted that Poland is a country where such transactions are a highly controversial phenomenon. No detailed analyzes of the transactions are carried out. It has been estimated that each year in Poland several dozen buy-out transactions are conducted. One should note that many of them are carried out without publicity, for example as a result of the withdrawal of the Western companies from the market, which have not reached the planned level of revenue in Poland. In this case, the Western companies are getting rid of their subsidiaries located in Poland for its managers. A measure of the low growth of this market in Poland may be comparing the value of transactions in the UK to the level of revenues from privatization in Poland. In 2005, the value of buyout transactions in the UK amounted to about 131 billion, comparing to the revenues from privatization in Poland reaching 5 billion and then, in 2012- less than 10 billion, which represents respectively 3% and 6% of the transactions carried out in England. Polish companies repurchases, in particular leveraged transactions using sophisticated financial engineering are usually seen as a desire to get rich quickly by unethical investors. They are not considered as a tool of improving the efficiency of the company. There are many examples of transactions in Poland, which have not been carried out due to the phenomenon of “playing safe” by banks which co-finance of the buy-out transaction. An example of a project that has failed is the purchase of a controlled stake of the FM Famur SA (a company which operates in the production, sale and repair of a combined cutter-loader market) from the National Investment Fund (NIF). The Famur Investor, established for this purpose the managerial-employee company, signed a conditional agreement to sell the NFI shares worth about 38 million. Funds for this purpose were to come from a bank loan, which was to be secured by the purchased shares. The withdrawal of the banks from the transaction resulted in failure to meet the terms of a preliminary agreement with the NFI. The same cause was the reason of failure to acquire of a package the 33% shares of the Bumar Fablok SA by the Fablok – the joint-stock employee company from one of the National Investment Funds for 6 million PLN<sup>153</sup>.

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<sup>153</sup> Więclawski R., Aranzacja finansowania dla wykupów menedżerskich, *Nasz rynek kapitałowy*, nr 2/2004, s. 64.

### **3. The organizational effects and limitations of the buy-out transactions**

As has been mentioned earlier, the effective buyout of the company takes place in the presence of specific features, both on the side of the acquired company – which is a takeover target, and on the side of the environment (investor and provider of capital). These factors may include the following elements:

1. Trust in the financing entity's transaction, resulting in a lower cost of capital. In practice, the access to capital is determined by various factors, such as willingness to enter new foreign markets and, therefore, financing the foreign investment by a bank or investment fund from the same country as the acquirer. An example of such a transaction was the acquisition of JELFA SA, a joint stock company, by the Lithuanian JELFA Polish legal entity SANITAS Ltd. with a share capital of EUR 50 thousand zł, related party capital of AB SANITAS LITHUANIA – the SANITAS Sp. z o.o. (Ltd.) served as an investment vehicle.

2. An inefficiently managed company that is a takeover target, which is susceptible to the restructuring process. In practice this may mean, for example, a possibility of carrying out the restructuring of fixed costs as a result of voluntary redundancy program, a combination of functions and consolidation of entities if the purpose of the acquisition is a holding company. A favorable factor, according to the new investor, is also an inefficient management of fixed assets, which after having been inventoried can be realized. Another example is the solution of financial reserves as a result of not fulfillment of the conditions that would justify their formation and which were not reflected in the valuation of the company.

3. A highly competent management team, which consists of actors of change. The knowledge of the financial management and process re-engineering is particularly important.

Certainly, the above factors are only synthetic elements determining obtaining the projected profitability of the acquisition. Next to them, a number of macro and micro-economic factors may be enumerated, such as the current situation on the capital markets or even the real estate market situation, intended for possible release after the acquisition of unnecessary assets. Attention should be paid to the restructuring of the acquired company, which is a crucial stage in the acquisition process.

Trying to identify the transaction limit buy-out, attention should be drawn to the frequent difficulty of funding opportunities. Especially in recent years, a highly cautious approach of banking entities is to be observed. In general, carrying out a leveraged buyouts transaction is not easy, especially in the Polish conditions. One of the most significant barriers are provisions of article 345 of the Commercial Companies Code, which prohibit a public limited company from lending or security, as well as prohibit the financing of the purchase or acquisition of shares issued by it, this provision does not apply to limited liability companies. Hence, in leveraged transactions a company of such organizational and legal form is used. The provision of the article 345 of the Code of Commercial Companies tend to be mentioned as a potential barrier for companies – investment vehicles (SPV). If we establish a company with a minimum capital only with the purpose of acquiring, the only assets of the “investment vehicle” company are the shares of the acquired company. investment vehicle. On the liabilities side, we have all of the obligations in relation to the entities that are the sources of funding. Relating to the next step, which is a combination of entities, again the issue of article 345 entries in the Commercial Companies Code (the acquired company is usually a public company) based on the article 494 of the Commercial Companies Code. It indicates that the acquiring company, in our case the SPV company, gains all the rights and obligations of the acquired company. One of the procedural restrictions of the efficiency of the process is also the article 509 of the Commercial Companies Code, which protects the corporate rights of minority shareholders in the form of merger resolutions without a remedy. This, combined with a relatively long time of waiting for a call recording by registration courts in Poland, may be a factor inhibiting the process. The latter elements, however, are specific to each reorganization process in which there are changes in the share capital requiring registration in the National Court.

### ***Conclusion***

To conclude, the leveraged buyouts transactions are certainly at the higher level of complexity compared to the traditional processes of mergers and acquisitions. They are very often accompanied by a desire to quickly achieve a certain return on invested capital in terms of value incomparable to any investment alternative with no desire to engage in long-term development

of the acquired company. The author believes this may lead (and it often does) to “spiral squeezing” of companies by financial investors. In the successive stages there are high, but smaller and smaller levels of return on invested capital generated for them. It is associated with limited possibilities of restructuring the company. The popularity of this type of transactions will certainly increase due to the growing pressure to increase return on investment and profitability of the business in every sector of the economy, which seems to be an inseparable part of the contemporary world and the increasing role of capital markets.

## **3.2. Creating a capital markets union within the European Union**

### ***Introduction***

After building the essential foundations of a banking union in the euro zone, the next step towards deeper integration of the financial markets in Europe will be the creation of the Capital Markets Union (CMU). In contrast to the previous project, it should cover all 28 countries of the European Union. According to the European Commission's plans, the foundations of a well-regulated and integrated capital markets union should be developed by 2019. This is a flagship project of the new European Commission, whose term began in late 2014. The main objective of the CMU is to increase the role of capital markets in financing enterprises by broadening the scope of capital market instruments available to them, as well as identifying and removing barriers to the free movement of capital within the European Union (EU). The initiators of the creation of a capital markets union: Jean-Claude Juncker – President of the European Commission, and Jonathan Hill – EU Commissioner for Financial Stability, Financial Services and Capital Markets Union – believe that this project will restore growth and will lead to increased employment in the EU countries, which is now a priority of the European Commission and the whole EU.

To boost economic growth, the European Union needs investments in companies and broadly defined infrastructure. An investment package of EUR 315 billion should facilitate EU investment. According to estimates, the implementation of the package in the coming years will contribute to the creation of 1.3 million new jobs and increase GDP by EUR 330-410 billion<sup>154</sup>. In contrast, according to the authors of the concept of the CMU, increasing

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<sup>154</sup> *EU-Investitions offensive zur Förderung von Wachstum und Beschäftigung*, [http://ec.europa.eu/deutschland/press/pr\\_releases/12897\\_de.htm](http://ec.europa.eu/deutschland/press/pr_releases/12897_de.htm), 26.11.2014.

investment in the EU in the long term requires building a single capital market covering all member states.

What prompted the European Commission to build a capital markets union? What are the benefits of deepening the integration of EU capital markets? What steps to establish a capital markets union should be taken in the first place? In this study, the authors attempt to answer these and other questions related to the integration of the capital market within the EU.

### ***1. Reasons to initiate the construction of a capital markets union in the EU***

The idea of creating a capital markets union covering all the countries of the EU was put forward by new European Commission President, Jean-Claude Juncker, in his speech before the European Parliament on July 15, 2014. He is convinced that the union will lead to the strengthening of capital markets in Europe and will increase the scope of products offered on them, both for investors and companies seeking to raise capital for investments. Juncker also believes that the union will attract more foreign investors to the EU and will help to improve the stability of the financial system.

It is assumed that the integration of capital markets will reduce dependence of enterprise development on bank loan financing. To a greater extent than today, firms will be able to use alternative instruments to loans, such as the issuance of shares or bonds, peer-to-peer loans or crowdfunding. However, firms, including small and medium-sized enterprises (SMEs), will continue to raise funds from capital markets. Although the role of business loans will be reduced, banks will continue to play a key role as lenders for many companies and intermediaries on the capital markets.

On February 18, 2015, the European Commission published a “Green Paper” containing assumptions about deepening the integration of capital markets within the EU<sup>155</sup>. Thus a three-month consultation on this project began. All interested persons and institutions: the European Parliament, the Council, the national parliaments, financial sector entities could make comments on proposals which had been submitted. Following this

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<sup>155</sup> *Green Paper, Building a Capital Markets Union*, European Commission, Brussels, 18.02.2015.



consultation, the European Commission, even in 2015, intends to develop an action plan and timetable for implementation of the main elements of the capital markets union.

An important reason to take action to establish a capital markets union within the EU was tightening of lending conditions for businesses by banks in response to the global financial and economic crisis (2008-2009). A further reduction in the volume of bank loans was a result of tightening of regulations on capital requirements for banks by the Third Basel Accord and the Capital Requirements Directive (CRD) IV and the Capital Requirements Regulation (CRR). Banks, therefore, faced with the need to increase equity or reduce their assets and risk-weighted off-balance sheet liabilities, mainly the volume of loans. As it is difficult to increase equity quickly and it is expensive, banks usually choose the second option, which results in limiting access to external sources of financing for businesses<sup>156</sup>.

In 2008-2013, new bank loans to enterprises in the euro area decreased by 42%, while the value of total business loans fell by 10% during this period. According to DB Research, in 2013, in 17 EU countries, a decline in loans in relation to their value in the previous year was observed. Loans decreased the most in Slovenia (24.0%), Spain (14.2%), Malta (9.4%), Italy (6.1%) and Portugal (6.1%). In 2014, the value of corporate loans decreased in 15 countries, most in Ireland (21.8%), Slovenia (20.8%), Portugal (13.2%), Bulgaria (11.7 %), Spain (10.6%) and Latvia (9.6%)<sup>157</sup>. Besides tightening of regulations and cautious approach of banks to risks, factors independent of banks, such as the economic recession and the lack of attractive investment projects in enterprises, should be indicated, when we analyse the reasons for the decrease in bank loans in the euro area in recent years.

Enterprises are not able to compensate the decrease in financing from banks by funds obtained from the capital market. This is mainly because the capital markets in the EU, compared with the United States, Japan or Switzerland, are still poorly developed. For example, the total stock market capitalization in the EU countries in late 2013 reached EUR 8.4 billion,

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<sup>156</sup> J. Ramotowski, *Unia szuka kapitału poza bankami*, [http://www.obserwator finansowy.pl](http://www.obserwatorfinansowy.pl), 10.12.2014.

<sup>157</sup> *Interaktive Landkarte Europäischer Bankenmärkte*, Deutsche Bank, Frankfurt am Main 2015, <http://www.dbresearch.de>, 15.04.2015.

representing about 65% of their GDP, while the corresponding rate for the US was almost twice as high.

At the same time, there are big differences in the development of the capital markets in individual EU countries. For example, in 2013, domestic stock market capitalisation in the UK was 121% of GDP, while in Latvia, Cyprus and Lithuania it did not exceed 10% of GDP<sup>158</sup>.

With the exception of the UK, capital markets in the European Union are less friendly to small and medium-sized businesses which have the greatest growth potential and should become the engine of growth for the European economy. However, these are mainly domestic entities which invest on capital markets, and almost domestic enterprises raise capital on these markets. This makes it difficult to entities who operate on capital markets to obtain the critical mass needed to compete effectively with major actors in the non-European capital markets.

As a result of underdevelopment of capital markets, European companies more than, for example, American enterprises, depend on bank financing. According to estimates by the European Commission, in early 2015, 75% of external corporate financing in the EU came from banks, and only 25% from capital and money markets. Meanwhile, the US corporate financing structure is exactly the opposite – 25% of funds come from banks, and 75% from financial markets. Strong dependence of European companies on loans implies that in the case of tighter credit policy, they need to reduce planned investments.

The creation of a capital markets union within the EU aims to change the financing structure of enterprises. However, in the coming years, it is unrealistic to achieve such a high share of the funding from the capital and money markets as it is in the US. In the future, financing structure of enterprises in the EU can be as follows: bank loans account for 60% of external financing, and 40% of the funds come from the capital and money markets<sup>159</sup>.

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<sup>158</sup> *Green Paper*, op. cit.

<sup>159</sup> *Unia rynków kapitałowych UE*, <http://www.księgowość.infor.pl>, 15.04.2015.

## **2. Objectives of the capital markets union and rules for its functioning**

Although the free movement of capital is one of the four economic freedoms which provide the basis for European economic integration and, and although there has been some success in the integration of EU capital markets, these markets are still very fragmented and organized at national level. During the global financial crisis, due to the withdrawal of some investors and borrowers from foreign markets, the degree of integration of capital markets within the EU had even decreased.

It is expected that integrated capital markets will ensure better than ever financing of the economy, which is needed for achieving priority objective of European economic integration in the coming years, which is to boost the economic growth and create new jobs. Establishing a capital markets union is an important means of implementing these plans.

In the “Green Paper” The European Commission has identified the following objectives of the capital markets union<sup>160</sup>:

- creating a single capital market within the EU by removing barriers to the movement of capital between member states and harmonizing national regulations on the capital market or mutual recognition of regulations of these markets;
- improving access to finance to all companies, including SMEs, and implementers of public investments in infrastructure;
- diversifying sources of business financing and lowering the cost of capital in the EU;
- enabling SMEs to raise funds from the capital market as easily and on as favourable terms as is the case for large enterprises;
- increasing the possibilities of investing in EU capital markets regardless of the investor's country of origin;
- attracting capital from all over the world and improving the competitiveness of the EU economies in international markets.

In pursuing these objectives, it is necessary to observe the following rules<sup>161</sup>:

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<sup>160</sup> *Green Paper*, op. cit.

- using the financial markets as much as possible in order to increase corporate profits, accelerate economic growth and reduce unemployment in the EU countries;
- put the functioning of a capital markets union on a solid legal basis or on common rules for financial services that will be effectively and consistently enforced in practice;
- ensuring the effective protection of consumers and investors present on the capital market.

### **3. Actions needed to create a capital markets union**

Establishing a capital markets union is a long-term project involving many elements. EU Commissioner Jonathan Hill is responsible for the implementation of the project. His efforts in this regard should be supported by the governments of all EU member states and the European Parliament. Some actions for the establishment of a union can be implemented quickly, others need more time.

According to the European Commission, the most urgent task is to prepare and implement legal and organizational basis for long-term functioning of the European Long Term Investment Funds (ELTIFs), which are crucial for financing infrastructure projects. The first such fund, worth EUR 21 billion, yet in 2016, should raise funds for the implementation of major infrastructure projects using loans and other forms of financing from investment funds, insurance companies and other financial institutions<sup>162</sup>.

Other priority actions for the integration of capital markets in the EU are:

- lowering barriers to access the capital market for small and medium-sized enterprises;
- creating a sustainable market for securitization of assets of high quality;
- improving access to venture capital for small and medium-sized companies;
- developing private placement markets.

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<sup>161</sup> *Green Paper*, op. cit.

<sup>162</sup> Strong interest in the new funding mechanism of the EU strategic investments is expressed by Poland, which is ready to engage up to EUR 8 billion in this project. *Polska w klubie euroinwestorów*, "Puls Biznesu", 22.04.2015.

To facilitate companies' access to the capital market, the existing regulations for drawing up a prospectus should be revised, ensuring adequate protection of investors' interests. Currently, the preparation of a prospectus for companies is very complicated and expensive, and for recipients a required prospectus is too wide and incomprehensible. It is therefore essential to examine whether it is always necessary, simplify the information contained therein and streamline the process of its approval by the financial supervisory authority.

Building a sustainable market for high-quality securitized products is the next step on the road to a capital markets union. As a result of the securitization of bank assets, they are liquidated. Bank's own capital to cover risks associated with these assets is released and banks obtain additional funds for lending. Although in the EU member states there are adequate assets that may be subject to securitization, since the outbreak of the global financial crisis, securitization does not enjoy a good reputation. In 2014, securitization issuance amounted to only EUR 216 billion, representing 34% of its pre-crisis level<sup>163</sup>. An important obstacle to securitization are too high and non-transparent regulatory requirements. The growing importance of securitization as a source of funds for economic activity requires, *inter alia*, create a transparent and stable regulation and increase standardization in the field of securitized products<sup>164</sup>.

As a priority task for the construction of the capital markets union, the European Commission also considered broadening the access of SMEs to venture capital, which is particularly important in order to increase innovation of enterprises, establish new companies (start-ups) and strengthen their position in the market. In most European countries, venture capital / private equity funds are very weak, and the whole EU venture capital market is five times smaller than in the United States. As much as 90% of the market is concentrated in eight member states: United Kingdom, Germany, Sweden, Denmark, Finland, the Netherlands, France, and the Netherlands. In many countries, venture capital funds have not reached the scale necessary to reduce the risk of their investment portfolio. In view of the weak interest of

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<sup>163</sup> *Green Paper*, op. cit.

<sup>164</sup> G. Beecken, *Im Interview: Jonathan Hill, EU-Kommission: "Ich will nichthetzen"*, "Boersen Zeitung", Frankfurt am Main, 31.03.2015.

investors in venture funds, institutions of public law provide capital for them. Through the Green Paper, the European Commission has asked all interested parties how to develop venture capital funds as an alternative source of finance for enterprises and help investors entrusting their money withdraw from a fund.

The establishment of the capital markets union should significantly improve access to external financing to all enterprises. The European Commission assumes that by simplifying and harmonizing rules on the issuance of securities in the public market, companies, particularly large ones, will have larger opportunities to obtain funds from the issue of shares and bonds. For smaller companies, raising funds in the public market is too expensive. However, for such firms it is possible to place securities on the private market, i.e. offer them to one or a small group of investors outside the public market. Due to the differences in national bankruptcy law systems, the lack of standard procedures for placement of securities and an adequate system of information on the creditworthiness of potential issuers of securities, a Europe-wide market for private placements has not evolved. Recently, the European Commission welcomed a guidebook on common market practices and standard documentation regarding the placement of shares and bonds on the private market, which is the first step towards the development of the European markets for the placement of securities.

For SMEs, bank loans will remain the basic form of financing even when the fundamental skeleton of the capital markets union has been built. However, since the global financial crisis their access to credit has been severely limited. Indeed, banks have tightened credit conditions and increased costs of loans. According to DB Research, in the second half of 2013, in the euro area, 6% of small and medium-sized enterprises did not ask for a loan only because they had no chance to receive it, 11% of companies applying for a bank loan received a negative response, and 10% of enterprises received only part of the requested loan amount<sup>165</sup>. In the "Green Paper", the European Commission points out the need to develop a harmonized set of information constituting for banks the basis for assessing the creditworthiness of companies applying for credit. The European

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<sup>165</sup> O. Kaya, *Mittelstandsfinanzierung im Euroraum*, DB Research, EU-Monitor: Globale Finanzmärkte, Frankfurt am Main, 13.01 2015.

Commission has already started work on SME credit scoring, which enjoys broad support from member states. Today, even the vast majority of companies in the EU countries have not got their credit scores.

#### **4. Criticism of the plan to create a capital markets union from savings banks and cooperative banks**

The idea of building a capital market union within the EU generally enjoys the support of the governments of the member states and economic circles. Large commercial banks do not have objections to this project. In contrast, smaller banks, which are savings banks and cooperative banks, look at the planned integration of the financial markets with a certain distance. Undoubtedly, a capital markets union will contribute to a change in the financing of economic activity in continental Europe. The role of the capital market in the process of raising funds by enterprises will increase at the expense of financing by banks. The European model of the financial system will close to the US model which is focused on capital markets. There are doubts, however, whether such an approach to finances will not collide with financial culture based on banks in most EU countries.

Representatives of the German cooperative banks are especially very critical of the proposed capital markets union. They emphasise that for most small and medium-sized enterprises financing through capital markets is too complicated and too expensive and therefore such firms do not take it into account. They also emphasise the fact that the EU countries should not create any artificial incentives to invest in opaque and complex capital market instruments either for private investors or for institutional ones. They also deplore the fact that in parallel with the intention of loosening the rules on capital market instruments, legal regulations of banking activities in the EU are being tightened. They believe that the worst thing is that small banks that are critical for SME funding must meet on a par with the big banks increased capital and reporting requirements, although in their case there is no economic justification for this type of action<sup>166</sup>.

Also representatives of German savings banks are critical to the capital markets union. Georg Fahrenschon – President of the German Savings Banks

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<sup>166</sup> U. Fröhlich, *Statement. Jahreskonferenz*, Frankfurt am Main, 23.03.2015, <http://www.bvr.de>.

Association – believes that the European Commission overestimates the benefits which the creation of the capital markets union can bring to SMEs. According to him, strengthening local banks that specialize in financing small businesses would be a better solution<sup>167</sup>.

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<sup>167</sup> T. Gollmann, *Kapitalmarkt-Union soll Finanzierung für Mittelstand vereinfachen*, “Deutschen-Mittelstands-Nachrichten” 18.02.2015.



### **3.3. Changes in rates of excise duty tax for hard alcoholic beverages in relation to consumer behaviour in Poland between the years 2008 and 2012**

#### ***Introduction***

In Poland, taxes are the main income source for the state budget and their share in the budget's structure increases every year. Excise duty tax is the second largest budget income source. Among others, the tax is levied on hard alcoholic beverages, which constitute a means of influencing consumption patterns to achieve appropriate income for the state budget and a means of reducing consumption of these stimulants due to their harmful effects. Those objectives are pursued by selective differentiations of the tax, which is included in purchase prices of hard liquor. The grounds for this is that prices ought to include additional costs suffered by the society, e.g. to cover damage, costs of alcohol-related road accidents, or addiction treatment. On this account, it is of importance to establish appropriate rates of excise duty tax for alcohol and learn consumers' reactions to such change. Therefore, this article aims to assess the impact of changes in excise duty rates for hard alcoholic beverages on consumer behaviour in Poland between 2008 and 2012. This particular period was chosen for study owing to the fact that two phenomena occurred at the same time; namely, an economic-financial crisis and a 2009 change in excise duty on alcohol. There was a need of increased revenues for the state budget to limit the crisis's impact on both the economy and society. In face of the challenges, it was important to maintain alcohol-related revenues on appropriate levels, which was assumed on account of the character of alcohol demand.

Further to the above, a research hypothesis was proposed that the change in excise duty on hard liquor (which has high inelasticity of demand)

brings about small changes in consumer behaviour that should not limit associated revenues to the state budget. To verify the research hypothesis and to meet the study's objectives the Polish excise duty tax levied on alcohol was described, its changes in years 2008-2012, and its influence on consumer behaviour. Desk research and statistical analysis and deduction enabled to arrive at conclusions. The study includes elements of research conducted by Norbert Bilecki for an MA paper titled "Excise duty tax as a behaviour determinant for consumers of hard liquor in Poland between 2008 and 2012", which was supervised by this article's author.

### **1. Description of excise duty tax levied on alcohol**

Excise duty tax is an intermediate tax regulated by the act on excise duty tax<sup>168</sup>; characteristically, it is a one-time tax<sup>169</sup> and a type of consumption, selective tax, because its payers are only those individuals who purchase the excise goods.

During the studied period, the main legal acts that regulated excise duty on the territory of Poland were<sup>170</sup>:

- an act of 6 December 2008 on excise duty tax regulating tax burden levied on excise goods,
- ordinances by the Minister of Finance:
  - the ordinance of the Minister of Finance dated 10 May 2012 amending the ordinance on control of some excise duty goods (Dz. U. [Journal of Laws] 2012, item 587),
  - the ordinance of the Minister of Finance dated 12 September 2012 amending the ordinance on exemptions of excise goods from the obligation for excise stamp (Dz. U. [Journal of Laws] 2012, item 1074),
  - the ordinance of the Minister of Finance dated 14 September 2012 amending the ordinance on applying excise stamp to excise goods (Dz. U. [Journal of Laws] 2012, item 1074).

Pursuant to the aforementioned agreement the subject of excise duty taxation includes among others<sup>171</sup>:

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<sup>168</sup> Dz. U. [Journal of Law] 2014, no. 0, item 752.

<sup>169</sup> Z. Modzelewski, *the VAT tax – legal opinion*, LexisNexis, Warszawa 2003, p. 15.

<sup>170</sup> Records of legal acts signed by the Minister of Finance, Warszawa, [www.mf.gov.pl](http://www.mf.gov.pl), 22 February 2015.

- producing excise goods,
- release of excise goods from tax warehouse,
- sale of excise goods within the country,
- sale of excise goods outside the country,
- intra-Community purchases and supply.

In Poland, tax is also applied to e.g.: alcoholic beverages and ethyl alcohol<sup>172</sup>, which are one of the most significant excise goods in terms of state budget's income. There are two reasons to apply excise duty to alcohol goods<sup>173</sup>:

- the fiscal one – increase of budget revenue,
- non-fiscal – restricting its consumption in respect of regulations on counteracting alcohol addiction.

Table 1 presents alcohol beverages grouped according to a classification of the Polish act on excise duty.

Combined Nomenclature codes are given to present a simplified breakdown of alcohol beverages<sup>174</sup>:

- CN 2203 – beer made from malt
- CN 2204 – wine made from fresh grapes including fortified wines and grape must (other than the one belonging to section 2009):
  - CN 2204 10 – sparkling wine,
  - CN 2204 21 10 – other wines (grape must where fermentation did not begin or stopped)
  - CN 2204 29 10 – items not assigned to 2204 10, bottled wines with a mushroom-shaped cork and of pressure of at least 1 bar, but no more than 3 bars,

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<sup>171</sup> Cf. H. Wnorowski, *Excise duty tax on spirits in Poland: testing the Laffer curve*, Scholar, Warszawa 2010, p. 126.

<sup>172</sup> Apart from them, excise duty embraces: energetic products and electric energy, other petroleum products, tobacco goods, and cars.

<sup>173</sup> State budget's income, the Parliament of Poland, Warszawa, [www.sejm.gov.pl](http://www.sejm.gov.pl), 16 July 2015.

<sup>174</sup> Combined Nomenclature 2012, p. 177.

Table 1

**The division of alcohol beverages according to the excise duty act**

<b>ALCOHOL BEVERAGES</b>				
<b>ethyl alcohol</b>	<b>beer</b>	<b>wine</b>	<b>fermented beverages</b>	<b>Intermediate goods</b>
Any products with alcohol content over 1.2% by volume (CN 2207, 2208) – even if the products are ingredients of goods from other sections of the Combined Nomenclature	products within the CN 2203 section and products made by mixing beer with soft drinks (CN 2206) of actual alcoholic strength of over 0.5% by volume	non-sparkling wine-products within the CN 2204 and 2205 sections. Alcohol content is between 1.2% and 18%	sparkling fermented beverages – products within the CN 2206 section with the following codes: 2204 10, 2204 21 10, 2204 29 10 and 2205. 2 groups are distinguished, one with alcohol content 1.2%-13% and 13%-15%. Alcohol ingredient must come from fermentation process.	Any products with actual alcoholic strength between 1.2% and 22% by volume marked as CN 2204, 2205 and 2206, but not assigned to the beer, wine or fermented beverages categories.
products of actual alcoholic strength exceeding 22% (CN 2204, 2205, 2206)		sparkling wine – products with codes CN 2204 10, 2204 21 10, 2204 29 10 and 2205. Actual alcoholic strength between 1.2% and 15%	non-sparkling fermented beverages within the CN 2204 and 2205 section that are not sparkling fermented beverages, and products from the CN 2206 section (with 1.2%-10% and 10%-15% alcohol content by volume). Alcohol ingredient must come from fermentation process.	
products containing reduced or non-reduced proof ethyl alcohol				

Source: outline based on Excise Duty Tax Act, Dz. U. [Journal of Laws] 2009, no. 3, item 11.

- CN 2205 – vermouth and the remainder of wines made from fresh grapes and flavoured with flavouring substances and substances of plant origin,
- CN 2206 – other fermented beverages (perry – made from pears), cider (made from apples), and mead, blends of fermented beverages with soft drinks, and blends of different fermented beverages,

- CN 2207 – undenatured ethyl alcohol of an alcoholic strength by volume of 80 % vol. or more (ethyl alcohol with other alcoholic products, denatured, of any alcoholic strength),
- CN 2208 – undenatured ethyl alcohol of an alcoholic strength by volume of less than 80 % vol (those are vodkas, liqueurs, and other spirit drinks: spirit drinks made by distilling grape wines, whisky, rum and other products made by distilling fermented products from sugarcane, gin and gin Geneva, vodka, and liqueurs and cordials)

Goods to which excise duty is applied are marked. This may include excise stamps in the form of a stripe, an actual stamp, or guild symbols<sup>175</sup>. The signs must be applied onto unit packaging of excisable product in such a way that an attempt to remove the stamp or opening of the product will result in a permanent damage of the stamp. It renders a reuse of the stamp impossible.

As mentioned earlier, excise duty significantly impacts state budget's income, as well as consumer demand for the products to which it is applied. Constant demand for alcohol makes excise duty one of the largest sources of revenue for the state budget along with the VAT tax. Therefore when establishing the rate of excise duty tax, the state ought to take it into consideration and yet remember about the Laffer curve and the necessity to meet the non-fiscal objective, which is counteracting alcohol addiction and promoting healthy life style. Determining the rate of alcohol excise duty tax that will ensure the achieving of the objectives (i.e. sufficient revenues for the state's treasure and prohibitive impact) is no easy task. This is why it is worth to learn about consumers' reactions to the price shift for hard liquors that resulted from raising the excise duty tax in 2009.

#### 1. Change of excise duty tax on hard liquor in 2009-2012

According to the act on excise duty tax dated 6 December 2008, the tax basis for different types of alcohol is<sup>176</sup>:

- ethyl alcohol – the number of hectolitres of 100% pure ethyl alcohol at the temperature of 20°C in a finished product,
- beer – the number of hectolitres of a finished product for 1 degree Plato,

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<sup>175</sup> J. Giuchowski, *Polish tax law*, LexisNexis, Warszawa 2004, p. 300.

<sup>176</sup> Excise duty act, Dz. U. [Journal of Law] 2011, no. 108, item 626.

- wines – the number of hectolitres of a ready product,
- fermented beverages – the number of hectolitres of a ready product,
- intermediate products – the number of hectolitres of a ready product.

Since hard liquor is excisable goods, applied rate of tax influences product prices, which must be paid by the consumer purchasing a given alcoholic beverage. If the price is too high, it can discourage a certain group of consumers from buying the product.

In Poland, until 28 February 2009 the Minister of Finance was responsible for ordinances regulating the tax rate of excise duty and stipulating how the tax is applied, and this Minister had basically the biggest influence on the level of excise duty tax rate<sup>177</sup>. The act on excise duty provided only a maximum tax rate, but its actual level was frequently shifting, because the Minister of Finance was entitled to issue regulations lowering the rate. As a result, the level of excise duty tax rate levied on the product so important for the state budget was one of the least stable taxes paid by businesses<sup>178</sup>. The situation changed with a new act on excise duty tax that was effective on 1 March 2009 and which introduced some stability to the excise duty tax<sup>179</sup>.

Between the year 2008 and 2012 the rate of excise tax was changed only once and it was brought about by the act on excise duty tax of 6 December 2008. The act replaced a former act dated 23 January 2004 with later amendments by the Minister of Finance. The government reasoned that the decision to increase tax burden on ethyl alcohol and alcoholic products came due to increased average monthly salary, which translated into lowering of the actual tax burden on spirits in that period<sup>180</sup>. Nevertheless, it is a popular opinion that the increase of excise duty rate on alcohol was associated with the need to secure higher revenues for the state budget owing to the then-present economic crisis and the need to limit its different effects – both the economic and social one.

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<sup>177</sup> *Polish tax law*, ed. K. Koperkiewicz-Mordel, Difin, Warszawa 2003, p. 207.

<sup>178</sup> H. Wnorowski, *op. cit.*, p. 123.

<sup>179</sup> Excise duty act date 6 December 2008, Dz. U. [Journal of Law] 2009 no. 3 item 11, Chapter 2, Art. 14

<sup>180</sup> Odpowiedź podsekretarza stanu w Ministerstwie Finansów na interpelację nr 21580, Sejm Rzeczypospolitej Polskiej, Warszawa, [www.sejm.gov.pl](http://www.sejm.gov.pl), 22.02.15.

Furthermore, pursuant to the act on upbringing in sobriety and counteracting alcoholism of 26 October 1982 (Dz. U. [Journal of Laws] 2012, item 1356 as amended), both the state and local government are obliged to work in such a way as to effectively fight alcohol addition, act in support of sobriety in workplaces, lower alcohol consumption, and change the structure of purchased alcohol beverages. On this record, the raise in excise duty on alcohol may be regarded as a way to decrease their consumption.

Table outlines excise duty rates on alcohol products in 2008 and between 2009 and 2012.

Table 2

**Excise rates between 2008 and 2012**

alcohol product	excise rate (PLN/hl)		Growth rate for excise duty tax (%)
	2008	2009 – 2012	
<b>ethyl alcohol</b>	<b>4550</b>	<b>4960</b>	<b>9.01</b>
beer	6.86	7.79	13.56
wine	136	158	16.18
fermented beverages	136	158	16.18
intermediate products	273	318	16.48

Source: the outline is based on excise duty act of 23 January 2004. (Dz. U. [Journal of Laws] 2004, no. 2, item 257 as amended) and excise duty act of 6 December 2008 (Dz. U. [Journal of Laws] 2009, no. 3, item 11).

At the beginning of 2009, excise duty on ethyl alcohol was raised by PLN 410 (from PLN 4450 to PLN 4960) for 1 hectolitre of pure ethyl alcohol contained in a finished product, i.e. by 9.01%, and it was the first rate increase for this tax in Poland since 2005. The growth in percentage of the excise duty on ethyl alcohol was smaller than in the case of other alcohol products:

- 13.56% for beer (PLN 0.93),
- 16.18% for wine and fermented beverages (PLN 22),
- 16.48% for intermediate products (PLN 45).

The increase in excise duty rate led to an increase in prices for alcohol beverages. The share of excise duty the price of a given alcohol was calculated to determine the degree of price increase in 2008 and between 2009 and 2012. To do this, average prices were noted for alcohol beverages

like half a litre of bottled vodka 40%, white, dry grape wine 0.75 l and bottled, full pale lager beer (table 3).

Table 3

**Average prices of manufactured alcohols 2008-2012 (PLN)**

type of alcohol	2008	2009	2010	2011	2012	Price increase in the years 2008-2012 (%)
white (unflavoured) vodka 40% (0.5l)	18.61	19.50	19.59	19.90	20.27	8.92
full pale lager, bottled (0.5l)	2.69	2.89	2.91	2.90	2.92	8.55
white, dry grape wine (0.75l)	8.00	8.63	9.06	9.12	9.22	15.25

Source: data taken from [www.stat.gov.pl](http://www.stat.gov.pl), 22 February 2015.

Data in table 3 reveals that the introduction of higher excise duty tax in 2009 caused a conspicuous increase in the prices of alcohol beverages. In the following years their prices rose much slower, which was associated with producers getting used to the new market reality. In the studied period, prices of white grape wine saw the highest increase (by 15.25%), and prices of beer the smallest one (8.5%), while prices for vodka rose by 8.92%.

Knowing the average prices of these products and rates of excise duty tax in the studied period, the amount of excise tax in prices for each drink was calculated. The revealed amounts make it possible to determine to what extent excise duty tax influences prices of excisable goods. Table 4 presents differences between the share of excise duty in prices of individual types of alcohol between the year 2008 and the period of 2009-2012.

Table 4

**Excise duty tax in alcohol price (PLN)**

type of alcohol	2008	2009-2012	increase (%)
white (unflavoured) vodka 40% (0.5l)	9.10	9.92	9.01
full pale lager, bottled (0.5l)	0.43	0.49	13.95
white, dry grape wine (0.75l)	1.02	1.19	16.67

Source: own calculations based on *How much will vodka go up in price after the excise duty increase?*, [www.podatnik.info](http://www.podatnik.info), 22 February 15.

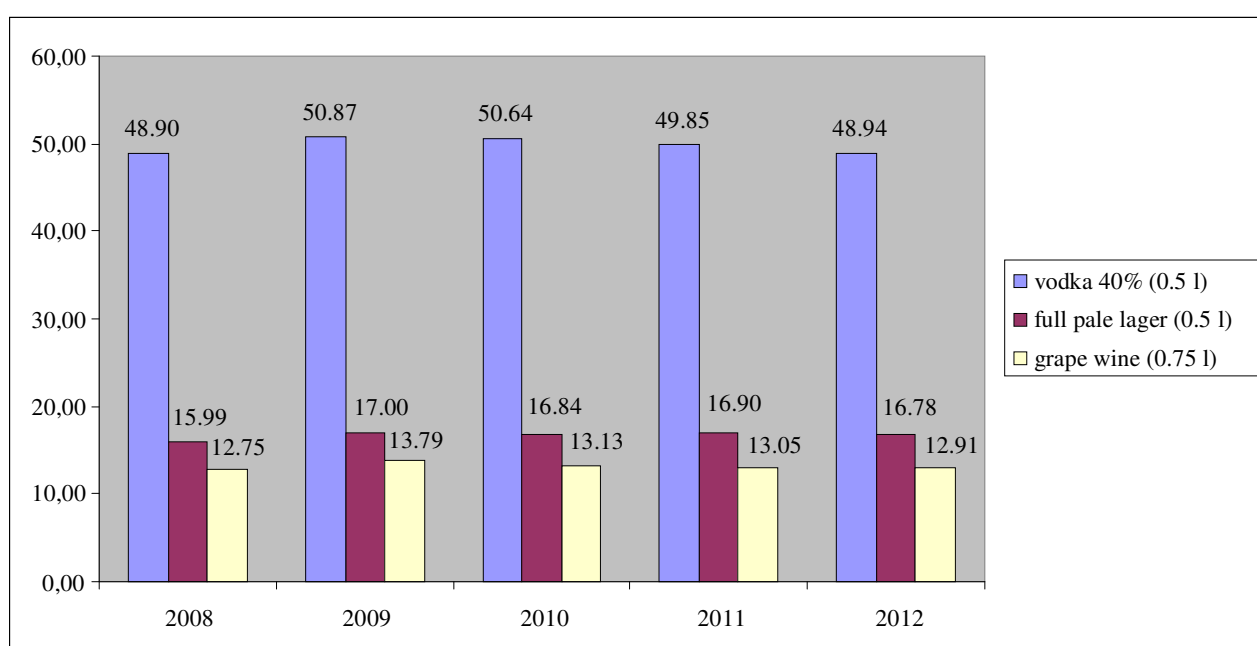
The excise increase made consumers pay for a 0.5 l of vodka with actual alcoholic strength of 40% by volume PLN 0.82 more in 2009 than in



2008. For bottled pale lager beer the difference amounted to PLN 0.06 and PLN 0.17 for a 0.75 l bottle of white grape wine.

The percentage of excise duty tax in prices of chosen alcohol beverages during the studied period was calculated based on average prices of alcoholic products and the actual amounts of excise tax in price for 1 product item (figure 1).

The share of excise duty tax in prices will help illustrate reactions of alcohol producers to higher rates of the tax, which is significant in terms of consumer behaviours, which change along with retail prices for alcohol.



**Fig. 1. The percentage share of excise duty in alcohol prices between 2008 and 2012**

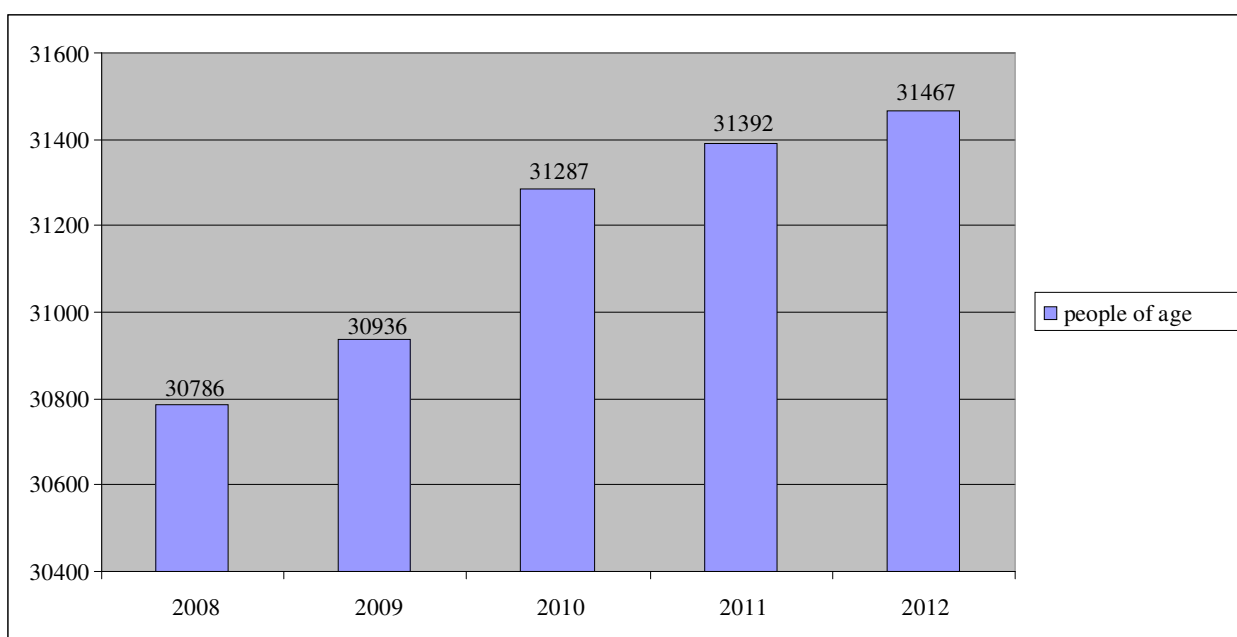
Source: own calculations based on data from [www.stat.gov.pl](http://www.stat.gov.pl), 22 February 2015.

Rate increase for excise duty in 2009 raised its share in prices and led to an unfavourable alcohol price increase that consumers had to pay. In the following years, prices for each type of alcohol rose gradually as to provide for income for alcohol drinks producers on similar levels to those in 2008, when a lower rate of excise duty was levied. Alcohol producers aimed at decreasing the percentage share of excise duty in prices back to the level of 2008. This of course resulted in the prices for alcohol beverages being constantly raised, which is depicted in Table 4.

Summarizing, the increase of excise duty tax on alcoholic products brought about increases in their prices, which determines consumer demand.

## **2. Analysis of demand on hard liquor in Poland**

Under the Polish law, only consumers who are 18 years old and upwards may raise demand on alcoholic beverages. Figure 2 presents the number of adults in the studied period.



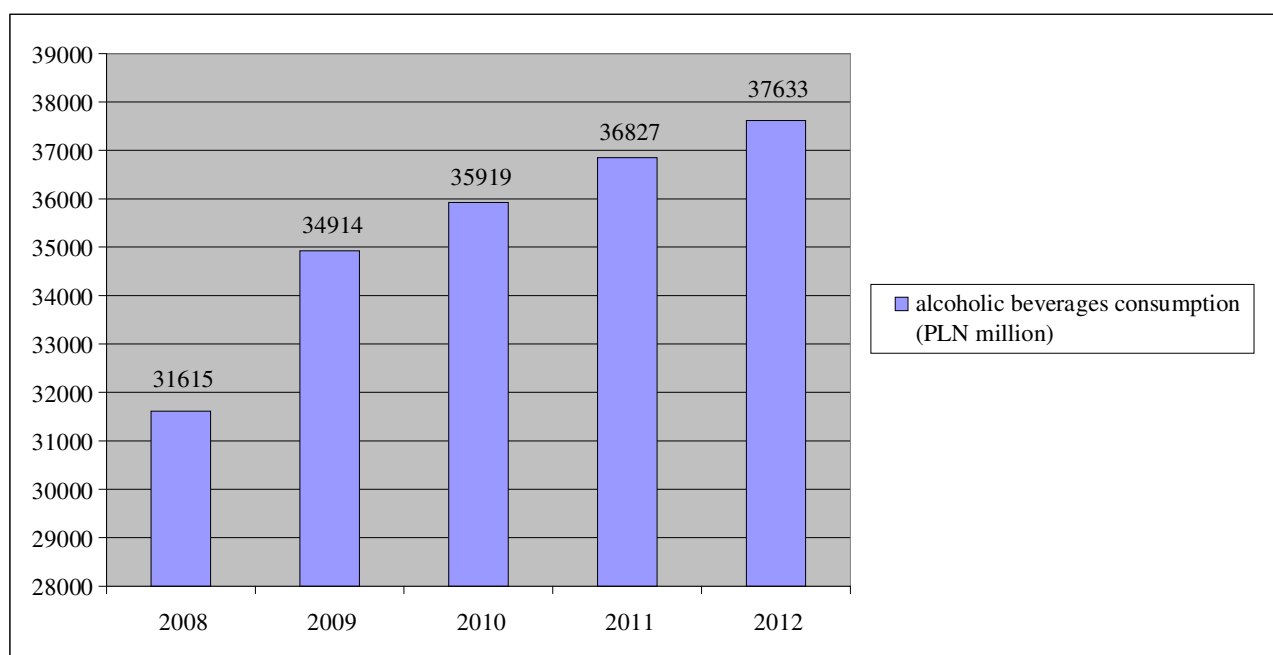
**Fig. 2. People of age living in Poland between 2008 and 2012 (thousands)**

Source: prepared on the basis of the *Concise statistical yearbook* for 2009-2013, Central Statistical Office of Poland, 2009-2013.

In 5 years the number of adults rose from 30786 thousand in 2008 to 314667 thousand in 2012, which means a rise by 681 thousand (2.21%). The percentage share of adults in the Polish population between 2008 and 2012 rose by 0.93% (from 80.73% to 81.66%). So notably, Poland had an aging population with a rising share of people entitled to purchase alcohol.

The demographic situation in Poland in the years 2008 to 2012 was favourable for alcohol demand, which translated into increased financial resources for purchases. Furthermore, the excise duty increase on those products in 2009 that led to the increase in prices of alcoholic products also

influenced the levels of money spent on individual consumption. Owing to the fact that in 2008, as opposed to 2009, there was a different, lower rate of excise duty tax on alcoholic beverages, the highest difference in consumption volumes can be observed at the turn of those years (figure 3).



**Fig. 3. Individual consumption of alcoholic beverages in Poland between 2008 and 2012 (PLN)**

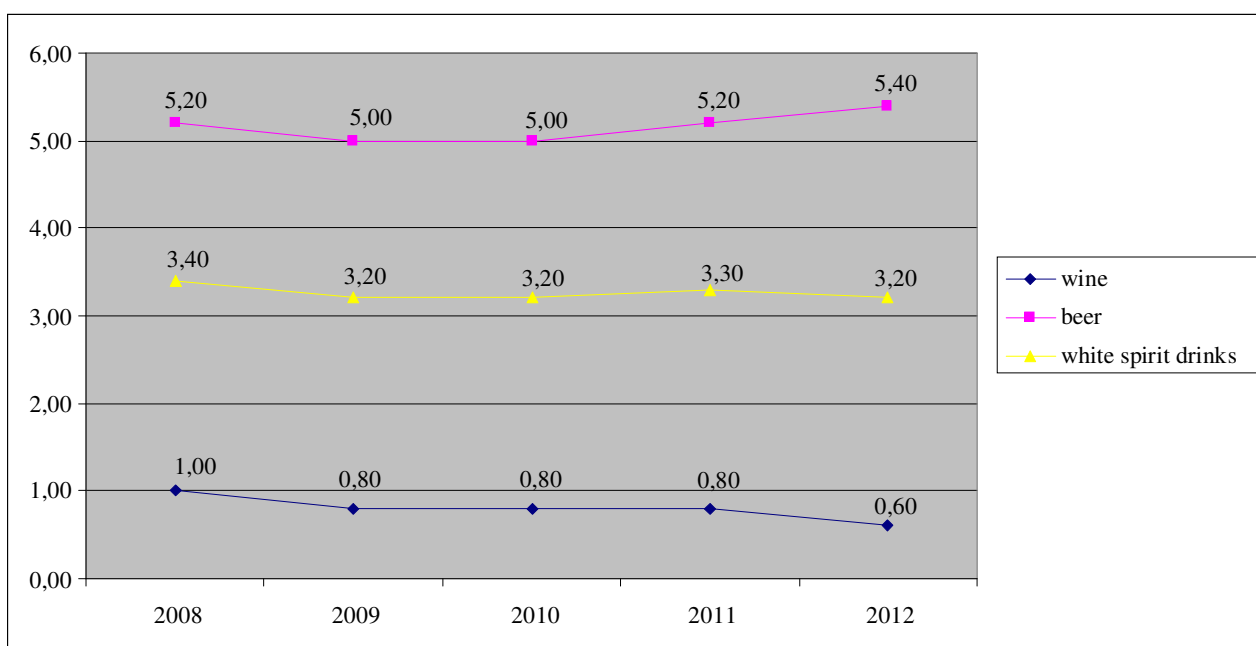
Source: own breakdown based on *the Concise statistical yearbook* for 2009-2013, Central Statistical Office, 2009-2013.

In 2008, Polish people spent PLN 31615 m on alcoholic beverages. After the higher excise duty tax was introduced in 2009, consumers of alcoholic beverages spent PLN 34914 m, which is approximately PLN 3.3 bn more than a year earlier (i.e. 10.4%)<sup>181</sup>. In the following years, when the rate of excise duty did not undergo any changes, expenses on alcoholic beverages further rose, but the increase was not as significant (an average of 2.4% in relation to each previous year) as at the turn of 2008 and 2009. In the period of 2009-2012, when the rate of excise duty remained constant, Polish people spent together PLN 2.7 bn more than in the first year of the higher

<sup>181</sup> It is an estimated value, because in 2009 Poland had more inhabitants that were allowed to buy alcohol than in the previous year, but that increase would not evoke such a great increase in alcohol expenditures.

excise on alcoholic drinks. This could be an outcome of rising prices for vodka, wine, and a gradual increase of adults, that is potential buyers of these products, as well as a result of the level inflation.

Having analysed expenses on alcohol it can be concluded that the increased rate of excise tax affected their levels, yet it did not lead to any serious fall in consumption. This is evident in the fact that amounts of money spent on alcohol reveal a similar growth rate in the following years. A further proof is a relatively small increase of consumption of litres of pure 100% alcohol per one Polish citizen in the studied period (figure 4).



**Fig. 4. Consumption levels of chosen alcoholic beverages per Polish citizen between 2008 and 2012 (litres of 100% alcohol)**

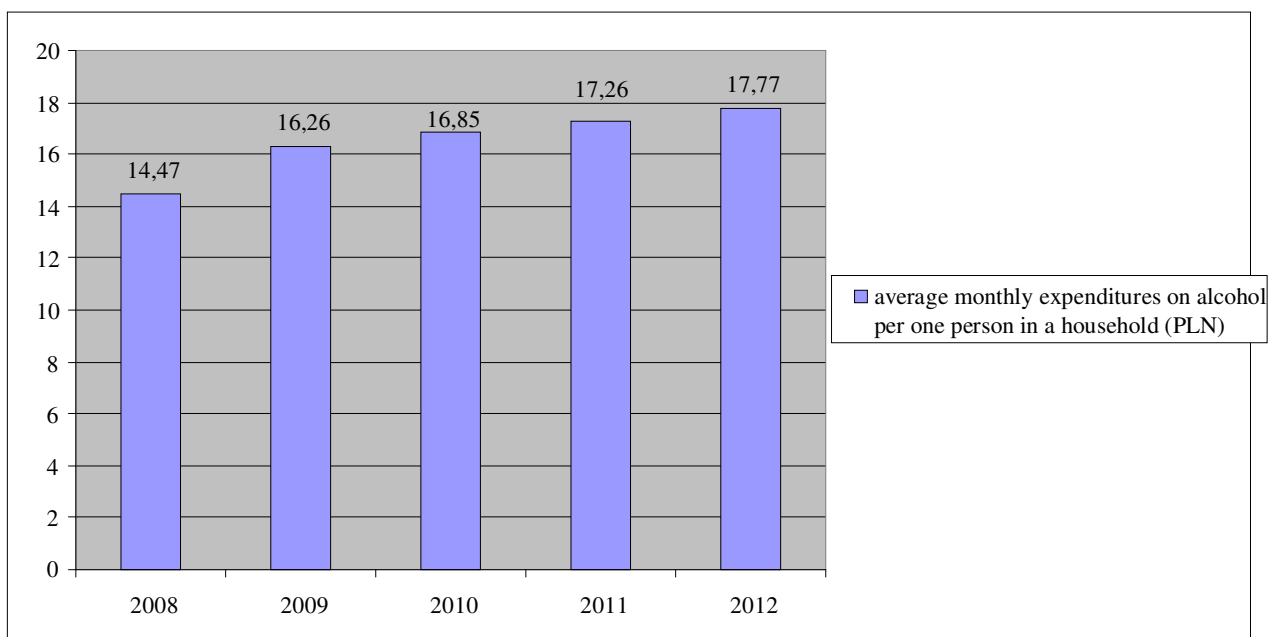
Source: chart prepared with data from [www.zppps.pl](http://www.zppps.pl) (20 April 2015).

Beer was the most popular. In 2008, one statistical adult consumer drank 104 litres of beer of alcoholic strength of 5%, and in 2012 it was 108 litres. Next, there were white spirit drinks where in 2008 their consumption was equal to 8.5 litres per person of vodka and other hard liquors, while in 2012 it was 8 litres of white spirit drinks.

During the studied period of 5 years, wine was the least often purchased alcohol, and its consumption fell from around 10 litres per person in 2008 to approximately 6 litres in 2012. It has to be emphasized that in the

first year after increased excise was introduced, the consumption of each type of alcohol per person went down. Yet in the end, in 2012 beer consumption was higher than in 2008, white spirits consumption reached similar levels to those in 2009, and wine consumption considerably decreased. So the structure of alcohol consumption did change to a degree.

Higher excise duty, which made alcohol producers increase prices, also translated into higher amounts spent on alcoholic drinks per person in a household (figure 5).



**Fig. 5. Average monthly expenditures on alcoholic beverages per capita in a household in the years 2008-2012 (PLN)**

Source: chart based on *the Concise statistical yearbook* for 2009-2013, the Central Statistical Office, 2009-2013.

As can be observed, average expenditures on alcoholic drinks per one person in a household were the lowest in 2008 when excise duty tax was lower. Back then expenditures on alcohol amounted to PLN 14.47, which was related to lower (than in the following years) prices for vodka, wines, and beer. In 2009 together with the price increase on alcoholic beverages, there was an increase in average monthly expenditures on those products by PLN 1.79 (12.3%) and they were equal to PLN 16.26. In 2012 monthly expenditures on alcohol per person were higher by PLN 3.3 (22.8%) in

comparison to 2008. Thus, from 2009 to 2012 such expenditures rose in total by 10.5% (approx. 2.6% annually), so less than the “soar” between 2008 and 2009.

To recapitulate, in Poland between 2008 and 2012 excise duty levied on alcohol was raised only once, and it occurred at the onset of 2009 when a new act on excise duty tax date 6 December 2008 became legally effective. As a result, prices for alcoholic drinks were raised, which made potential consumers to increase amounts of money spent on alcohol to maintain its consumption on the same level. The country was characterized by an aging population, because there were increasingly more people over 18 years of age, which also translated to increased demand on alcoholic products over the studied years. However, the pace of population increase was not as high as the dynamics of increase of alcohol prices.

### ***Conclusion***

On the basis of the conducted analysis it can be concluded that in the studied period, despite an economic crisis, an increase in excise duty tax rate on hard alcoholic beverages that lead to higher prices did not evoke any serious fall in consumption, but an insignificant change of the structure of alcohol demand of consumers. The low reaction of consumers proves that alcohol demand is characterized by price inelasticity, which for the government is not only a signal that it can further raise excise duty rates on alcohol to achieve considerable income for the state budget. In relation to the Laffer curve this also means that rates of this tax have not yet reached their maximum levels that would result in limited budget income.

### **3.4. Behavioural economics and taxes – some insights from experiments with polish taxpayers**

#### ***1. Behavioral and experimental economics***

According to the presently dominant paradigm of public policy, the assumptions of neoclassical economy, so-called rational choice theory, are applied to predict and construe behaviour of intervention recipients. According to this theory, people are rational, safeguard their own interests, and aim at maximising their benefits while minimising costs.

However, this approach has failed to fully reflect the reality, as people behave differently than expected by the theory of rational choice. One of the research currents that provides an increasing number of arguments that people follow emotions in their actions (including economic ones), are subject to illusion, and are grossly mistaken when assessing a situation in which they take a decision, is the experimental economics.

The list of decision-taking mechanisms that differentiate real people from the idealised model of *homo economicus* can be summarised in the three main limitation groups<sup>182</sup>:

1) bounded rationality involves the simplified heuristics and errors in estimating the probability and assessing values;

2) bounded willpower means that people often take actions that are unfavourable for them in a longer perspective; and

3) bounded self-interest means that in some situations people take decision without maximising their own optimum interest, but rather following their sense of justice or cultural standards.

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<sup>182</sup> Jolls, C., Sunstein, C.R. & Thaler, R.H. (2000). A behavioral Approach to Law and Economics, w: Sunstein, C.R. (red.) Behavioral Law and Economics, Cambridge: Cambridge University Press, 13–58. – p. 14-16.

Most traditional tax policies have been based on classical economic models of tax payers as decision makers. As in many fields where humans make decision, however, more integrated behavioural economic models, that is, models that take into account both psychological and purely economic factors can provide further insights<sup>183</sup>.

Taxes are the main source of income to finance publicly provided goods and services. Thus, tax compliance directly impacts a country's ability to provide public goods, such as roads, schools, public health services and administration.

Considering the importance of taxes and the fiscal policy for the operation of a country, it is important that decisions in this respect should be taken both reasonably and effectively. Such efficiency can be enhanced with experiments that make it possible to verify the consequences of introduced changes and thus achieve better results for the state budget while keeping costs on the same level. Issues related to the use of experiments are within the behavioural economics, which are becoming more and more a part of the economics mainstream. Experiments are a new phenomenon in economics, because at the outset of this science this research method was excluded from the canon of economic methods.

The behavioural economics are a branch of economics that aim at explaining the reality in a manner that is more accurate than in case of traditional theories, by introducing more realistic psychological grounds. Behavioural economics that date back to the 1930s<sup>184</sup> are an eclectic science, open to possibilities of improving the theories of economics with very good results.

The behavioural economics are not a uniform school but rather a collection of varied theories, including the Michigan school (G. Katona), the psychological economics (C. Cermerer, R. Thaler, E. Fehr), the behavioural macroeconomics (G. Akerlof), the evolutionary economics (R. Nelson, S. Winter), the behavioural finance (R. Schiller), and the experimental economics (V. Smith)<sup>185</sup>.

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<sup>183</sup> Weber, T. O., Fooker, J., & Herrmann, B. (2014). Behavioural Economics and Taxation (No. 41). Directorate General Taxation and Customs Union, European Commission. – p. 3.

<sup>184</sup> Soliwoda, M. (2014). Podejście behawioralne i eksperyment ekonomiczny w finansach rolnictwa. *Zagadnienia Ekonomiki Rolnej*, (1 (338)), 57-77. – p. 57-77.

<sup>185</sup> Tomer, J. F. (2007). What is behavioral economics?. *The Journal of Socio-Economics*, 36(3), 463-479.



All the above-mentioned concepts undermine the neoclassical belief that identifies a man with *homo economicus*, who is characterised by complete rationality, pursuing the narrowly understood self-interest, and having complete self-control.

The application of human, social, cognitive, and emotional elements while taking economic decisions, i.e. the ones that result in profit or loss, has allowed to distinguish a separate branch of economics, namely behavioural economics<sup>186</sup>. On the other hand, experimental economics have become a branch of behavioural economics. The basic research tool in experimental economics are experiments that may be conducted both in laboratories and in the field. Results of such experiments can be used to test and understand economic theories better.

Experiments have advantages compared to theoretical modelling, estimations and survey evidence. Alm<sup>187</sup> argues that experiments, compared to survey evidence, allow for a direct observation of decisions to evade. Theoretical models cannot include all important factors for the taxpayers' decision making without being too complex. Thus, experimental evidence can complement theoretical models. Furthermore, the effects of institutional changes as well as changes in the social environment can be tested. Field experiments yield an increased external validity of the results.

For the first time the impact of the manner of presenting a decision-taking situation on decisions was researched by Amos Tverski and Daniel Kahneman. In the 1970s, they carried out famous behavioural experiments in taking decisions that concerned the same matter but were presented in different ways. The issue was called framing and it shows that the method of describing the same decision situation has a major impact on decision-taking<sup>188</sup>.

Experiments from the late 1970s encompassed very basic issues and did not try to answer the question whether and to what extent a message

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<sup>186</sup> Jabiocka, E. (2013). Obszary zastosowania ekonomii eksperymentalnej. *Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania/Uniwersytet Szczeciński*, (32, t. 2), 37-50.

<sup>187</sup> Alm, J. (2012). Measuring, explaining, and controlling tax evasion: lessons from theory, experiments, and field studies. *International Tax and Public Finance*, 19(1), 54-77. – p. 65.

<sup>188</sup> Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211(4481), 453-458.

affects decisions taken by economic enterprises within the acceptance of economic policy incentives. This issue was raised in a rather limited manner by evolutionary economics, for example by T. Slembek (14, pp. 130-136). This approach usually analyses adaptive reactions of economic entities to the changing economic environment. Some measures in this regard were also taken by P. Kulawczuk in his article *Reactions of Taxpayers to Tax Incentives. A Concept of Environmental Impact of Tax Incentives*<sup>189</sup>, which refers largely to the concepts of the evolutionary economics, behavioral ecology and behavioral public finance. The study classifies tax incentives from the point of view of scope and nature of their impact. Moreover, the author proposes a matrix of tax policies from the point of view of changes (adaptive or temporal) as well as the frequency of using incentives. In another article by P. Kulawczuk *Economic Motives of People and their Reactions to Crisis Situations*<sup>190</sup> the analysis of economic motives that determine behavior of individuals was carried out with reference to economic life strategies.

## **2. Experiments with Polish taxpayers**

The paper describes two experiments carried out in Poland and involving the taxpayer behaviour analysis. The first experiment was conducted by the World Bank and the Polish tax administration, while the second by the team of researchers from the Faculty of Economics, University of Gdansk.

### Experiment 1

The first research project was targeted at testing out a hypothesis about the impact of behavioural influences on the improvement of tax collection in Poland. A key question asked by the authors of the experiment was as follows: how to improve the collection of taxes without generating high costs

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<sup>189</sup> Kulawczuk P. (2008), Reagowanie przez podatników na bodźce podatkowe. Koncepcja środowiskowego oddziaływania bodźców podatkowych, w: *Stymulowanie rozwoju społeczno-gospodarczego Teoria i praktyka*, red. E. Kwella, P. Kulawczuk, FRUG, Sopot. – p. 27-52 in Polish

<sup>190</sup> Kulawczuk P. (2009), Motywy ekonomiczne ludzi i sposoby reakcji na sytuacje kryzysowe. Jak współpraca w Unii Europejskiej może sprzyjać bezpieczeństwu ekonomicznemu Polski?, [w:] *Wybrane problemy integracji europejskiej*, red. A. Stępnia, S. Umiecki, A. Zabińska, FRUG, Gdansk 2009. – p. 327-345 in Polish

or amending law at the same time. It was the first pilot project in Poland based on the achievements of behavioural economics conducted as a randomized controlled trial. The applied method was to send letters of varied content to taxpayers who failed to pay income tax for 2014.

A standard procedure used in case of persons who fail to pay a tax is to send a request in a registered letter including references to the law on enforcement proceedings and a call for paying a due amount with interest.

The main content of the letter is as follows:

*You are requested to fulfil the obligation covered by this call within 7 days of the service hereof. The due amount including interest charged as of the date of payment and costs of reminder are to be paid via the Polish Post or a bank account.*

*The failure to fulfil the above-mentioned liability by the set deadline will result in filing the case to the enforcement proceedings, which will cause the obligation to pay enforcement costs that will be fulfilled first.*

The conducted experiment involved sending a letter with an unregistered post. The content of the letter was changed as well – it was far less formal. Moreover, a payment form was enclosed to some of the letters. In addition, a message was given where to pay the tax. The main content of the letter was as follows:

*According to our data, 7 out of 10 inhabitants of Warsaw have already paid their income tax for 2014. You belong to the few Warsawians who have not fulfilled this duty yet.*

*If you fail to pay the due tax, you may be subject to administrative enforcement. We will check your reaction to this letter.*

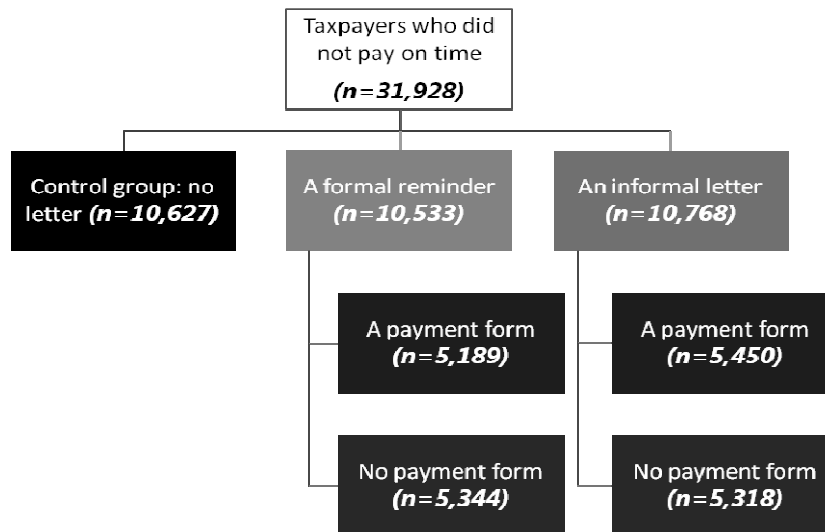
*If you cannot pay the whole amount immediately or if you have any additional questions, please do not hesitate to contact us at the number given below.*

The experiment was conducted with the involvement of the Polish tax administration; therefore, it concerned the real situation related to personal income tax arrears for 2014. The sample amounted to 31,928 persons<sup>191</sup>.

The division of the whole group is presented in the following figure:

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<sup>191</sup> The respondents came from two voivodeships: Lubuskie (5,333) and Wielkopolskie (26,592).

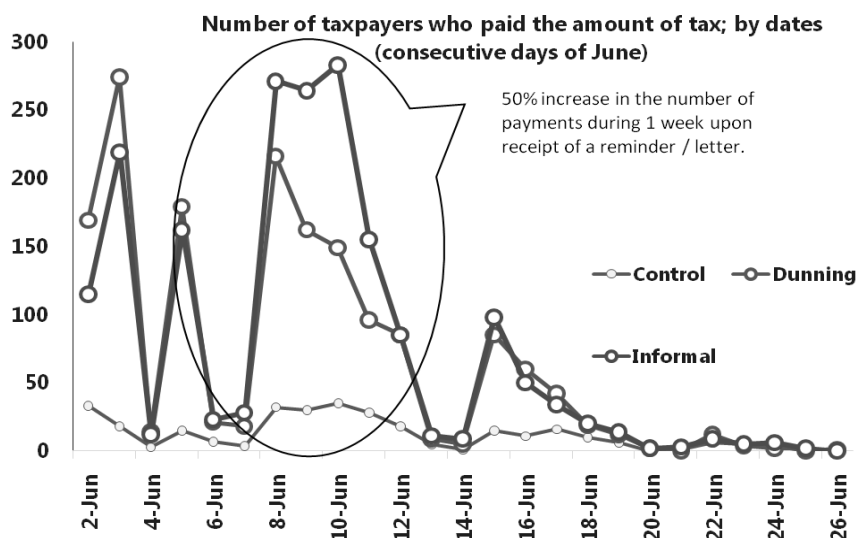


**Fig. 1. Division of the experimental group**

Source: [http://www.mf.gov.pl/administracja-podatkowa/wiadomosci/aktualnosci/-/asset\\_publisher/2UWI/content/id/4911918](http://www.mf.gov.pl/administracja-podatkowa/wiadomosci/aktualnosci/-/asset_publisher/2UWI/content/id/4911918)

As regards the control group that received no letter in the analysed period, taxes were paid by 3.5% of taxpayers. Sending a letter increased this figure significantly. If a reminder (a formal letter) was sent, 17.1% taxpayers made the payment. As regards the persons who received an informal request, this percentage was at 18.8%. It means the increase by almost 10%. A similar increase concerned the amount of paid taxes.

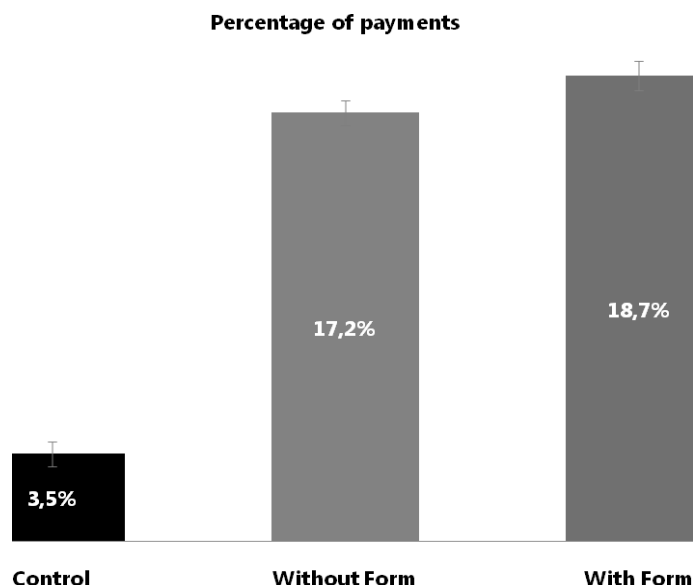
In addition, taxpayers who received an informal letter made the payment faster. The distribution of payments is presented in the figure below.



**Fig. 2. The distribution of payments**

Source: [http://www.mf.gov.pl/administracja-podatkowa/wiadomosci/aktualnosci/-/asset\\_publisher/2UWI/content/id/4911918](http://www.mf.gov.pl/administracja-podatkowa/wiadomosci/aktualnosci/-/asset_publisher/2UWI/content/id/4911918)

On top of that, enclosing a payment form had also a positive impact on the behaviour of taxpayers. The comparison of payments depending on the fact of receiving a form is shown in the figure below.



**Fig. 3. Percentage of payments**

Source: [http://www.mf.gov.pl/administracja-podatkowa/wiadomosci/aktualnosci/-/asset\\_publisher/2UWI/content/id/4911918](http://www.mf.gov.pl/administracja-podatkowa/wiadomosci/aktualnosci/-/asset_publisher/2UWI/content/id/4911918)

Enclosing a form to the letter resulted in the 9% increase in the number of taxpayers who made the payment.

A similar experiment was conducted in the United Kingdom<sup>192</sup>. The experiment was carried out in two groups (about 700 taxpayers each). One group received traditional impersonal reminders and the other group a personalised letter indicating how many persons from the borough had paid the tax. In the group that was reminded of social standards, 15% more persons fulfilled the obligation. If HMRC carried out the same action all over the UK, it would receive about GBP 150 million earlier and save the resources generating another GBP 30 million per year<sup>193</sup>.

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<sup>192</sup> Hallsworth, M., List, J., Metcalfe, R., & Vlaev, I. (2014). The behavioralist as tax collector: Using natural field experiments to enhance tax compliance (No. w20007). National Bureau of Economic Research. – p. 1-42.

<sup>193</sup> Haynes, L., Goldacre, B., & Torgerson, D. (2012). Test, learn, adapt: developing public policy with randomised controlled trials. Cabinet Office-Behavioural Insights Team. – p. 1-35.

To sum up the findings of the conducted research:

- letters with behavioural framing sent by an unregistered letter have proven effective, regardless of the Voivodeship (area) or type of tax-payer;
- by simplifying the method of payment, the better collection of taxes can be achieved (e.g. interest).

The approach presented in the experiment conducted by the Polish tax administration belongs to the new trend called behavioural public interventions. In recent years, this current has been developed by the administration in the United States, the United Kingdom, Denmark, the Netherlands, and France<sup>194</sup> and seems to have major development potential, as confirmed by the results of the presented experiments.

### Experiment 2

The second research concerning fiscal issues was carried out by the personnel of the Faculty of Economics University of Gdansk. It was a part of a large research project concerning the use of behavioural economics in testing tools that support the SME development. The research concerned as many as 16 decision-taking situations, including one question about tax issues.

The behavioral experiment involved the experimental simulation described by Brzezinski<sup>195</sup> for 16 financial instruments, both public and commercial, among 200 businesses from the SME sector or financial officers of such enterprises. The studied group was to be divided into two sub-groups of 100 respondents each that were to be presented with about a dozen decision situations concerning the application of financial instruments offered to SME. In practice, two groups of 120 respondents each were created. The decision situations faced by the respondents involved: 1) accepting a proposed incentive, 2) a refusal to accept an incentive, 3) a postponement of a decision for 3 months, 4) a postponement of a decision for 6 months or 5) a postponement of a decision for one year. The study took account of the time factor, as Polish small and medium enterprises often avoid taking a decision

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<sup>194</sup> Lunn P. (2014). *Regulatory Policy and Behavioural Economics*. Paris: OECD Publishing. – p. 25-38.

<sup>195</sup> Brzezicki J. (2007), *Metodologia badac psychologicznych*, WN PWN, Warszawa. – p. 106.

and postpone it. For several instruments, decision situations were formulated as a trade-off issue or as the assessment of preferences (for the assessment of the tendency to cooperate in risk conditions and for positive measures).

Each of the sub-groups, although they were usually offered the same instruments, had different framing of their use. Framing means that despite the basically identical content (with several explicitly marked exceptions), the method of communicating or offering an instrument varied. The authors assumed based on conclusions of Kahneman and Tversky<sup>196</sup> that the framing of the public assistance incentives or the framing of commercial financial instruments offered to SME may have a material impact on the propensity to use such financial incentives.

Respondents representing small and medium enterprises from the northern and seaside Pomeranian Region in Poland were selected for the research. A team of pollsters contacted representatives of enterprises, mostly personnel of business-economic departments as well as managers and owners of SME. Half of the randomly selected persons received research questionnaires of the typical version, while the other half received the questionnaires in the friendly version. The method was based on the random unlimited sampling of respondents to each group. Every drawn entrepreneur received one questionnaire to be completed by the management staff. Pollsters contacted the enterprises both personally and by phone.

Respondents gave answers to the questions containing issues concerning entrepreneur behavior (i.e. how they would behave in a situation) spontaneously. This type of research is called experimental simulation. They were asked to take a decision as if they were to take a decision alone and immediately, which was a considerable simplification. In actual operation of SME, financial decisions are generally taken as a result of analyses and consultation that may take hours or days. However, it is to be emphasized that decisions whether an instrument or a market opportunity are interesting from the point of view of a firm and are worth dedicating time to are taken quickly. According to observations, if a subject matter is considered to be important for an enterprise, it is usually continued.

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<sup>196</sup> Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211(4481), 453-458.

The similarity of both groups (120 respondents each) was verified with statistical methods. The verified elements included the similarity of structures, distribution covariance, medium and standard deviations, kurtoses and the inclination of distribution. Moreover, the hypothesis of tests (groups) similarity was verified with the Smirnov-Kolmogorov test. The Smirnov-Kolmogorov tests were applied to analyze the similarities of continuous variable distributions characteristic for the respondents, such as age, job seniority and the period of work in finance. They could have been also applied to a changeable “number of employees in an enterprise”, because this number included employed in part time jobs. The tests showed that both groups came from the same population and the differences between the distributions of important properties that characterized respondents were not statistically important. A detailed description of the selection of respondents is given in the 300-page research report entitled *Behavioral Economics of Entrepreneurship Financing*<sup>197</sup>.

The study included a decision problem concerning the use of the option to recognize 150% outlays on R&D in tax costs. The aim of the question was to verify the hypothesis that the higher awareness of benefits and costs of applying an instrument increases the propensity to use it. Within this research, a factor that might discourage entrepreneurs from using the new forms of support could be the concern with the penalization of the former, slightly informal manner of accounting for work. Because in the past it was not possible to recognize R&D expenditures as tax costs, many enterprises classified them as “design costs”, equipment construction works costs etc., to proof that they did not spend money on R&D. When in 2005 the incentive to write 150% expenditure on R&D was introduced, very little number of companies decided to use this incentive.

The decision problem was presented in two forms: a typical version based on present customary procedures of distributing grants and a friendly option, taking account of expectations of program beneficiaries. The decision problem has been presented in a table that includes common parts, differentiating elements and a decision problem (options).

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<sup>197</sup> Kulawczuk, P., & Poszewiecki, A. (2010). *Behavioral Economics of Entrepreneurship Financing*. FRUG, Gdansk, in Polish.



Table 1

**Description of experimental situation**

<b>Name of instrument: RECOGNIZING 150% OUTLAYS ON R&amp;D IN TAX COSTS</b>	
<b>Common elements:</b> The business operates in the modern technology sector. It launches new products every year resulting from improvements and continuous work of its construction-design team. Such measures could be definitely classified as research and development (R&D); however, the business does not do so to avoid problems with the depreciation of outcomes on R&D, which are treated as an investment activity. This year, public authorities have introduced the option to recognize 150% outlays on R&D in tax costs, which is a strong fiscal incentive. The costs of the construction and design team amounted to PLN 600 thousand last year. The business is considering whether to reveal that it is actually involved in research and development or to continue this activity as “operational, construction-design activity”. To use the relief, the business has to be reestablished as R&D and change the booking of outlays into R&D.	
<b>Differentiating elements:</b>	
<b>A. Typical option:</b> After the introduction of changes, the Ministry of Finance does not organize any information campaigns on the new regulations.	<b>B. Friendly option:</b> The Ministry of Finance runs an information campaign on the new possibilities of accounting for outlays on R&D. Moreover, trainings are conducted for personnel of finance departments. Such trainings concern the option to classify R&D. Within its information campaign, the Ministry emphasizes that businesses may keep their previous system of accounting for costs, but the new system will be more favorable for them. The Ministry also provides free consultation for firms that want to use the relief.
<b>Decision options:</b> <u>You can select the following options:</u> a) join the program and reclassify tax costs according to the statutory possibilities b) ignore the offer c) postpone a decision for 3 months d) postpone a decision for 5 year e) postpone a decision for 1 year	

Source: own study

Within the typical option, the Ministry of Finance has amended the laws, however is not involved in their propagation. Businesses are afraid that after they reclassify their operations as R&D, they may expect tax controls, which

could question the former method of classifying R&D. In the second option, the following measures to be taken by the Ministry have been included:

- providing that entrepreneurs may keep the former system of accounting or may move to the new one without any risks,
- an information campaign, or
- free consultation for firms on how to use the relief.

The following table presents obtained decision preferences with regard to the use of the offer given by the Ministry of Finance.

Table 2

**Preferences of small and medium enterprises with regard to the use of a new form of accounting for R&D outlays. Basic analysis.**

A decision taken and auxiliary questions	Number of respondents		Percentage of respondents	
	Typical A	Friendly B	Typical A	Friendly B
YES – a positive decision to “join the program”	37	60	30.8	50.0
NO – a negative decision	44	19	36.7	15.8
To postpone a decision for 3 months	17	16	14.2	13.3
To postpone a decision for S year	10	9	8.3	7.5
To postpone a decision for one year	12	16	10.0	13.3
Was the question clear? YES	90	91	75.0	75.8
Was the question clear? NO	4	5	3.3	4.2
Was the question clear? A LITTLE	26	24	21.7	20.0
Has the enterprise used a similar instrument? YES	0	2	0.0	1.7
Has the enterprise used a similar instrument? NO	120	118	100.0	98.3

Source: own study based on questionnaires

The above results of the research on two comparable groups of respondents indicate that the framing changed into friendly one has increased the tendency to change the method of classifying R&D outlays significantly. It is worth noticing that the difference is substantial and amounts to almost 20 per cent. In the typical option, only 30.8% of respondents were ready to change the way of booking their R&D expenditures. The information campaign concerning the new method of accounting for R&D costs increased this group in the second population to as much as 50%.

In the group covered by the friendly framing the percentage of entities declaring a negative decision amounted to 15.8% vs. 36.7% of entities declaring a negative decision in the group covered by typical conditions. The total of respondents who intended to postpone their decision for 3 or 6 months was similar in both populations.

The comparative study conducted within the behavioral experiment gives grounds for certain conclusions that concern the studied population encompassing two groups of respondents:

1. Executing an information campaign and conducting training for personnel of businesses interested in changing the qualification of the R&D activity result in the higher interest in the new method of accounting by almost 20 per cent.

2. The actions described in the friendly option result in the large fall in negative decisions (the decrease of negative decisions by 56.9%).

3. The higher transparency of measures taken by the Ministry of Finance and the change of the role from the penalizing institution into a supporting one result in the apparent improvement of interest among businesses in the new instrument.

The analysis resulted in the conclusion that the behavior of entities develops under the impact of strong stimulation and restraint mechanisms. The mechanisms produce a specific structure or composition of motives that may change in time. The composition may also develop under the impact of varied factors. Moreover, the author proposed that the propensity to avoid failures is stronger than the unrestrained egoism and it limits severely economic claims of entities towards other people. This approach referred to a certain degree to the issue of risk aversion, a well-known problem in the behavioral finance. However, the weakness of all the above-mentioned approaches stemmed from the lack of direct evidence concerning the reactions of individuals and business entities to the incentives of a financial policy. Even the most sophisticated constructions based on scientific abstraction may be of little importance if they are not supported empirically.

### **Conclusion**

The described experiments indicate that they may play an important role in testing the efficiency of solutions in the budget policy and actions aimed at stimulating SMEs. The behavioural and experimental economics seem to have bright development prospects in the theory of economics.

Experiment number one shows that letters with behavioural framing sent by an unregistered letter have proven effective, regardless of the Voivodeship (area) or type of taxpayer and also by simplifying the method of payment, the better collection of taxes can be achieved (e.g. interest).

Experiment number two shows that using R&D tax allowances is related to the shortage of trust to the conduct of fiscal authorities. Fiscal authorities should carry out an information campaign in this regard. Moreover, they ought to take steps aimed at creating a new approach to taxpayers based on the presumption of good will and honesty of entrepreneurs. The present attitude of many a tax officers to SME is perceived as unfriendly, despite the organized “Friendly Tax Office” competitions. It seems the conduct of tax officers results from the unjustified oppressiveness of tax law, which needs to be amended.

### **3.5. The iso 31000 standard as a model of risk management in organization**

#### **1. The family of the ISO 31000 series**

Just about any business activity involves a certain amount of risk. Successful risk management is an integral part of your organization's strategy and a critical dimension of good governance. This is where you can begin incorporating risk management activities into operations and strategy. Adherence to ISO 31000 will ensure that efforts are consistent with good risk management practice. Support for risk management standards like ISO 31000 demonstrates a commitment to building a risk-focused organization<sup>198</sup>.

Risk management is not new tool and a lot of standards and guidance documents are available (ACT 2004, AZ/NZS 2004, Committee 2004, DGQ 2007, FAA 2007, HB 2004, IEC 2008, ON 2008, Rio Tinto 2007, Treasury Board of Canada 2001). It is an integral component of good management and decision-making at all levels of an organization<sup>199</sup>.

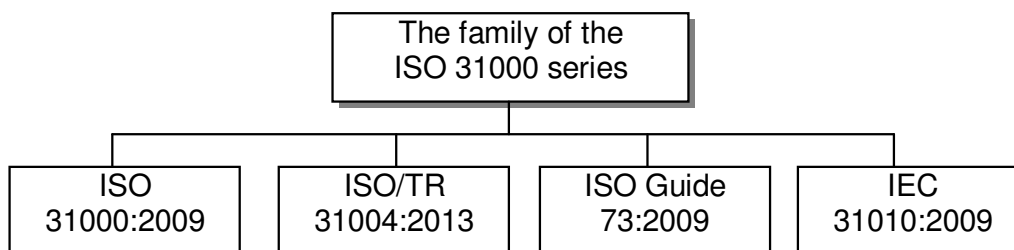
So far, the technical committee ISO / TC 262, which deals with issues related to risk management, have been prepared four documents. These include, ISO 31000:2009, ISO/TR 31004:2013, ISO Guide 73:2009, IEC 31010:2009, as presented in Fig. 1.

Table 1 shows the synthetic characteristics of the family of the ISO 31000 series.

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<sup>198</sup> *Implementing Risk Management under ISO 31000*, A guide for community housing providers, June 2015, available at: <http://www.communityhousing.org.au/HousingMatters/items/Implementing%20Risk%20Management%2031000%20RELEASE.pdf> (accessed: 1.09.2015). – p. 2.

<sup>199</sup> Berg H.P., *Risk management: procedures, methods and experiences*, RT&A # 2(17) (Vol.1) 2010, June, p. 80. available at: [http://ww.gnedenko-forum.org/Journal/2010/022010/RTA\\_2\\_2010-09.pdf](http://ww.gnedenko-forum.org/Journal/2010/022010/RTA_2_2010-09.pdf) (accessed: 02.09.2015). – p. 80.



**Fig. The family of the ISO 31000 series**

Source: own elaboration based on<sup>200</sup>.

Table 1

**Characteristics of the family of the ISO 31000 series**

<b>Norm Attribute</b>	<b>ISO 31000:2009</b>	<b>ISO/TR 31004:2013</b>	<b>ISO Guide 73:2009</b>	<b>IEC 31010:2009</b>
<b>Title</b>	Risk management – Vocabulary	Risk management – Vocabulary	Risk management – Vocabulary	Risk management – Risk assessment techniques
<b>The possibility of certification</b>	Not intended for certification	Not intended for certification	Not intended for certification	Not intended for certification
<b>Purpose and tasks</b>	This International Standard provides principles and generic guidelines on risk management	This Technical Report provides guidance for organizations on managing risk effectively by implementing ISO 31000:2009. It provides: <ul style="list-style-type: none"> <li>▪ a structured approach for organizations to transition their risk management arrangements in order to be consistent with ISO 31000, in a manner tailored</li> </ul>	This Guide provides the definitions of generic terms related to risk management. It aims to encourage a mutual and consistent understanding of, and a coherent approach to, the description of activities relating to the management of risk, and the	This standard is <ul style="list-style-type: none"> <li>▪ supporting standard for ISO 31000 and provides guidance on selection and application of systematic techniques for risk assessment</li> <li>▪ intended to reflect current good practices in selection and utilization of risk assessment techniques, and does not refer to</li> </ul>

<sup>200</sup> <http://www.iso.org> (accessed: 01.09.2015).

*Business Activities in the Conditions of Tax Harmonization*

Norm Attribute	ISO 31000:2009	ISO/TR 31004:2013	ISO Guide 73:2009	IEC 31010:2009
		to the characteristics of the organization; <ul style="list-style-type: none"> <li>▪ an explanation of the underlying concepts of ISO 31000;</li> <li>▪ guidance on aspects of the principles and risk management framework that are described in ISO 31000.</li> </ul>	use of uniform risk management terminology in processes and frameworks dealing with the management of risk.	new or evolving concepts which have not reached a satisfactory level of professional consensus.
<b>Scope</b>	This International Standard can be used by any public, private or community enterprise, association, group or individual. Therefore, this International Standard is not specific to any industry or sector.	This Technical Report is intended to be used by those within organizations who make decisions that impact on achieving its objectives, including those responsible for governance and those who provide organizations with risk management advice and support services. This Technical Report is also intended to be used by anyone interested in risk and its management, including teachers, students, legislators and regulators.	This Guide is intended to be used by: <ul style="list-style-type: none"> <li>▪ those engaged in managing risks,</li> <li>▪ those who are involved in activities of ISO and IEC, and</li> <li>▪ developers of national or sector-specific standards, guides, procedures and codes of practice relating to the management of risk</li> </ul>	This standard is general in nature, so that it may give guidance across many industries and types of system. There may be more specific standards in existence within these industries that establish preferred methodologies and levels of assessment for particular applications. If these standards are in harmony with this standard, the specific standards will generally be sufficient.

Source: own elaboration based on<sup>201</sup>:

<sup>201</sup> <http://www.iso.org> (accessed: 01.09.2015).

## **2. The aims of ISO 31000**

This International Standard<sup>202</sup>:

- a) can be used by any public, private or community enterprise, association, group or individual;
- b) can be applied throughout the life of an organization, and to a wide range of activities, including strategies and decisions, operations, processes, functions, projects, products, services and assets.
- c) can be applied to any type of risk, whatever its nature, whether having positive or negative consequences,
- d) is not specific to any industry or sector.

All activities of an organization involve risk. Organizations manage risk by identifying it, analyzing it and then evaluating whether the risk should be modified by risk treatment in order to satisfy their risk criteria. Throughout this process, they communicate and consult with stakeholders and monitor and review the risk and the controls that are modifying the risk in order to ensure that no further risk treatment is required. This International Standard describes this systematic and logical process in detail<sup>203</sup>.

ISO 31000 has been adopted as a national standard by more than 50 national standards bodies covering over 70 % of the global population. It has also been adopted by a number of UN agencies and national governments as a basis for developing their own risk-related standards and policies, especially in the areas of disaster risk reduction and the management of disaster risk<sup>204</sup>.

When implemented and maintained in accordance with this International Standard, the management of risk enables an organization to, for example:

- increase the likelihood of achieving objectives,
- encourage proactive management,

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<sup>202</sup> PN-ISO 31000:2012 *Zarządzanie ryzykiem – Zasady i wytyczne*, PKN, Warszawa 2012. – p. 14.

<sup>203</sup> PN-ISO 31000:2012 *Zarządzanie ryzykiem – Zasady i wytyczne*, PKN, Warszawa 2012. – p. 8.

<sup>204</sup> [http://www.iso.org/iso/home/news\\_index/news\\_archive/news.htm?Refid=Ref1963](http://www.iso.org/iso/home/news_index/news_archive/news.htm?Refid=Ref1963) (accessed: 01.09.2015).



- be aware of the need to identify and treat risk throughout the organization,
- improve the identification of opportunities and threats,
- comply with relevant legal and regulatory requirements and international norms,
- improve mandatory and voluntary reporting,
- improve governance,
- improve stakeholder confidence and trust,
- establish a reliable basis for decision making and planning,
- improve controls,
- effectively allocate and use resources for risk treatment,
- improve operational effectiveness and efficiency,
- enhance health and safety performance, as well as environmental protection,
- improve loss prevention and incident management,
- minimize losses,
- improve organizational learning,
- improve organizational resilience<sup>205</sup>.

This International Standard is intended to meet the needs of a wide range of stakeholders, including:

- a) those responsible for developing risk management policy within their organization;
- b) those accountable for ensuring that risk is effectively managed within the organization as a whole or within,
  - c) a specific area, project or activity;
  - d) those who need to evaluate an organization's effectiveness in managing risk; and
  - e) developers of standards, guides, procedures and codes of practice that, in whole or in part, set out how risk is to be managed within the specific context of these documents<sup>206</sup>.

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<sup>205</sup> PN-ISO 31000:2012 *Zarządzanie ryzykiem – Zasady i wytyczne*, PKN, Warszawa 2012. – p. 9-10.

ISO 31000 has introduced some important and more pertinent terms to the risk management standard and hence helps in better orchestration and implementation of the process across the organization to yield benefits whilst at the same time controlling the costs and the overall optimization of resources<sup>207</sup>.

### **3. Principles of risk management**

The ISO 31000 standard presented 11 basic principles of risk management. They are the basis of effective risk management. Their detailed characteristics are shown in Table 2.

According to ISO 31000, properly implemented risk management system should:

- create and protect value, and so support the achievement of objectives and increase the efficiency of the organization;
- be an integral part of all organizational processes;
- be an element of making decisions (risk should be one of the criteria hierarchy of goals, projects and tasks, and motivate managers for the presentation of alternative scenarios of events and decisions);
- take into account the uncertainty in the adopted targets, scenarios and risks with them related;
- be implemented in a systematic, structured and timely manner, because it is not a one-time act, but a repetitive process;
- based on the best available information, including historical data, experience, feedback from stakeholders, forecasts, observations, assessments and diverging expert opinions;
- adapt to the specific organization, which means that there is no single effective risk management system; the level of detail of collected information about the risks should be tailored to the complexity of the organizational structure, processes, industry-specific, product, or process of communication with stakeholders;

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<sup>206</sup> PN-ISO 31000:2012 *Zarządzanie ryzykiem – Zasady i wytyczne*, PKN, Warszawa 2012. – p. 10.

<sup>207</sup> <http://www.simplilearn.com/risk-management-cycle-article> (accessed: 01.09.2015).

Table 2

**Principles of risk management in ISO 31000**

No	Principle	Description
1.	Risk management creates and protects value	Risk management contributes to the demonstrable achievement of objectives and improvement of performance in, for example, human health and safety, security, legal and regulatory compliance, public acceptance, environmental protection, product quality, project management, efficiency in operations, governance and reputation.
2.	Risk management is an integral part of all organizational processes	Risk management is not a stand-alone activity that is separate from the main activities and processes of the organization. Risk management is part of the responsibilities of management and an integral part of all organizational processes, including strategic planning and all project and change management processes
3.	Risk management is part of decision making	Risk management helps decision makers make informed choices, prioritize actions and distinguish among alternative courses of action.
4.	Risk management explicitly addresses uncertainty	Risk management explicitly takes account of uncertainty, the nature of that uncertainty, and how it can be addressed
5.	Risk management is systematic, structured and timely	A systematic, timely and structured approach to risk management contributes to efficiency and to consistent, comparable and reliable results.
6.	Risk management is based on the best available information	The inputs to the process of managing risk are based on information sources such as historical data, experience, stakeholder feedback, observation, forecasts and expert judgement. However, decision makers should inform themselves of, and should take into account, any limitations of the data or modelling used or the possibility of divergence among experts.
7.	Risk management is tailored	Risk management is aligned with the organization's external and internal context and risk profile
8.	Risk management takes human and cultural factors into account	Risk management recognizes the capabilities, perceptions and intentions of external and internal people that can facilitate or hinder achievement of the organization's objectives.
9.	Risk management is transparent and inclusive	Appropriate and timely involvement of stakeholders and, in particular, decision makers at all levels of the organization, ensures that risk management remains relevant and up-to-date. Involvement also allows stakeholders to be properly represented and to have their views taken into account in determining risk criteria.
10.	Risk management is dynamic, iterative and responsive to change	Risk management continually senses and responds to change. As external and internal events occur, context and knowledge change, monitoring and review of risks take place, new risks emerge, some change, and others disappear.
11.	Risk management facilitates continual improvement of the organization	Organizations should develop and implement strategies to improve their risk management maturity alongside all other aspects of their organization

Source: own elaboration based on<sup>208</sup>.

<sup>208</sup> PN-ISO 31000:2012 *Zarządzanie ryzykiem – Zasady i wytyczne*, PKN, Warszawa 2012. – p. 26-28.

- take into account the human and cultural factors, bearing in mind that the manifestation of a risk management culture is a situation in which employees can notified information about the risks without fear of the business consequences;
- be transparent and relate to all levels of decision-making in the organization, because adequate to the scope and time limits an engaging stakeholders and decision makers at all levels of the organization guarantees that risk management is adequate and contains updated information about the company's exposure to the risk associated with the achievement of objectives;
- react to changes that may cause a shift in the hierarchy of risk, for example. emergence of new hazard or desactualization parts of them. Depending on the specifics of a given risk and its dynamics, organizations should make long-term decisions and activities increasing resistance to the risk of a strategic nature or short-term and quick actions aimed at relevant and dynamic operational risks;
- facilitate continuous improvement of the organization, because in risk management, as in other management methods, organizations learn, and as a result reach maturity of the mechanisms implemented and process, organizational and business efficiency<sup>209</sup>.

Risk management is a process that is underpinned by a set of principles. Also, it needs to be supported by a structure that is appropriate to the organization and its external environment or context. A successful risk management initiative should be proportionate to the level of risk in the organization (as related to the size, nature and complexity of the organization), aligned with other corporate activities, comprehensive in its scope, embedded into routine activities and dynamic by being responsive to changing circumstances<sup>210</sup>.

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<sup>209</sup> Gasiński T., Pijanowski S., Zarządzanie ryzykiem w procesie zrównoważonego rozwoju biznesu, Warszawa 2011. – p. 34-36.

<sup>210</sup> *A structured approach to Enterprise Risk Management (ERM) and the requirements of ISO 31000*, available at: [https://www.theirm.org/media/886062/ISO3100\\_doc.pdf](https://www.theirm.org/media/886062/ISO3100_doc.pdf) (accessed: 01.09.2015). – p. 6.

#### 4. Components of the ISO 31000 standard

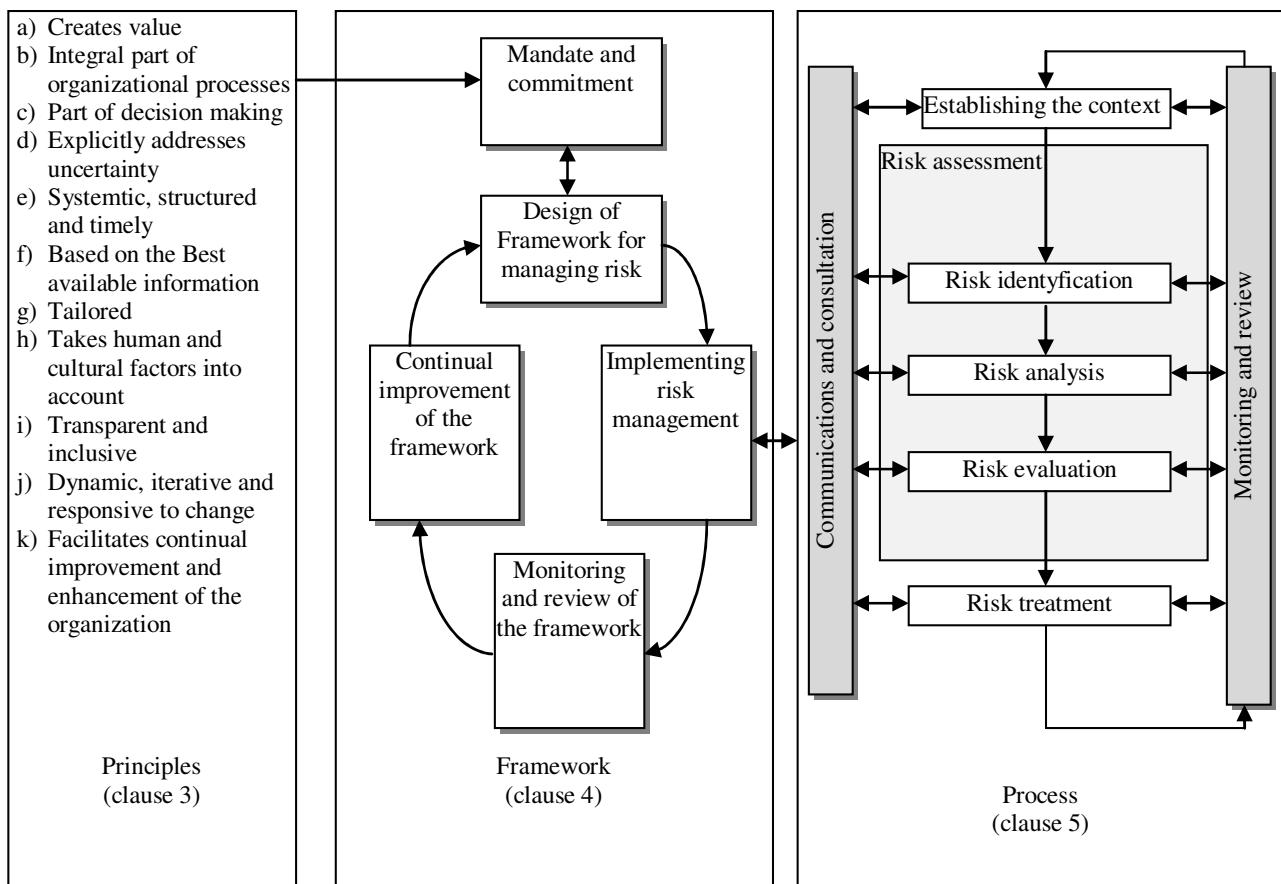
Standard consists of three basic components. These include:

a) principles of risk management (eleven principles of risk management) – clause 3,

b) risk management framework (includes five interrelated components, ie.: design of framework for managing risk, implementing risk management, monitoring and review of the framework, continual improvement of the framework, and mandate and commitment) – clause 4

c) the risk management process, which consists of five processes, ie.: establishing the context, risk identification, risk analysis, risk evaluation, risk treatment) – clause 5

Particular components of the ISO 31000 standard are presented in Fig. 2.

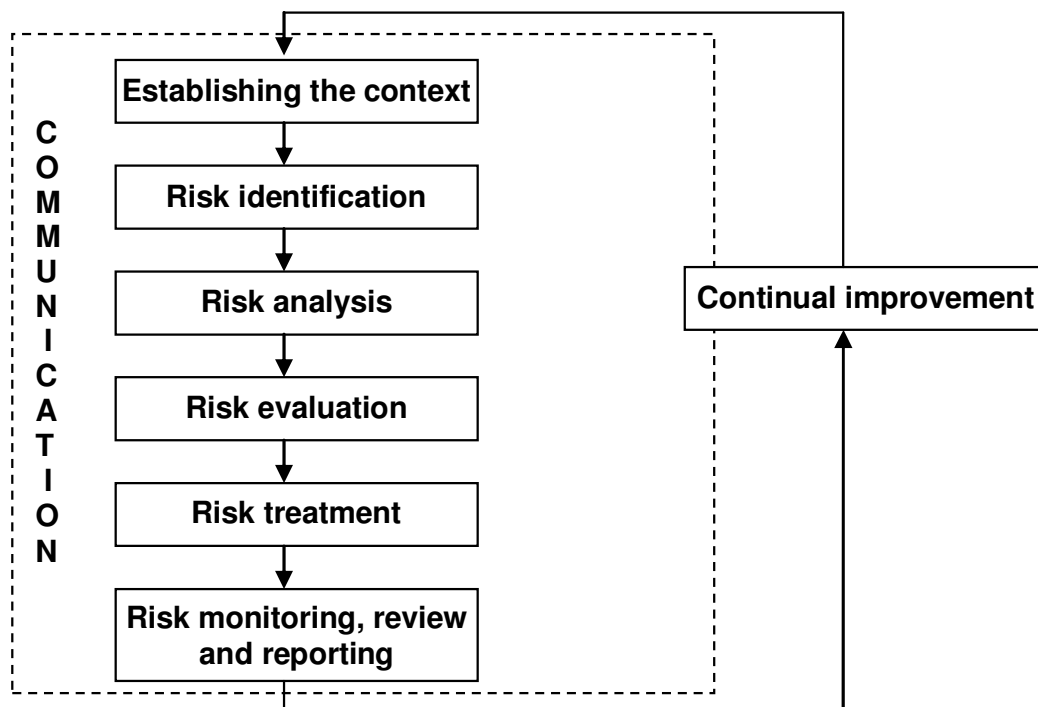


**Fig. 2. Relationships between the risk management principles, framework and process**

Source: PN-ISO 31000:2012 Zarządzanie ryzykiem – Zasady i wytyczne, PKN, Warszawa 2012, p. 12.

The key element of risk management is communication. The key element of risk management is communication. Special attention is paid to this aspect of the ISO 31000 standard, but not only. In the Orange Book published in 2004 by the Treasury Her Majesty pointed out that Communication and learning is not a distinct stage in the management of risk; rather it is something which runs through the whole risk management process<sup>211</sup>.

Author of this study indicated in Fig. 3, a way to communicate the risk management process. Communications should include all components of the risk management process. Communication should provide a full range of information on risk to all levels of management. Transparency in communication should be a key element. The presented model in Fig. 4. is compatible with the approach of continuous improvement.



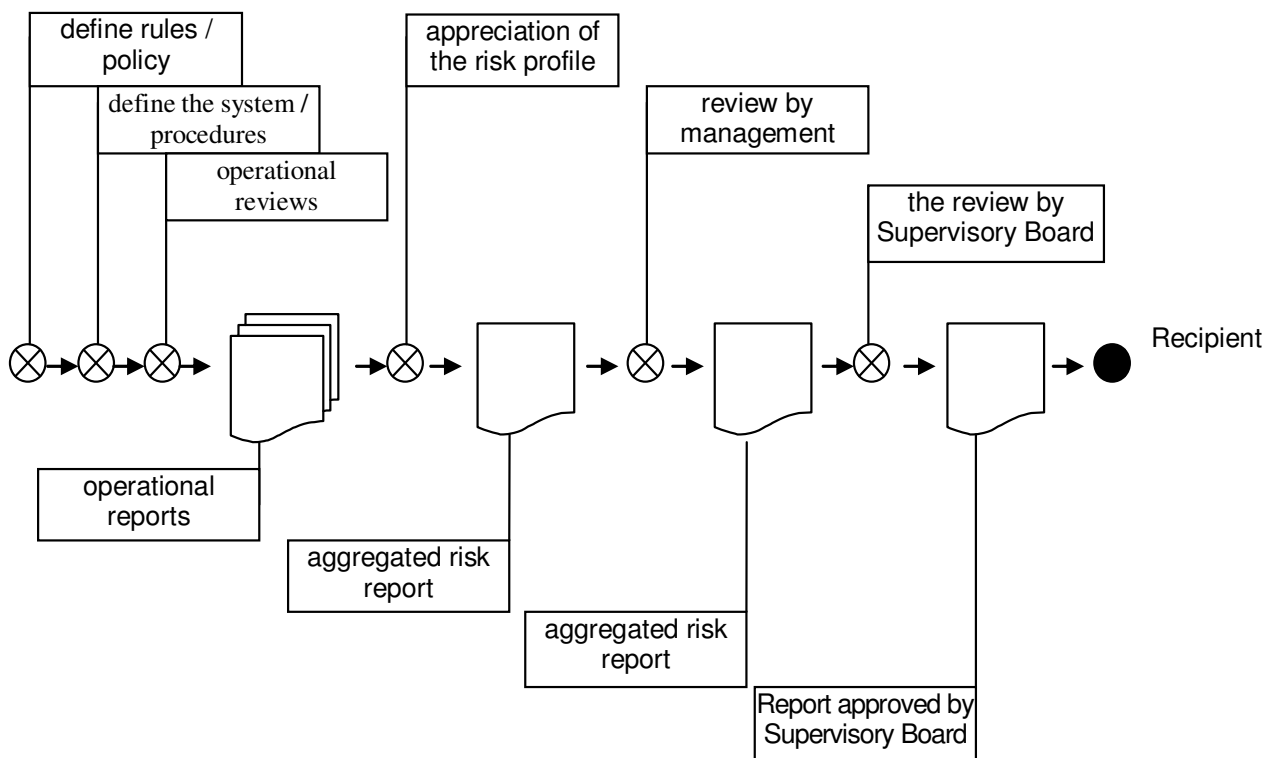
**Fig. 3. Communication in the risk management process**

Source: own elaboration based on<sup>212</sup>.

<sup>211</sup> *The Orange Book, Management of Risk – Principles and Concepts*, HM Treasury, London, 2004. – p. 35.

<sup>212</sup> PN-ISO 31000:2012 *Zarządzanie ryzykiem – Zasady i wytyczne*, PKN, Warszawa 2012. – p. 12.

A special form of communication is reporting. Reporting is an increasingly common way companies communicate with stakeholders. In practice economic there are many types of reports prepared by organizations for different purposes, different aspects of business operations. Process of risk reporting in the organization is shown in Fig. 4.



**Fig. 4. The process of risk reporting in the organization**

Source:<sup>213</sup>.

As indicated in the Fig. 4, before the information about the threat will go to the final recipient – the board and / or the supervisory board, and then to the investor – is many times analyzed and aggregated, which may negatively affect its coherence and objectivity. Its distortion may be due to universal “culture of success” in which talking about possible problems or risks is not well appreciated<sup>214</sup>.

<sup>213</sup> Gasiński T., Pijanowski S., Zarządzanie ryzykiem w procesie zrównoważonego rozwoju biznesu, Warszawa 2011. – p. 51.

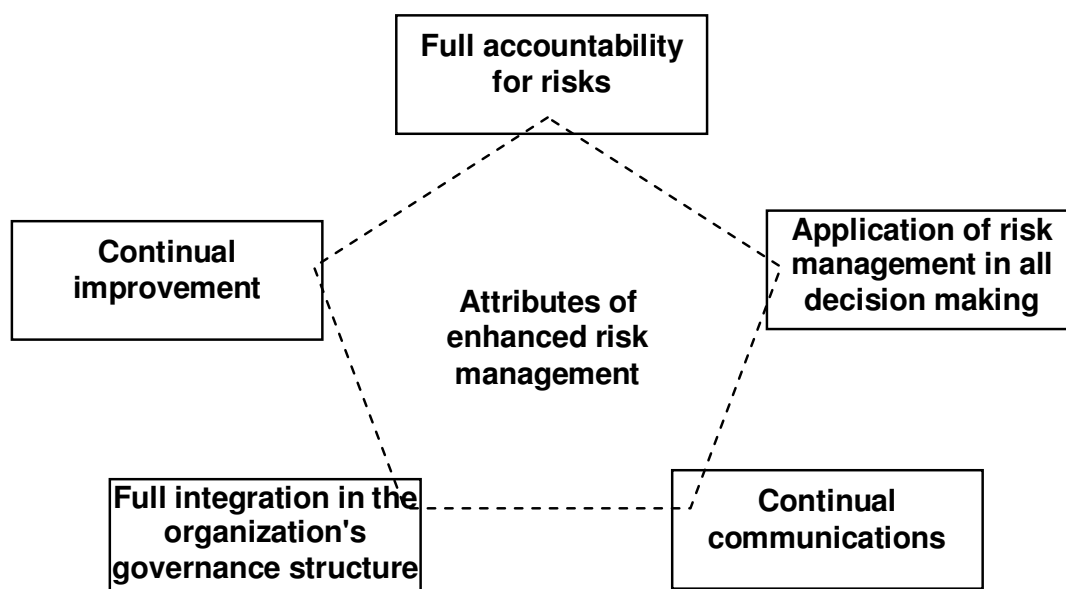
<sup>214</sup> Gasiński T., Pijanowski S., Zarządzanie ryzykiem w procesie zrównoważonego rozwoju biznesu, Warszawa 2011. – p. 51.

### **5. Improving of risk management process**

The ISO 31000 standard recommends, that all organizations should aim at the appropriate level of performance of their risk management framework in line with the criticality of the decisions that are to be made<sup>215</sup>.

The authors of ISO 31000 created a list of attributes which aim to improving the risk management process. The application of these guidelines by organizations may indicate the high awareness of presence of risk and organizational maturity in its identifying, assessing, analyzing and building a mechanized specific risk treatment.

The list of attributes of enhanced risk management shown in Fig. 5.



**Fig. 5. Attributes of enhanced risk management**

Source: own elaboration basing<sup>216</sup>.

In this approach, certain assumptions are important:

1) The organization has a current, correct and comprehensive understanding of its risks

2) The organization's risks are within its risk criteria<sup>217</sup>.

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<sup>215</sup> PN-ISO 31000:2012 *Zarządzanie ryzykiem – Zasady i wytyczne*, PKN, Warszawa 2012. – p. 57-59.

<sup>216</sup> PN-ISO 31000:2012 *Zarządzanie ryzykiem – Zasady i wytyczne*, PKN, Warszawa 2012. – p. 57-59.



Particular attributes can be characterized via the following way<sup>218</sup>:

1) **Continual improvement** – an emphasis is placed on continual improvement in risk management through the setting of organizational performance goals, measurement, review and the subsequent modification of processes, systems, resources, capability and skills

2) **Full accountability for risks** – enhanced risk management includes comprehensive, fully defined and fully accepted accountability for risks, controls and risk treatment tasks. Designated individuals fully accept accountability, are appropriately skilled and have adequate resources to check controls, monitor risks, improve controls and communicate effectively about risks and their management to external and internal stakeholders.

3) **Application of risk management in all decision making** – all decision making within the organization, whatever the level of importance and significance, involves the explicit consideration of risks and the application of risk management to some appropriate degree.

4) **Continual Communications** – enhanced risk management includes continual communications with external and internal stakeholders, including comprehensive and frequent reporting of risk management performance, as part of good governance.

5) **Full integration in the organization's governance structure** – risk management is viewed as central to the organization's management processes, such that risks are considered in terms of effect of uncertainty on objectives. The governance structure and process are based on the management of risk. Effective risk management is regarded by managers as essential for the achievement of the organization's objectives.

### **Conclusion**

Risk management is a mechanism for managing exposure to risk that enables us to recognize the events that may result in unfortunate or damaging consequences the future, their severity, and how they can be

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<sup>217</sup> PN-ISO 31000:2012 *Zarządzanie ryzykiem – Zasady i wytyczne*, PKN, Warszawa 2012. – p. 56.

<sup>218</sup> PN-ISO 31000:2012 *Zarządzanie ryzykiem – Zasady i wytyczne*, PKN, Warszawa 2012. – p. 57-59.

controlled<sup>219</sup>. Risk management supports value creation by enabling the business unit's senior management team to deal effectively with any potential future events that may create uncertainty for the business unit and to respond in a manner that reduces the likelihood of the downside and increases the upside of the business unit's financial performance and reputational image<sup>220</sup>.

ISO 31000 summarizes the key concepts and activities that an organization needs to undertake in order to manage risk effectively, and thus increase its chances of achieving its objectives, comply with relevant legal and regulatory requirements and respond to arising opportunities and threats. It does not define any particular techniques to be used but stresses that the organization should apply risk identification tools and techniques that are suited to its objectives<sup>221</sup>. On the other hand this standard recommends that the risk management process should be an active element of the strategy, planning, management, reporting, principles, values and culture of the organization<sup>222</sup>.

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<sup>219</sup> Dickson G., *Principles of Risk Management*, Quality In Health Care 1995. 4. – p. 75.

<sup>220</sup> Seck-Yong Choo B., Chong-Leng Goh J., (2015), *Pragmatic adaptation of the ISO 31000:2009 enterprise risk management framework in a high-tech organization using Six Sigma*, International Journal of Accounting & Information Management, Vol. 23 Iss 4. – p. 381.

<sup>221</sup> Dallas M., *Management of Risk: Guidance for Practitioners and the international standard on risk management, ISO 31000:2009*, The Stationery Office 2013, p. 3 available at: [http://www.best-management-practice.com/gempdf/Management\\_of\\_Risk\\_Guidance\\_for\\_Practitioners\\_and\\_the\\_International\\_Standard\\_on\\_Risk\\_Management\\_ISO31000\\_2009.pdf](http://www.best-management-practice.com/gempdf/Management_of_Risk_Guidance_for_Practitioners_and_the_International_Standard_on_Risk_Management_ISO31000_2009.pdf) (accessed: 02.09.2015). – p. 3.

<sup>222</sup> Gorzeń-Mitka I., Wieczorek-Kosmala M., *Risk appetite – critical element of enterprise risk management process*, pp. 110, available at: [http://www.ue.katowice.pl/uploads/media/7\\_I.Gorzen-Mitka\\_M.Wieczorek-Kosmala\\_Risk\\_Appetite....pdf](http://www.ue.katowice.pl/uploads/media/7_I.Gorzen-Mitka_M.Wieczorek-Kosmala_Risk_Appetite....pdf) (accessed: 02.09.2015). – p. 110.

## **IV. ECOLOGICAL AND LABOUR PROSPECTS OF FISCAL POLICY REFORM**

### **4.1. Gender and the use of financial development instruments in SMEs behavioural study of entrepreneurship support**

#### ***Introduction***

The problem of the Polish business policy targeted at the development of small and medium enterprises (SMEs) is its diversified efficiency. As a consequence, some of the applied instruments (e.g. subsidies) are used by beneficiaries on a very large scale, while other more complicated forms, including the ones dedicated to supporting innovation, enjoy much less interest among entrepreneurs.

According to the observations of the support instrument market, one of the causes of the above-mentioned situation is the failure to adapt proposed instruments to the characteristics of SMEs, in particular ignoring the behavioural determinants in this group of businesses, including the

behaviours based on another concept of economic rationality (different from the mainstream economics)<sup>223</sup>.

A different perspective of processes that underlie the financial decision-making, as a new research issue, stems from the science of experimental and behavioural economics, initiated by Tversky and Kahnemann<sup>224</sup> and developed in the 1980s. Two out of several important postulates of this alternative approach are as follows: questioning the classically understood rationality of a decision-maker and omitting the profit maximization (utility) as a strict criterion of individual actions<sup>225</sup>. Observing behaviours of entrepreneurs taking financial decisions has led not only to the separation of behavioural stimuli that determine a specific type of behaviour (e.g. framing), but also to creating recommendations on how to form available development instruments to make them an effective means of assistance for SMEs<sup>226</sup>. Moreover, owing to empirical research, it has been possible to show that in Polish conditions choices made by decisions-makers in SMEs in specific conditions may be influenced by personal characteristics such as gender, education, seniority, and age<sup>227</sup>.

The group of behavioural impacts consists of a broad range of differentiated stimuli that refer to such aspects, for example the above-

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<sup>223</sup> P. Kulawczuk, *Koncepcja badania i metodologia zastosowania do oceny wpływu zmian warunków ramowych na skłonność MSP do stosowania instrumentów finansowych*, [in:] P. Kulawczuk, A. Poszewiecki [ed.], *Behavioralne determinanty rozwoju przedsiębiorczości w Polsce. Ekonomia behawioralna finansowania przedsiębiorczości*, Fundacja Rozwoju Uniwersytetu Gdańskiego, Gdańsk 2010, p. 16.

<sup>224</sup> A. Tversky, D. Kahnemann, *The Framing of Decisions and the Psychology of Choice*, "Science", New Series, Vol. 211, No. 4481. (Jan. 30, 1981), pp. 453-458.

<sup>225</sup> T. Zaleśkiewicz, *Ekonomia psychologiczna*, Wydawnictwo Naukowe PWN, Warszawa 2011, p. 41.

<sup>226</sup> J. Zaucha, *Conclusions on experimental simulations concerning SME financial decision making. Recommendations for public policy*, [in:] P. Kulawczuk, A. Poszewiecki, W. Bizon [ed.], *Behavioral Finance of Entrepreneurship. How Can Framing Influence Financial Decisions of Entrepreneurs?*, University of Gdansk, 2011.

<sup>227</sup> W. Bizon, *Propensity to use financial instruments depending on education, gender, age, seniority, and experience in finance*, [in:] P. Kulawczuk, A. Poszewiecki, W. Bizon [ed.], *Behavioral Finance of Entrepreneurship. How Can Framing Influence Financial Decisions of Entrepreneurs?*, University of Gdansk, 2011.

mentioned framing, participation, benefit sharing, collective security, and consulting. It can be expected that some of the personal qualities of decision-makers will contribute to either the acceptance or rejection of specific types of influences, which in turn may aid in the better presentation and tailor-making of instruments offered to support SMEs. As a consequence, such instruments should be offered differently depending on a specific recipient profile.

Having in mind the practical dimension of conducted research analyses, at the Department of Macroeconomics, Faculty of Economics, University of Gdansk, draft research was developed in 2013-15 aimed at separating groups of decision-makers in Pomeranian SMEs who will be susceptible to specific (differentiated) behavioural stimuli. Based on former observations<sup>228</sup>, it was assumed that a sex of a decision-maker should be one of the segmentation criteria. Therefore, it became an initial stage of numerous analyses to show if and to what extent the declared readiness to use financial instruments among decision-makers of small and medium enterprises was related to one of the main personal characteristics, namely gender. An additional challenge was to distinguish the stimuli to which the two groups (women and men) reacted entirely differently and to examine the impact of one type of stimulus in several decision-making situations.

With such objectives, a behavioural experiment was carried out being a part of the above-mentioned broader project in behavioural economics, whose aim was to show the impact of behavioural determinants on decision-taking by SMEs<sup>229</sup>.

### **1. Data**

Responses from 200 persons were analysed, comprising two equal groups, A and B. The questionnaire examined declared behaviours with 16 questions, including one (marked with number 15) dedicated exclusively to women. The questions referred to specific financial products that promote advanced SME support activities. Every question had two versions:

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<sup>228</sup> *Ibidem*, pp. 54-55.

<sup>229</sup> Grant NCN: 2012/07/B/HS4/02990, *Wpływ oddziaływań behawioralnych na przyswajanie instrumentów polityki rozwoju przez małe i średnie przedsiębiorstwa*, University of Gdansk, Faculty of Economics.

1. it reflected an option that was TYPICAL for the current situation in Poland (questions about the promotion of financial instruments were embedded in the contemporary Polish realities), or

2. it was presented in a dimension that took account of a behavioural stimulus impact (so-called IDEAL variant), i.e. reflecting a friendlier manner of promoting the same instruments according to the authors (or, in one case – question 12 – reflecting an option that was explicitly unfriendly and undesirable).

The questionnaires were selected so that every respondent had to consider typical questions and the ones that had an ideal connotation. Owing to this method, the problem of creating the positive or negative attitude of the group through focusing on a specific type of message (typical / ideal) was eliminated. Consequently, it was assumed that any potential differences in results would show the changes of readiness to use an instrument due to the behavioural factors (stimuli, parameters) included in the financial instrument promotion policy.

## ***2. Adopted research method***

Queries used in the questionnaire concerned 16 areas within the SME finance and were characterised by the fact that the possible responses could be presented in a slightly modified 5-level Likert scale after some transformations. The aim of the trial was to find if the change of framing from typical to friendly (ideal) would affect the change of declared readiness to use specific instruments depending on the selected personal characteristics of decision-makers, in this case gender. Therefore, it was analysed how the responses to a typical and ideal option would change for specific sub-groups with the change of a decision-making situation. Hence, an explicit auxiliary question was asked: Do women react to changes of border conditions differently than men?

Due to the distribution of responses, which was far from normal, and the large size of the sample, the Kolmogorov-Smirnov nonparametric statistical test was used as the tool to support the selected part of the analysis.

**3. Behavioural influence and the declared readiness to use financial instruments depending on gender – results**

The most important element of the research was to determine how a change of framing due to the introduction of behavioural influences (i.e. a change from a typical situation to a friendly situation) affected decisions of entrepreneurs (decision-makers). Every change of a decision-making situation resulted from the introduction of a behavioural stimulus of a varied nature and influence strength. The study focused on how the introduction (use) or omission (status quo maintained) of a stimulus would influence the level of the declared readiness to use an instrument. The behavioural parameters with their attributed decision-making issues (questions) have been presented collectively in Table 1.

Table 1

**Behavioural stimuli used in redefining a decision-making situation**

Type of stimuli	Number of a decision-making situation (question number)
participation	1, 2
a clear and transparent concept of benefit sharing	3
providing complete financial and accounting data by SMEs in return for the faster access to financial instruments	4
framing: determining the maximum level of own contribution	5
framing: aversion to risk (related to the limitation of the bond issue)	6
collective security – the sense of belonging to a group	7, 15
better access to information, training, and promotion	8, 10
consulting	9, 11, 13, 14, 16
obligatory limitations	12

Source: own study.

The analysis was carried out with significance tests, if reasonable. A starting point for generalization was the average analysis. Moreover, every research topic (presented by consecutive questions included in the questionnaire) was subjected to much more precise measurements.

It has been proven that the statistically significant influence of gender (even with the application of a relatively “soft” nonparametric test) on the type of reaction to a change of a decision-making situation in a group of women occurs in one case (item 4 – online credit vs. the typical increase of an overdraft; a behavioural stimulus “providing complete financial-accounting data by SMEs in return for the faster access to financial instruments”). In the case of male respondents, the statistically significant change is apparent also in one case (item 3 – a tax development loan vs. an ordinary investment loan with 50% repayment redemption; a behavioural stimulus: “a clear and transparent concept of benefit sharing”).

Tables 2 and 3 present a detailed revision of statistics for women and men respectively. The statistically significant results (Kolmogorov-Smirnov test,  $p < 0.05$ ) have been underlined; and the results higher for each pair of obtained answers in consecutive decision-making situations (questions) have been made bold.

Table 2

**Reaction of women to a change of a decision-making situation in the tested issues**

Tested topic	p	Average TYPICAL	Average IDEAL	Deviation TYPICAL	Deviation IDEAL
1	$p > .10$	3,316667	<b>3,525424</b>	1,489985	1,535285
2	$p > .10$	2,866667	<b>3,135593</b>	1,651570	1,726643
3	$p < .10$	<b>4,533333</b>	3,847458	0,769474	1,349503
4	<u><math>p &lt; .025</math></u>	<b>3,966667</b>	3,203390	1,495379	1,648193
5	$p > .10$	<b>2,661017</b>	2,000000	1,806217	1,583816
6	$p > .10$	3,745763	<b>3,833333</b>	1,687614	1,699119
7	$p > .10$	3,694915	<b>3,750000</b>	1,773893	1,743025
8	$p > .10$	<b>3,830508</b>	3,700000	1,652089	1,710387
9	$p > .10$	<b>4,271186</b>	4,250000	1,257125	1,525212
10	$p > .10$	<b>3,583333</b>	3,389831	1,768765	1,712197
11	$p < .10$	3,288136	<b>4,133333</b>	1,752347	1,431683
12*	$p > .10$	3,733333	<b>3,389831</b>	1,645401	1,702098
13	$p > .10$	2,949153	<b>3,066667</b>	1,794856	1,812075
14	$p > .10$	3,305085	<b>3,716667</b>	1,773893	1,627014
15	$p > .10$	3,881356	<b>4,416667</b>	1,692628	1,369048
16	$p > .10$	3,033898	<b>3,200000</b>	1,780799	1,848499

Source: own study.

\* A negative stimuli.



Table 3

**Reaction of men to a change of a decision-making situation  
in the tested issues**

Tested topic	p	Average TYPICAL	Average IDEAL	Deviation TYPICAL	Deviation IDEAL
1	p > .10	3,288889	<b>3,804348</b>	1,408129	1,469990
2	p > .10	2,733333	<b>3,369565</b>	1,776104	1,691268
3	p < .01	<b>4,511111</b>	3,391304	0,815259	1,541691
4	p > .10	<b>3,800000</b>	3,565217	1,645932	1,721139
5	p > .10	2,108696	<b>2,955556</b>	1,676349	1,845825
6	p > .10	<b>3,956522</b>	3,600000	1,645958	1,710927
7	p > .10	3,543478	<b>3,622222</b>	1,822166	1,748881
8	p > .10	<b>3,956522</b>	3,911111	1,459932	1,578581
9	p > .10	<b>4,630435</b>	4,488889	0,927570	1,179796
10	p > .10	3,688889	<b>3,869565</b>	1,716527	1,720577
11	p > .10	3,782609	<b>3,822222</b>	1,590430	1,696104
12*	p > .10	<b>3,933333</b>	4,086957	1,528517	1,395645
13	p > .10	2,956522	<b>3,333333</b>	1,725064	1,732051
14	p > .10	3,478261	<b>3,622222</b>	1,747877	1,709451
15		n.a.			
16	p > .10	2,956522	<b>3,777778</b>	1,861380	1,636083

Source: own study.

\* A negative stimuli.

3.1. A joint investment vs. a venture capital investment (as an example of the introduction of a behavioural stimulus into the offer in the form of participation)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	21,67	18,64	↓	20,00	17,39	↓
(2) delay by one year	6,67	10,17	↑	4,44	0,00	↓
(3) delay by half a year	16,67	8,47	↓	24,44	13,04	↓
(4) delay by 3 months	28,33	25,42	↓	28,89	23,91	↓
(5) make the contract	26,67	37,28	↑	22,22	45,65	↑

Among women, a change of a decision-making situation contributed to the increase by 11 percentage points of the respondents willing to make the

contract (from 27 to 38 per cent), with the simultaneous fall in the share of those who declared they would withdraw from the contract (from 22 to 19 per cent). The higher percentage of women ready to make the contract resulted also from the lower share of female respondents who were undecided and wanted to postpone the decision in a typical situation.

Among male respondents, a decision-making situation led to similar consequences. The percentage of those willing to make a contract increased from 22 to 46 per cent, accompanied by the fall of respondents declaring they would withdraw from the contract (from 20 to 17 per cent).

On average, in the typical variant the value of 3.32 was obtained among women, while in the ideal variant this figure was at 3.53 (growth by 0.21); in the male respondent group, the outcome was at 3.29 and 3.80 respectively (increase by 0.51). The results are not statistically significant.

The most important finding: in case of a joint investment vs. the venture capital investment, the change of a decision-making situation owing to the introduction of a behavioural stimulus into the offer in the form of participation (activities carried out together with a public investment fund) results in very similar positive changes (with reference to the readiness to participate – the use of a tool), both among women and men.

3.2. Public seed capital (joint investment) vs. venture seed capital (as an example of introducing a behavioural stimulus in the form of participation into the offer)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	40,00	32,20	↓	46,67	30,44	↓
(2) delay by one year	1,77	10,17	↑	2,22	0,00	↓
(3) delay by half a year	10,00	3,39	↓	11,11	8,70	↓
(4) delay by 3 months	28,33	20,34	↓	11,11	23,91	↑
(5) make the contract	20,00	33,90	↑	28,89	36,96	↑

Among female respondents, the change of a decision-making situation contributed to the increased share of women ready to make the contract by 14 per cent (from 20 to 34 per cent), with the simultaneous drop in the share

of those who intended to withdraw from the contract (from 40 to 32 per cent). The higher percentage of respondents ready to make the contract resulted also from the lower share of those who were undecided and wanted to postpone a decision by a shorter of available terms in a typical situation.

In the group of male respondents, the change of a decision-making situation had similar consequences, although the increase of those willing to make a contract was not so visible – their share increased from 29 to 37 per cent. On the other hand, the fall of persons declaring their withdrawal from the use of the tool was more prominent than among female respondents (from 37 to 30 per cent).

On average, the figure obtained among women in a typical variant was 2.87 and in the typical variant 3.14 (increase by 0.27); in the male group of respondents, the figure was at 2.73 and 3.67 respectively (growth by 0.94). The results are not statistically significant.

The most important finding: in case of the seed capital (a joint investment) vs. venture seed capital, the change of a decision-making situation due to the introduction of a behavioural stimulus (participation) into the offer results in the significant growth in the number of persons ready to make a contract among female respondents, with the more visible fall in the number of persons who want to withdrawn from the contract among men. On average, the more visible positive (stronger) changes were noted among men. In general, it can be concluded that the impact is fairly positive both on women and men.

3.3. A tax development loan vs. an ordinary investment loan with 50% repayment redemption (as an example of introducing a behavioural stimulus in the form of a clear and transparent concept of benefit sharing into the offer)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	0,00	10,17	↑	0,00	21,74	↑
(2) delay by one year	3,33	10,17	↑	4,44	8,70	↑
(3) delay by half a year	6,67	6,78	↑	6,67	8,70	↑
(4) delay by 3 months	23,33	30,51	↑	22,22	30,43	↑
(5) make the contract	66,67	42,37	↓	66,67	30,43	↓

Among women, a change of a decision-making situation from a typical to an ideal one led to the very significant fall of female respondents willing to make the contract (from 67 to 42 per cent). At the same time, the size of the group who wanted to withdraw from the contract increased (from 0 to 10 per cent).

In the male group of respondents, a substantial fall was apparent of those interested in making the contract (from 67 to 30 per cent), alike among women, with the simultaneous marked increase of those declaring their withdrawal (from 0 to 22 per cent).

On average, a very high value of 4.54 was achieved in the typical variant among women, and 3.85 in the ideal variant (fall by 0.69); among men, the figure was at 4.51 and 3.91 respectively (decrease by 0.6). The result was statistically significant for men ( $p < 0.01$ ).

The most important finding: in the case of a basic development loan vs. an ordinary investment loan with the 50% repayment redemption, a change of a decision-making situation involving the introduction of a clear and transparent concept of profit sharing into the offer affected equally negatively the decisions of men and women; however, for men the dependence was statistically significant.

3.4. An online loan vs. a typical increase of overdraft (as an example of introducing into an offer a behavioural stimulus in the form of a proposal to provide complete financial and accounting data by SME in return for the faster access to financial instruments)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	15,00	30,51	↑	22,22	28,26	↑
(2) delay by one year	5,00	3,39	↓	2,22	0,00	↓
(3) delay by half a year	6,67	11,86	↑	4,44	6,52	↑
(4) delay by 3 months	15,00	23,73	↑	15,56	17,39	↑
(5) make the contract	58,33	30,51	↓	55,56	47,83	↓

In the female group a change of a decision-making situation from a typical to ideal, alike in the previous case, led to the very marked fall in the

number of respondents declaring their readiness to make a contract (from 58 to 31 per cent). At the same time, the share of women who wanted to withdraw from the contract increased (from less than 15 to 31 per cent). As a consequence, the share of women ready to make the contract and those who intended to withdraw in the ideal variant were equal.

In the group of male respondents, the share of those interested in making the contract fell substantially (from 56 to 48 per cent), although not as clearly as among women. The number of respondents not willing to make the contract increased as well (from 22 to 28 per cent).

In general, the average value achieved among women in the typical variant was 3.97 and 3.20 in the typical one (fall by 0.77); among men, the figure was at 3.80 and 3.57 respectively (fall by 0.23). The result among women is statistically significant ( $p < 0.025$ ).

The most important finding: in case of an online loan vs. a typical increase of overdraft, a change of a decision-making situation involving the introduction into the offer of the proposal to provide access to complete financial-accounting data by SMEs in return for the faster access to financial instruments had an equal negative influence on decisions taken by men and women; however, the dependence was stronger and statistically significant in the female group of respondents.

3.5. An auction for an own contribution with subsidies for development projects in SMEs (as an example of introducing a behavioural stimulus into an offer in the form of framing – a set maximum threshold of own contribution)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	52,54	70,00	↑	67,39	44,44	↓
(2) delay by one year	0,00	0,00		2,17	2,22	↑
(3) delay by half a year	1,69	3,33	↑	0,00	0,00	
(4) delay by 3 months	20,34	13,33	↓	13,04	20,00	↑
(5) make the contract	25,42	13,33	↓	17,39	33,33	↑

Among female respondents, the change of a decision-making situation meant the fall in the share of those willing to make the contract by 12 per cent (from 25 to 13), with the marked simultaneous increase of those who declared their withdrawal from the contract (from 53 to 70 per cent). At the same time, the share of women who were not certain or decided to postpone a decision in a typical situation decreased slightly.

On the other hand, in the group of male respondents a positive reaction was recorded. The percentage of respondents declaring their willingness to make the contract increased (from 17 to 33 per cent), while the share of respondents withdrawing from the contract fell substantially (from 67 to 44 per cent).

The average result in the typical variant among women amounted to 2.66 and 2.00 in the ideal variant (decrease by 0.66); for male respondents, the figure was at 2.11 and 2.96 respectively (increase by 0.85). That outcome proves a positive reaction to the introduction of a behavioural stimulus only among men. The results are not statistically significant.

The most important finding: in the case of an auction for an own contribution with a subsidy for SME development projects, a change of a decision-making situation involving the introduction of a behavioural stimulus in the form of framing into the offer (in this case understood as a set maximum threshold of own contribution) results in the overwhelmingly negative reaction among women and a highly positive reaction among men.

3.6. Long-term development bonds of SMEs as a substitute of an investment loan (as an example of introducing a behavioural stimulus into the offer in the form of framing: aversion to risk – related to the limitation of bond issue)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	23,73	23,33	↓	21,74	22,22	↑
(2) delay by one year	3,39	3,33	↓	0,00	11,11	↑
(3) delay by half a year	3,39	1,67	↓	4,35	4,44	↑
(4) delay by 3 months	13,56	10,00	↓	8,70	8,89	↑
(5) make the contract	55,93	61,67	↑	65,22	53,33	↓

In the female group, a change of a decision-making situation from a typical to an ideal one resulted in the higher percentage of respondents who declared their readiness to make the contract (from 56 to 62 per cent). The share of respondents who wanted to withdraw from the contract remained on a similar level, while the percentage of undecided women fell slightly.

The opposite situation was recorded among male respondents. The introduction of the behavioural stimulus (framing) reduced the share of those who wanted to make the contract from 65 to 53 per cent, while the group of men who declared their withdrawal from the contract increased.

In general, the average value among women in the typical variant was at 3.75 and 3.83 in the ideal variant (increase by 0.08); among men, the outcome was at 3.96 and 3.60 respectively (fall by 0.36). The results are not statistically significant.

The most important finding: in case of long-term development bonds for SMEs as the substitute of an investment loan, a change of a decision-making situation that involved the introduction into an offer of a behavioural stimulus in the form of framing (in this case understood as the aversion to risk related to the limitation of the bond issue), had a positive impact on decisions taken by women and affected decisions taken by men negatively.

3.7. A development-building fund for SMEs with the public support as the replacement of an investment loan (as an example of introducing a behavioural stimulus into the offer in the form of collective security – the sense of belonging to a group)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	27,12	26,67	↓	32,61	26,67	↓
(2) delay by one year	3,39	1,67	↓	0,00	4,44	↑
(3) delay by half a year	1,69	0,00	↓	0,00	2,22	↑
(4) delay by 3 months	8,47	13,33	↑	15,22	13,33	↓
(5) make the contract	59,32	58,33	↓	52,17	53,33	↑

Among women, the introduction of the behavioural stimulus contributed to the slight fall in the share of those who wanted to make the contract (from 59 to 58 per cent), followed by the insignificant fall of those who declared they would withdraw from the contract. On the other hand, the percentage of women who intended to postpone a decision by 3 months increased.

Among men, alike for women, the modification of the situation did not cause any material changes. The share of respondents ready to make the contract grew modestly (from 52 to 53 per cent), while the number of those declaring their withdrawal fell slightly (from 33 to 27 per cent).

On average, in the typical variant 3.69 was obtained among women, and 3.75 in the ideal variant (increase by 0.06); among men, the outcome was at 3.54 and 3.62 accordingly (growth by 0.08). The results are not statistically significant.

The most important finding: in case of the development-building fund for SMEs with public support as a substitute for an investment loan, a change of a decision-making situation in the form of introducing a behavioural stimulus – a collective security– into the offer, that is the sense of belonging to a group, resulted in a marginal change both among women and men. Therefore, the impact of this stimulus is neutral on both groups.

3.8. Cost sharing when entering foreign markets (as an example of introducing a behavioural stimulus in the form of emphasising the IT support and the custom-made and detailed training plans)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	23,73	25,00	↑	15,22	20,00	↑
(2) delay by one year	0,00	3,33	↑	2,17	2,22	↑
(3) delay by half a year	1,69	3,33	↑	8,70	0,00	↓
(4) delay by 3 months	18,64	13,33	↓	19,57	22,22	↑
(5) make the contract	55,93	55,00	↓	54,35	55,56	↑

In the female group, the change of a decision-making situation from a typical into an ideal one led to the minimum fall in the percentage of



respondents ready to make the contract (from 56 to 55 per cent). On the other hand, the number of those who wanted to withdraw from the contract remained on a similar level (24 vs. 25 per cent).

A similar situation occurred in the male group of respondents. The introduction of the behavioural stimulus resulted in the slight increase in the percentage of those willing to execute the contract from 54 to 56 per cent, while the number of men declaring their withdrawal from the contract increased (from 15 to 20 per cent).

In general, in the typical variant an average figure in the female group was at 3.83, and 3.70 in the ideal version (fall by 0.13); among men, the result was at 3.96 and 3.91 respectively (fall by 0.05). The results are not statistically significant.

The most important finding: as regards cost sharing in entering new foreign markets, a change of a decision-making situation that involves the introduction of a behavioural stimulus into the offer, namely emphasising the IT support and custom-made and detailed training plans, had a positive impact on the number of respondents ready to make the contract among men. As the number of respondents willing to withdraw from the contract (in both groups) increased simultaneously, the impact of this stimulus has to be recognised as close to neutral.

3.9. Systemic support for employment in R+D at SMEs (as an example of introducing a behavioural stimulus into the offer in the form of free-of-charge consulting about a new support instrument)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	8,47	16,67	↑	4,35	6,67	↑
(2) delay by one year	3,39	1,67	↓	0,00	4,44	↑
(3) delay by half a year	6,78	0,00	↓	4,35	2,22	↓
(4) delay by 3 months	15,25	3,33	↓	10,87	6,67	↓
(5) make the contract	66,10	78,33	↑	80,43	80,00	↓

Among women, the change of a decision-making situation meant the increase of the number of respondents willing to make the contract by 12 per

cent (from 66 to 78). That change was accompanied by the substantial growth in the number of female respondents declaring their withdrawal from the contract (from 8 to 17 per cent). At the same time, the percentage of women who were undecided or willing to postpone a decision in a typical situation decreased significantly.

Among men, a minimum negative reaction was recorded. The percentage of respondents who declared making the contract dropped (from 80.4 to 80 per cent), while the number of persons withdrawing from the contract increased slightly. At the same time, the percentage of undecided respondents decreased (in the options concerning the shortest periods of postponing the decision-making process).

On average, the result obtained in the typical variant among women was at 4.27, and 4.25 in the ideal version (fall by 0.02); among men, the figure was at 4.63 and 4.49 accordingly (decrease by 0.14). That outcome shows a neutral reaction to the use of the behavioural stimulus. The results are not statistically significant.

The most important finding: with respect to the systemic support for employment in the R+D sector at SMEs, the change of a decision-making situation that involved the introduction into the offer of a behavioural stimulus, namely free-of-charge consulting on the new support instrument, resulted in the higher percentage of women ready to make the contract, and the increase in the tendency not to make the transaction in both groups.

3.10. Support of shared services in clusters (as an example of introducing behavioural stimuli into the offer in the form of better access to information, training, and promotion)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	28,33	28,81	↑	24,44	23,91	↓
(2) delay by one year	1,67	5,08	↑	4,44	2,17	↓
(3) delay by half a year	8,33	5,08	↓	4,44	2,17	↓
(4) delay by 3 months	6,67	20,34	↑	11,11	6,52	↓
(5) make the contract	55,00	40,68	↓	55,56	65,22	↑

Among women, the change of a decision-making situation resulted in the fall by 14 per cent in the number of respondents willing to make the contract (from 55 to 41 per cent). The share of women who declared their resignation from the contract remained practically the same at about 28.5 per cent. However, the percentage of female respondents who hesitated and decided to postpone a decision by 3 months in a typical situation increased considerably (from 7 to 20 per cent).

On the other hand, in the male group a positive reaction was recorded. The percentage of those declaring their willingness to make the contract increased (from 56 to 65 per cent), while the percentage of respondents withdrawing from the contract fell slightly. The share of men who hesitated fell.

In general, considering the reaction to the applied behavioural stimulus, 3.58 was achieved among women in the typical variant and 3.39 in the ideal one (fall by 0.19); among men, the result was at 3.69 and 3.87 respectively (increase by 0.18). This change proves the positive reaction to the introduction of a behavioural stimulus only among men. The results are not statistically significant.

The most important finding: as regards the support of shared services in clusters, a change of a decision-taking situation involving the introduction of a behavioural stimulus into the offer in the form of better access to information, training, and promotion, results in a clearly negative reaction among women and the apparently positive reaction among male respondents.

3.11. A loan with a surety and consulting vs. a typical loan guaranteed by BGK (the Bank of Domestic Economy) from a commercial bank (as an example of introducing a behavioural stimulus into the offer in the form of consulting)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	32,20	15,00	↓	21,74	22,22	↑
(2) delay by one year	3,39	0,00	↓	2,17	4,44	↑
(3) delay by half a year	8,47	5,00	↓	0,00	4,44	↑
(4) delay by 3 months	15,25	16,67	↑	28,26	6,67	↓
(5) make the contract	40,68	63,33	↑	47,83	62,22	↑

Among women, the change of a decision-making situation contributed to the increase by 22 percentage points of women willing to make the contract (from 41 to 63 per cent), while the share of those who declared their withdrawal from the contract fell markedly (from 32 to 15 per cent).

In the group of male respondents, the change of the decision-making situation led to similar consequences, namely the share of respondents ready to make the contract increased from 48 to 62 per cent. On the other hand, the number of respondents declaring their resignation remained on a similar level (about 22 per cent).

On average, the result obtained in the typical variant among women was at 3.29, while in the ideal version it was at 4.13 (increase by 0.84); among men, the figure was at 3.78 and 3.82 respectively (increase by 0.04). The results are not statistically significant.

The most important finding: as regards a loan with a surety and consulting vs. a typical loan from a commercial bank guaranteed by BGK, the change of a decision-making situation, namely the introduction of a behavioural stimulus into the offer in the form of consulting, resulted in very similar and positive (with respect to the readiness to participate) changes both among men and women.

3.12. A development organic loan to promote systematic saving (as an example of introducing a negative behavioural stimulus into the offer in the form of obligatory limitations – the obligation to allocate the loan to investments)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	21,67	25,42	↑	13,33	13,34	↑
(2) delay by one year	5,00	10,17	↑	11,11	0,00	↓
(3) delay by half a year	5,00	8,47	↑	4,44	13,34	↑
(4) delay by 3 months	15,00	11,86	↓	11,11	13,34	↑
(5) make the contract	53,33	44,08	↓	59,00	60,87	↑

A negative stimulus was applied to the tested instrument with the change of a decision-making situation. It means that the positive results will imply the reduction of the readiness to use the instrument.

In the light of the above reservations, it can be noted that for women the change of the decision-making situation means the decrease in the number of respondents ready to make the contract by 9 percentage points (from 53 to 44), which is a desirable result and has a positive overtone. The share of women who declared the resignation from the contract increased slightly (from 22 to 25 per cent), which is also positive in this case. Moreover, the percentage of female respondents who wanted to postpone the contract for the longest of the proposed periods increased as well.

On the other hand, in the group of male respondents there was a slight increase of those declaring the conclusion of the contract (from 59 to 61 per cent), while the percentage of those resigning from the contract remained on the same level, which is to be assessed as a neutral impact of the behavioural stimulus.

In general, in reaction to the applied behavioural stimulus women achieved 3.73 in the typical variant and 3.39 in the undesirable variant (drop by 0.34). That change shows a slight but positive reaction (in the light of the assumptions made in this item). Among men, the result was at 3.93 and 4.09 respectively (the growth by 0.16). The change shows a slightly negative reaction to the introduction of the behavioural stimulus (for the specified assumptions). The results are not statistically significant.

The most important finding: in case of a development organic loan promoting systematic saving, the change of a decision-making situation reflected in the introduction of a NEGATIVE behavioural stimulus into the offer in the form of obligatory limitations (the necessity to allocate the loan to investments) results in the desirable reaction among women (the expected lower willingness to make the contract), while in the male group the reaction is slightly negative or neutral.

3.13. Consulting about effectiveness – releasing the excessive liquidity preference of SMEs (as an example of introducing a behavioural stimulus into the offer in the form of consulting)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	40,68	40,00	↓	39,13	31,11	↓
(2) delay by one year	3,39	0,00	↓	0,00	2,22	↑
(3) delay by half a year	11,86	11,67	↓	17,39	8,89	↓
(4) delay by 3 months	8,47	10,00	↑	13,04	17,18	↑
(5) make the contract	35,59	38,33	↑	30,43	40,00	↑

Among female respondents, the change of the decision-making situation contributed to a slight increase (by 2 percentage points) of the percentage of those declaring the readiness to make the contract (from 36 to 38 per cent), while the decrease of those who wanted to withdraw from the contract was minimum (from 41 to 40 per cent).

Among men, the change of the decision-making situation led to the more explicit positive consequences. The share of respondents ready to make the contract rose from 30 to 40 per cent, while the number of those declaring their resignation fell (from 39 to 31 per cent).

On average, the result for women in the typical variant amounted to 2.95, while in the ideal variant it was at 3.07 (increase by 0.12); among men, the figure was at 2.96 and 3.33 respectively (growth by 0.37). The results are not statistically significant.

The most important finding: in case of consulting on effectiveness – releasing the excessive liquidity preference among SMEs, the change of the decision-making situation in the form of introducing a behavioural stimulus (consulting) into the offer, results in the apparently positive change among men and no change among women.

3.14. Support in launching a company on the stock exchange (IPO) (as an example of introducing a behavioural stimulus (multi-criteria consulting) into the offer)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	32,20	23,33	↓	28,26	24,44	↓
(2) delay by one year	5,08	1,67	↓	6,52	6,67	↑
(3) delay by half a year	5,08	3,33	↓	0,00	2,22	↑
(4) delay by 3 months	15,25	23,33	↑	19,57	15,56	↓
(5) make the contract	42,37	48,33	↑	45,65	51,11	↑

Among women, the change of a decision-making situation from a typical to an ideal one led to the increase in the percentage of persons declaring their readiness to make the contract (from 42 to 48 per cent). Moreover, there was a marked decrease of the group that wanted to resign from the contract (32 vs. 23).

A similar situation occurred among male respondents. The introduction of a behavioural stimulus led to the higher share of respondents willing to make the contract, rising from 46 to 51 per cent, while the number of men declaring their withdrawal from the contract fell (from 28 to 24 per cent).

In general, in the typical variant the average result for women was 3.31 and 3.72 in the ideal version (growth by 0.40); for men, the figure was at 3.48 and 3.62 respectively (increase by 0.14). The results are not statistically significant.

The most important finding: as regards the support in IPO, a change of a decision-making situation involving the introduction of a behavioural symptom into the offer, namely multi-criteria consulting, had a clear positive impact on decisions taken by women and men alike.

3.15. Loan-consulting programme “Enterprising Woman” (as an example of introducing a behavioural stimulus into the offer in the form of a support and mentoring group – collective security and risk mitigation) – a question exclusively to women

	WOMEN			MEN		
	typical	ideal		n.a.		
(1) withdraw from the contract	22,03	13,33	↓			
(2) delay by one year	5,08	0,00	↓			
(3) delay by half a year	0,00	0,00				
(4) delay by 3 months	8,47	5,00	↓			
(5) make the contract	64,41	81,67	↑			

The question concerned the programme dedicated exclusively to women; therefore, no responses from men can be analysed. According to data, a change of the decision-making situation contributed to the major

increase in the percentage of women willing to make the contract (from 64 to 82 per cent), which means the growth by 18 percentage points. Moreover, there was an apparent fall in the share of women who were undecided or not willing to make the contract.

The average figure obtained in the typical version was 3.88 and 4.42 in the ideal version (growth by 0.54). The results are not statistically significant.

The most important finding: with respect to the loan-consulting programme “Enterprising Woman”, a change of a decision-making situation, namely the introduction of a behavioural stimulus in the form of a support and mentoring group (understood as collective security and risk elimination) causes very strong and positive changes among women.

3.16. Capitalization of the public venture capital fund (as an example of introducing a behavioural stimulus in the form of consulting into the offer)

	WOMEN			MEN		
	typical	ideal		typical	ideal	
(1) withdraw from the contract	38,98	36,67	↓	45,65	22,22	↓
(2) delay by one year	3,39	3,33	↓	0,00	2,22	↑
(3) delay by half a year	6,78	10,00	↑	2,17	4,44	↑
(4) delay by 3 months	16,95	3,33	↓	17,39	17,78	↑
(5) make the contract	33,90	46,67	↑	34,78	53,33	↑

For women, a change of a decision-making situation resulted in the increase by 13 percentage points in the number of respondents ready to make the contract (from 34 to 47 per cent), while the share of those declaring their resignation from the contract fell slightly (from 39 to 37 per cent). Moreover, the percentage of undecided women and those who wanted to postpone a decision by 3 months in a typical situation increased notably.

A positive reaction was recorded in the male group as well. The percentage of respondents ready to make the contract increased significantly (from 35 to 53 per cent), while the number of persons withdrawing from the contract fell markedly (from 46 to 22 per cent). The percentage of undecided respondents remained on similar levels.



On average, in the typical variant among women the result was achieved at 3.30, and 3.20 in the ideal variant (growth by 0.17); among men, the figure was at 2.96 and 3.78 respectively (increase by 0.82). That result shows the reaction to the introduction of a behavioural stimulus both among women and men. The results are not statistically significant.

The most important finding: in the case of the capitalization with a public venture capital fund, a change of a decision-making situation, namely the introduction of a behavioural stimulus into the offer in the form of consulting, results in a positive reaction in both groups (stronger among men).

#### **4. Summary and collective findings**

To answer a question whether and to what extent a change of a decision-making situation affects the readiness to take advantage of a financial instrument depending on the gender of a decision-maker, table 4 presents collective data from the study of Pomeranian SMEs. Specific decision-making situations have been indicated together with a type of an applied stimulus. The observed changes have been presented with regard to the declared level of the immediate use of an instrument together with a difference between the average level of accepting an instrument (i.e. before and after the implementation of a stimulus). Moreover, a five-level general scale of change assessment has been given as a finding of the study. The last column is a synthetic summary of differences noted due to the sex of respondents.

The analysis of the general assessment of changes among gender groups based on the table may provide an answer to the question if and in what direction a change of a decision-making situation affects the readiness to use a financial instrument. It has been noted that strongly positive or positive reactions among women occurred eight times (and considering the question dedicated only to women – nine times). Such reactions occurred eight times also among men. Moreover, among female respondents negative or strongly negative reactions occurred four times (three times among men).

According to the above data, both among women and men a very strong positive reaction was recorded to a behavioural stimulus, namely the guarantee of participation. With regard to decision-making situations that

tested the application of a stimulus called “consulting”, the reactions of women and men were markedly positive as well. Among women, positive reactions were shown after the introduction of framing in the form of aversion to risk and the negation to imposed obligatory limitations (a reverse stimulus). In addition, a strong positive reaction took place in one case due to the change involving the introduction of collective security (the sense of belonging to a group); in the second case, the same stimulus did not trigger any changes among women. On the other hand, positive reactions among men were associated with the introduction of framing defined by the determination of the maximum threshold for an own contribution as well as a stimulus (in one of two cases) related to the better access to information, training, and promotion.

Neutral reactions among women were visible in situations where the following stimuli were used: “collective security (the sense of belonging to a group)” and “better access to information, training, and promotion” (and once in case of consulting). This fact is interesting because in other decision-making situations, where the first two parameters were included, reactions were distinctly different (in the first one strongly positive and in the second one strongly negative). Among men, there were no visible changes (a neutral reaction) due to the introduction of stimuli such as “collective security” (alike in the female group), “better access to information”, “consulting”, and “obligatory limitations – the necessity to allocate a credit to investments”.

Negative reactions due to the introduction of behavioural stimuli in the female group were recorded in four cases, namely: “a clear and transparent concept of benefit sharing”, “providing complete financial-accounting data by SMEs in return for faster access to financial instruments”, “framing: determining a maximum threshold for own contribution”, and “better access to information, training, and promotion”. Interestingly, women reacted negatively more often than men, who rejected (alike women) stimuli described as “a clear and transparent concept of benefit sharing” (a strongly negative reaction) and “providing complete financial-accounting data by SMEs in return for faster access to financial instruments” as well as “framing: aversion to risk (related to the limitation of the bond issue)” – negative reactions.

Table 4

**Collective assessment of reactions to the applied behavioural stimuli among women and men**

Question number and instrument name / behavioural stimulus *	Change of a declared level of immediate use of an instrument		Average level of instrument acceptance (before / after the introduction of a stimulus)		General assessment of changes (strongly positive / positive / neutral / negative / strongly negative)		Reaction of women vs. reaction of men (markedly different / different / similar / the same)
	women	men	women	men	women	men	
1. Joint investment vs. venture capital / participation	+ 11	+ 24	+ 0,21	+ 0,51	positive	strongly positive	similar (but more strongly positive among men)
2. Public seed capital (joint investment) vs. venture seed capital / participation	+ 15	+ 8	+ 0,27	+ 0,94	strongly positive	strongly positive	the same
3. A tax development loan vs. an ordinary investment loan with 50% repayment redemption / a clear and transparent concept of benefit sharing	- 25	- 37	- 0,69	- 0,60	strongly negative	strongly negative	the same
4. An online credit vs. a typical increase of overdraft / providing complete financial-accounting data by SME in return for the faster access to financial instruments	- 27	- 8	- 0,77	- 0,23	strongly negative	negative	similar (but more strongly negative among women)
<b>5. An auction of own contribution with subsidies for SME development projects / framing: a set maximum own contribution threshold</b>	- 12	+ 16	- 0,66	+ 0,85	strongly negative	strongly positive	<b>markedly different</b>
<b>6. Long-term development bonds for SMEs as a substitute for an investment loan / framing: aversion to risk (related to the limitation of bond issue)</b>	+ 6	- 12	+ 0,08	- 0,36	positive	negative	<b>different</b>
7. A development-construction fund for SMEs with public support as the substitute for an investment loan / collective security – a sense of belonging to a group	- 1	+ 1	+ 0,06	+ 0,08	neutral	neutral	the same

Question number and instrument name / behavioural stimulus *	Change of a declared level of immediate use of an instrument		Average level of instrument acceptance (before / after the introduction of a stimulus)		General assessment of changes (strongly positive / positive / neutral / negative / strongly negative)		Reaction of women vs. reaction of men (markedly different / similar / the same)
	women	men	women	men	women	men	
8. Cost sharing when entering new foreign markets / better access to information, training and promotion	- 1	+ 2	- 0,13	- 0,05	neutral	neutral	the same
9. Systemic support of employment in R+D at SMEs / consulting	+ 12	0	- 0,02	- 0,14	positive	neutral	similar (but more strongly positive among women)
<b>10. Shared service support in clusters / better access to information, training and promotion</b>	- 14	+ 9	- 0,19	+ 0,18	strongly negative	positive	<b>different</b>
11. A loan with a surety and consulting vs. a typical loan guaranteed by BGK from a commercial bank / consulting	+ 22	+ 14	+ 0,84	+ 0,04	strongly positive	strongly positive	the same
12. A development limited loan that supports systematic saving / obligatory limitations **	- 9	+ 2	- 0,34	+ 0,16	positive**	neutral**	similar (but more strongly positive among women)**
13. Consulting on efficiency – releasing excessive liquidity preferences of SMEs / consulting	+ 2	+ 10	+ 0,12	+ 0,37	neutral	positive	similar (but more strongly positive among men)
14. Support in IPO / consulting	+ 6	+ 5	+ 0,40	+ 0,14	positive	positive	the same
15. Loan / consulting programme “Enterprising Woman” / collective security – the sense of belonging to a group	+ 18	n.a.	+ 0,54	n.a.	strongly positive	not applicable	not applicable
16. Capitalization from the public venture capital fund / consulting	+ 13	+ 18	+ 0,17	+ 0,82	positive	strongly positive	similar (but more strongly positive among men)

Source: own study.

\* reactions of women and men that followed different directions are bolded

\*\* the use of a negative stimulus (resulting in the change of a decision-making situation into highly undesirable) has been taken into account in the change assessment

The comparison of reactions among women and men to each of the analysed decision-making situations leads to more interesting findings. In six out of fifteen cases, the reactions were the same, in six they were similar, and only in three the reactions differed (including only one markedly different reaction). This fact shows that the responses are only slightly differentiated due to the sex of respondents; nevertheless, the analysis for the instruments where the reactions were significantly different should be deepened.

Altogether different reactions to framing among women and men were recorded: the determination of the maximum limit of an own contribution – there was a strong negative reaction among female respondents while the response of men was highly positive. In another situation where framing was included (aversion to risk), women reacted positively to changes of a decision-making situation (men reacted negatively). As regards the stimulus “better access to information, training, and promotion”, in one situation women reacted fairly positively and men positively (in another situation analysed for this parameter, the impact of the stimulus was neutral in both groups).

It can be expected that only the multiple analyses of specific stimuli used in a more complete range of decision-taking situations will make it possible to describe in more detail the effects of changes and assessments of differences between a typical and ideal situation. Therefore, it can be recommended that in the further research a specific selected stimulus should be focused on (e.g. the question of strengthening the role of promotion or one of the framing types – the most ambiguous of the analysed areas); at the same time, the decisions of respondents to the proposed numerous other financial instruments (with the same stimulus) should be studied. Only then, by repeating the study in this manner, will it be possible to obtain a more complete description of causes and effects of different reactions (if any) to the change of a decision-making situation due to a specific parameter.

## **4.2. Environmentally related taxes in accordance with eurostat methodology**

### ***Introduction***

The presented study discusses taxes which, in accordance with the criteria specified by the Statistical Office of the European Communities – Eurostat, can be qualified as environmentally related taxes. Eurostat, in cooperation with the national statistical offices of the European Union Member States, is currently conducting their cataloguing based on a uniform methodology developed specifically for the needs of the European Environmental Accounts (EEEA), representing satellite accounts in relation to the European System of Accounts (ESA) and the System of National Accounts (SNA).

The national accounts / European accounts remain one of the basic analytical tools used by economists in the times of globalization. They present a relatively comprehensive picture of particular national economies. They remain coherent in terms of concepts and classification in the cross-section of particular national public statistics and therefore they offer an opportunity to conduct extensive international comparative analyses. The comparable data, covering from several to several dozens of years, facilitate observing long-term phenomena occurring in economy, society and ecosystems, as well as capturing crucial tendencies<sup>230</sup>.

The initial attempts aimed at including the natural environmental related aspects to national economic accounts were undertaken in the 90s of the 20<sup>th</sup> century. In 1933 the UNO concept – the System of Integrated Environmental and Economic Accounts (SEEA) was extended by the understanding of

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<sup>230</sup> Lada K., *Znaczenie rachunków narodowych w analizach ekonomicznych [w:] Rachunki narodowe. Wybrane problemy i przykłady zastosowań*, pod red. M. Plicha, GUS, Warszawa 2006. – p. 27.

assets, narrowed down in the standard accounts to economic assets, allowing to record the assets remaining “unowned” and referred to as environmental assets. A year later Eurostat developed a manual: “European System for the Collection of Economic Information on the Environment (SERIEE)”. It resulted from adopting the sustainable development strategy by the European Union, i.e. the development featuring the process of economic and social policy integration along with maintaining natural balance and the sustainability of basic natural processes in order to provide opportunities for meeting the needs of current and future generations<sup>231</sup>. The economic environmental accounts illustrate the interactions occurring between economy and environment. They are also used to monitor the pressure exerted by economy on environment, as well as environmental inputs in economy.

Pursuant to the Regulation in force (EU) No 538/2014 of the European Parliament and the Council of 16<sup>th</sup> April 2014 amending the Regulation (EU) No 691/2011 on European environmental economic accounts<sup>232</sup> the accounts should be covered by the national public statistics in the following areas:

- air emissions;
- environmentally related taxes;
- general economic accounts of material flows;
- environment protection related expenditure;
- physical energy flows.

The purpose of the article is to present the essence of environmentally related taxes and to place them in the national systems of public levies and their classification in line with Eurostat methodology. The defined objective will be met by means of the subject literature review and the method of critical analysis covering the relevant EU legal acts.

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<sup>231</sup> Skowrońska A., *Rola polityki logistycznej państwa we wdrażaniu zrównoważonego rozwoju*, Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław 2009. – p. 24.

<sup>232</sup> Regulation (EU) No 538/2014 of the European Parliament and the Council of 16 April 2014 amending Regulation (EU) No 691/2011 on European environmental economic accounts (Text with EEA relevance), OJ L. – p. 3.

### **1. The essence of environmentally related taxes and their position in national systems of public levies**

The subject literature discussing both theoretical and practical problems of public levies (taxes, charges, customs duties, etc.) paid to the State and local authorities remains significantly extensive and diversified. Starting from the 80s of the 20<sup>th</sup> century its increasing part is covered by studies and analyses discussing public levies recognized as environmentally related ones. At least two basic reasons of this state of the matter can be identified. The first one should be related to the confirmed empirically low economic efficiency of direct impact instruments in terms of natural environment protection, including the legislative and administrative instruments aimed at administrative regulation of methods to use the environmental resources and advantages, supported by penalties. Legislative and administrative instruments cover injunctions (e.g. the injunction to shut down an enterprise as a result of its adverse environmental impacts) and bans (e.g. ban on starting up a burdensome technological line without adequate protective facilities); operational and regulatory permits (e.g. the permit for groundwater consumption); ecological parameters of production, techniques and manufacturing technologies.

Low economic efficiency of legislative and administrative parameters resulted in an increased interest in indirect impact instruments, related to environment protection, used in all the European Union Member States. Their impact consists in creating economic incentives and information transferred by means of market mechanisms. These signals focus the activities of natural environment users (households, enterprises, public entities) on the goals included in the national environmental policy<sup>233</sup>. Among indirect impact instruments the following, among others, are listed: taxes, product charges, insurance, tradeable emission permits, however, the crucial significance is still assigned to taxes and charges (public levies), despite the increasing importance of tradeable greenhouse gasses emission permits in the EU environmental policy and its Member States. In accordance with Eurostat estimates the share of environmentally related fiscal burden GDP in the EU in

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<sup>233</sup> Poskrobko B., Poskrobko T., *Zarządzanie środowiskiem w Polsce*, Polskie Wydawnictwo Ekonomiczne, Warszawa 2012. – p. 136.



2012 amounted to 2,6% (decrease by 0,2% against 2002)<sup>234</sup>. The highest share of the discussed burden in GDP was recorded in Denmark (3,9%), Slovenia (3,8%), Holland (3,6%), Croatia (3,2%) and Malta (3,0%).

The second crucial reason behind the emergence of numerous new studies and analyses related to public levies in terms of natural environment should be related to the concept of the so-called environmental tax reform (ETR) which was implemented at the beginning of the 90s of the 20<sup>th</sup> century. Its basic objective was to shift the tax burden from work and/or capital into environmentally detrimental activities (resulting in its pollution and ineffective usage of non-renewable resources) along with preserving fiscal neutrality of the tax system<sup>235</sup>. Its proponents proclaim the thesis of the so-called double dividend: environmental one, related to the internalization of environmental external costs, which in a long-term perspective should result in improved environmental quality, and economic one, related e.g. to higher employment, investments, incentives for innovation<sup>236</sup>. Several EU countries (Denmark, Germany, Italy, Holland, Austria, Sweden, Finland and Great Britain) initiated ETR implementation, which on the one hand revealed numerous distribution, economic (lower competitiveness of economy) and political<sup>237</sup> problems, whereas on the other caused increased demand for reliable analyses of its effects and costs based on reliable public statistics facilitating dynamic and international analyses, primarily in terms of tax systems structure.

Adopting the Regulation (EU) No 691 of the European Parliament and the Council of 6 July 2011 on *European environmental economic accounts* (Text with EEA relevance)<sup>238</sup> was the response to such demand, which defined e.g. the concept of environmentally related taxes and committed the

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<sup>234</sup> *Taxations trends in the European Union*. Eurostat, 2014. – p. 39.

<sup>235</sup> Kudelko M., Pękala E., *Ekologiczna reforma podatkowa – wyzwania i ograniczenia*, “Problemy Ekologii”, vol.12 no 1, 2008. – p. 5.

<sup>236</sup> Patuell R.I., Nijkamp P., Pels E., *Environmental tax reform and the double dividend: A meta-analytical performance assessment*. “Ecological Economics”, No 55, 2005. – p. 565.

<sup>237</sup> Clinch J.P., Dunne L., Dresner S., *Environmental and wider implications of political impediments to environmental tax reform*, “Energy Policy”, No 34, 2006. – p. 960.

<sup>238</sup> Regulation (EU) No 691/2011 of the European Parliament and the Council of 6 July on *European environmental economic accounts* (Text with EEA relevance), OJ L 192, 22.7.2011.

EU Member States to collect data about the receivables resulting from these taxes and transferring them to Eurostat in an adequate technical format and in accordance with the relevant procedure. It also provided the possibility for some EU Member States to be granted exemptions from data transfer deadlines to the extent in which the national statistics systems require considerable preparatory work related to identifying public levies existing in their fiscal systems, which meet the criteria defining the environmentally related tax. It should be emphasized that, in general, public levy systems of particular countries are autonomously established by their legislative authorities and not always comply with the public finance doctrine in force. It brings about the situation in which a given charge, functioning within the framework of a particular fiscal system, in fact, represents a tax. A reverse situation can also take place<sup>239</sup>. Therefore, for the needs of the European public statistics the entire national public levy systems had to be analyzed in terms of identifying those which, firstly, meet tax definition criteria and secondly, can be covered by the environmentally related taxes.

Pursuant to ESA'95 tax is defined as an obligatory and unavoidable payment in cash or other form, imposed by the government of a given country, local authorities or the European Union institutions<sup>240</sup>. This definition is consistent, in principle, with the doctrine of public finance, however, ESA'95 methodology introduced some clarifications. Hence, a tax is not intended to provide a service rendered for a taxpayer by the State, its institutions or the European Union. A tax should not be specified proportionally, i.e. based on the rate related to the quantity of the delivered service. If at least one of the above-mentioned conditions is met (formulated using negation!), then a particular type of levy is identified as tax. The discussed methodology adopts the accrual principle, therefore it refers to the tax due, resulting from the tax liability.

The environmentally related taxes are defined in the Regulation 691/2011. It reads as follows: "...environmentally related tax means a tax

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<sup>239</sup> Będziaszak M., *Opłaty jako źródło finansowania wybranych zadań publicznych – istota i konsekwencje wykorzystania*. Studia i prace Kolegium Zarządzania i Finansów, Zeszyt Naukowy SGH w Warszawie, Warszawa 2014. – p. 8.

<sup>240</sup> Council Regulation (EC) No 2223/96 of 25 June 1996 *on the European system of national and regional accounts in Community*, OJ L 310, 30.10.1996. – p. 116.

whose tax base is a physical unit (or a proxy of a physical unit) of something that has a proven, specific negative impact on the environment, and which is identified in ESA 95 as a tax". The quoted definition is primarily focused on tax base and emphasizes the negative impact of tax base on the environment resulting in environment pollution, depletion of natural resources and other forms of environment quality deterioration.

The Eurostat methodology, developed for the needs of statistical framework<sup>241</sup>, determines the type of tax base to be considered in case of environmentally related taxes. The following tax base categories are identified:

- measured or estimated air emissions;
- ozone layer depleting substances;
- planned or estimated volume of sewage discharged into water;
- non-point sources of water pollution;
- collected waste;
- noise;
- energy products;
- transport;
- natural resources.

In accordance with Eurostat methodology value added taxes (VAT) were excluded from the definition. The criteria qualifying public levy as environmentally related tax are presented in table 1.

Table 1

**The criteria qualifying public levy as environmentally related tax**

The criterion for tax	The criterion for environmentally related taxes
At least one of the conditions defined for taxes has to be met.	Environmentally related tax has to be documented as detrimental for the natural environment and calculated per physical unit of negative impact or its specifically defined substitute.

Source: author's compilation based on Eurostat resources

<sup>241</sup> *Environmental taxes. A statistical guide.* Eurostat, Luxemburg 2013. – p. 12-13.

The methodology developed by Eurostat to identify environmentally related taxes is different from the solutions applied in various statistical presentations of national range, and also from OECD publications, where the so-called environmentally related taxes (environmental taxes) represent almost all commitments and payments (taxes, charges, customs duties and other receivables), which are either directly or indirectly related with the natural environment and its resources<sup>242</sup>. As J. Śleszyński emphasizes, it is not entirely clear why the research for statistical purposes does not cover tax revenues originating from positive environmentally oriented activities (e.g. the revenues from corporate income tax of environmental engineering). If such revenues were also covered by statistical information, then the environmentally related taxes would not present just the cash inflows from environment management in terms of sustainable development<sup>243</sup>.

## **2. Classification of environmentally related taxes**

Pursuant to the Regulation No 691/2011<sup>244</sup> the EU Member States were obliged to develop the environmentally related tax statistics covering the following components:

- energy taxes;
- transport taxes;
- pollution taxes;
- resources taxes.

Three of these components appeared for the first time in the edition of Eurostat publication entitled: *“Structures of the taxation systems in the European Union”* from 2004 (since 2007 this cyclically issued publication appears under the changed title: *“Taxation trends in the European Union”*). The direct reason for Eurostat’s attempts to estimate tax in the abovementioned range was

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<sup>242</sup> OECD approach is explained in e.g. the publication entitled: *The Political Economy of Environmentally Related Taxes*, OECD, 2006

<sup>243</sup> Śleszyński J., *Podatki środowiskowe i podział na grupy podatków według metodyki Eurostatu*, Optimum. “Studia Ekonomiczne”, No 3(69), 2014. – p. 57.

<sup>244</sup> Regulation (EU) No 691/2011 of the European Parliament and the Council of 6 July *on European environmental economic accounts* (Text with EEA relevance), OJ L 192, 22.7.2011. – p. 10.

making the decision about performing ETR by some EU Member States. The existing range of observations regarding tax receivables (on consumption, work, capital) in terms of their economic and social functions was extended by the natural environment. In 2006 the resources taxes were also covered by the systematics of environmentally related taxes.

It should be emphasized that till the announcement of the Regulation No 691/2011 a uniform methodology for environmentally related taxes division into the above-mentioned four subgroups did not exist. Moreover, these subgroups did not function in the official national statistics. The Regulation imposed the development of such methodology on both Eurostat and national statistical offices carrying out the pioneering work consisting in in-depth analysis of the functioning public levies and qualifying them firstly, as environmentally related taxes and secondly, as one of four tax groups. These tasks are not easy having considered the functioning of environmentally related public levies abundance in national systems (taxes, charges, customs duties). For example, over 79 of them were inventoried in Poland. The second reason refers to the shortcomings of Eurostat methodology itself, whereas the third one is related to political factors.

Attention should be paid to the fact that a precise definition of tax base for environmentally related taxes does not exist. A list was developed, within the framework of ESA'95, which presents objects of taxation for these taxes. It was used for the purposes of Eurostat methodology. The methodology defines only the type of tax base to be taken into account. Following this base Eurostat separated the environmentally related tax categories in line with the general criteria shown in table 2.

The methodological difficulties result e.g. from the fact that it is not always possible to assign clearly the existing taxes to the distinguished above tax groups. For example, the excise duties recorded in Poland cover an extensive part of taxes on: resources, semi-finished goods, products which can, but do not have to be used as fuel. This presents a problem for the decision-making body: what to do in the situation when the object of taxation can remain both, an energy product and a raw material for further processing, unrelated to energy generation? Another problem is the absence of an indication in Eurostat methodology whether the environmentally related tax account should cover customs duties on products having detrimental impact on the environment outside a given country borders.

Table 2

**The classification of environmentally related taxes**

<b>Environmentally related taxes</b>			
energy taxes	transport taxes	pollution taxes	resources taxes
<ul style="list-style-type: none"> <li>- taxes on energy: fuel oil, natural gas, coal, electricity;</li> <li>- taxes on energy products used in transport: gasoline, diesel;</li> <li>- taxes on carbon dioxide emissions.</li> </ul>	<ul style="list-style-type: none"> <li>- taxes related to the possession and usage of motor vehicles;</li> <li>- taxes on other means of transport such as aircraft and ships;</li> <li>- taxes associated with transport services (e.g. charters).</li> </ul>	<ul style="list-style-type: none"> <li>- taxes related to measured and expected pollution discharged in the air and water (except for carbon dioxide);</li> <li>- taxes related to solid waste management and noise.</li> </ul>	<ul style="list-style-type: none"> <li>- taxes on the exploited natural resources (e.g. mining tax, water consumption tax, tax on the usage of forests);</li> <li>- tax exemptions cover oil and natural gas and also land usage.</li> </ul>

Source: author’s compilation based on Eurostat resources

On the other hand, political factors or social debates focusing on the genetically modified organisms resulted in the fact that public levies arising from GMO release into the environment were not considered as tax on “biological pollution” of natural environment, which reduces the account of environmentally related taxes.

**Conclusion**

The identification of all environmentally related national taxes, in accordance with the methodology adopted by Eurostat, is of pioneering nature in the European Union Member States, since no one so far has claimed to pay attention to the construction of taxes from the perspective of the detrimental nature of the object of taxation. The existence and extent of environmental relations were not even taken into account while constructing the majority of taxes. The “tax oriented” module of the European economic accounts related to the environment, even in its “imperfect” form will definitely be of crucial significance for redefining the European and national environmental policy goals in terms of their economic effectiveness and efficiency.

## **4.3. Financing environmental protection in Poland**

### ***1. The system of financing environmental protection in Poland***

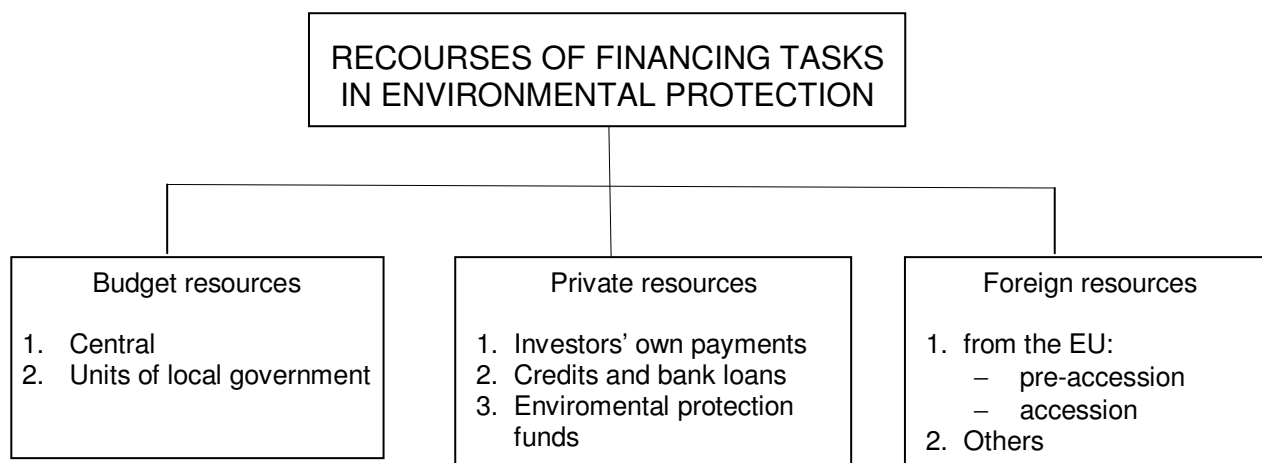
The system of financing environmental protection is an integral part of the financial system of the state. It is a set of rules and regulations defining the modalities and procedures for collection and redistribution of funds to environment related projects. The system was created and shaped before Poland's integration with the European Union (EU) and was based on a different philosophy and sources of law<sup>245</sup>. The EU rules are characterised by a more technological approach obliging users to absolute respect for environmental product standards and emissions. In the Polish law on the contrary, the activities of environmental protection are rather focused upon the environmental effects<sup>246</sup>. Financing of environmental protection includes current expenditures and environmental protection services as well as the financing of environmental investments<sup>247</sup>. Funding of the environment can be performed by using multiple instruments and institutions. Among them, such as sources of financing of tasks, as well as for investment purposes and current operations for the protection of the environment, three should be distinguished: budgetary, private and foreign. The sources of financing tasks in the field of environmental protection are shown in Figure 1.

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<sup>245</sup> Poskrobko B., Ejdyś J., 2005, *System ochrony środowiska w Polsce*, w: B. Kozłowska (red), *Instrumenty polityki ekologicznej*, Polska Akademia Nauk, oddz. w Łodzi, Łódź, s. 100.

<sup>246</sup> Poskrobko B., Poskrobko T., 2012, *Zarządzanie środowiskiem w Polsce*, PWE, Warszawa, s.119-120.

<sup>247</sup> Małachowski K., 2007, *Gospodarka a środowisko i ekologia*, CeDeWu, Warszawa, s. 80-87.



**Fig. 1. Sources of financing tasks in the field of environmental protection**

Source: Own compilation

Budget resources shall be understood as own financial resources of states, provinces, districts and municipalities. The extent of budgetary resources of the state is determined annually by the budget act (OJ. 2015 item. 153). Budget expenditures are scattered in different parts and sections of the budget, in the system of ministries and central offices, through central government investment projects financed from earmarked grants and for own tasks of municipalities and others<sup>248</sup>. The state budget finances the activities of environmental protection also indirectly, by providing subsidies to municipalities, through the use of tax deductions and exemptions to business entities and individuals, if of course they take up the tasks of environmental protection<sup>249</sup>.

To private sources of financing the tasks in the field of environmental protection belong: own means of investors i.e. entrepreneurs or individuals, which comes from two sources: cash flows or loans – in as far as they are given preference by the Bank of Environmental Protection (BOŚ), National Economy Bank (BGK) and commercial banks. A specific source of funding for

<sup>248</sup> Wyzińska-Ludian J., *Źródła finansowania ekorozwoju*, w: J. Zalewa (red.), *Ekonomiczno-finansowe i prawne instrumenty ochrony środowiska naturalnego w Polsce* Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 2001, s. 53.

<sup>249</sup> Barczak A., Kowalska E., *Źródła finansowania zadań z zakresu ochrony środowiska w Polsce – przegląd stosowanych rozwiązań*, *Prawo Budżetowe Państwa i Samorządu*, 1(2)/2014, s. 39.



environmental protection tasks are the environmental funds for environmental protection: National Fund for Environmental Protection and Water Management (NFOŚiGW, the National Fund) and the Regional Fund for Environmental Protection and Water Management (WFOŚiGW) and the Forest Fund.

The NFOŚiGW and provincial funds for environmental protection and water management have been established under the Act of 27 April 1989 amending the Law on Environmental Protection and Management and the Law and the Water Law (OJ, No. 26, item. 139). Until 31 December 2009 there were also municipal and county funds for environmental protection and water management. However, with effect from 1 January 2010, they were liquidated and their sources were transferred into the budget revenues for municipalities and counties. The specificity of public tasks as well as the validity of a separate law which regulates the financing environmental protection and water management fixed the change of the legal and organisational shape of the NFOŚiGW fund.

On 1 January 2010, the NFOŚiGW fund<sup>250</sup> received a new legal status within the meaning of Art. 9 Section 14 of the Act on public finance (OJ of 2013. item. 885, amended). The need for transformation of the NFOŚiGW fund's legal shape from a state special fund into a state-based legal personality also resulted from the adjustment to the current financing system for environmental protection and water management contained in the Public Finance Act.<sup>251</sup> The purpose and area of operation of NFOŚiGW and WFOŚiGW funds were defined in the Environmental Protection Act. (OJ No. 215, item. 1664). These funds accumulate public means coming in particular from fees for the use of environment and from the administrative fines levied under the Environmental Protection Act and other specific provisions<sup>252</sup>. The WFOŚiGW fund has similar statutory goals but is applied in a smaller area of operation i.e. on a regional level. These funds play a significant role in the absorption of the EU aid.

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<sup>250</sup> Analogically, the WFOŚiGW funds were transformed into legal personalities of local governments.

<sup>251</sup> Gajewski D., Kulon A., 2011, *Finansowanie ochrony środowiska i gospodarki wodnej. Art.400-421 Prawa ochrony środowiska. Komentarz*, C.H. Beck, Warszawa, s. 46.

<sup>252</sup> Jendrośka J. (red.), 2012, *Leksykon prawa ochrony środowiska*, Wolters Kluwer, Warszawa, s. 44.

Environmental protection funds also includes the so called Forest Fund<sup>253</sup>, created under the Forest Act (Act Laws of 2011., No. 12, item. 59, amended). The forest fund manages the money received from fines and fees for the use of environment by allocating them to the objectives stated in the law on forests. Environmental protection funds are classified as private funds and finance tasks in the field of environmental protection according to their source – they have a state-based legal personality under the financial law. The fact that they have such a status, however, does not determine the nature of the means that the fund makes available. In addition, the amount of these funds is not fixed in the budget; both their origin and deployment are multidimensional<sup>254</sup>.

A significant source of funding in environmental protection and water management was “Ekofundus” foundation<sup>255</sup> (EcoFund); its task was to manage funds coming from the conversion of parts of the Polish foreign debts that were used to finance environmental projects – the so-called eco-conversion. They debts were reduced by the United States, France, Switzerland, Sweden, Italy and Norway (see Table 1). Eco conversion contributed primarily to the transfer of innovative technologies for environmental protection.<sup>256</sup> The amount of money spent by the EcoFund depended on the size of the debt reduced by countries contributing to the eco-conversion in Poland and on the size of the budget allocated to investments in environmental protection. The condition for debt relief was the objective equivalent in Polish currency to finance the projects in protecting the environment<sup>257</sup>. The EcoFund in the years 1992-2010 amounted to 579.5 billions dollars. The largest part – 34.6 millions – of the EcoFund was

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<sup>253</sup> Lipiński A., 2010, *Prawne podstawy ochrony środowiska*, Wolters Kluwer, Warszawa, s.353.

<sup>254</sup> Barczak A., Kowalska E., *Źródła finansowania zadań z zakresu ochrony środowiska w Polsce – przegląd stosowanych rozwiązań*, Prawo Budżetowe Państwa i Samorządu, 1(2)/2014, s. 39.

<sup>255</sup> Ecofund was created in 1992 by the Treasury represented by the Minister of Finance on the basis of the Law on Foundations from 1984 (OJ 1991. No. 46, item. 203, amended). It was active until 29 November 2010. The last act was completed in 2012.

<sup>256</sup> [http://www.mos.gov.pl/arttykul/7\\_aktualnosci/13585\\_ekofundusz\\_koniec\\_misjiz.org.pl](http://www.mos.gov.pl/arttykul/7_aktualnosci/13585_ekofundusz_koniec_misjiz.org.pl) (8 February 2015r.).

<sup>257</sup> Karlikowska B., 2001, *Źródła finansowania inwestycji proekologicznych w Polsce*, w: J. Zalewa (red.) *Ekonomiczno-finansowe i prawne instrumenty ochrony środowiska naturalnego w Polsce*, Wydawnictwo Uniwersytetu Marii Curie –Skłodowskiej, Lublin, s. 66.

registered in 2001, while the largest contribution to the costs of the EcoFund were investments related to the protection of the Baltic Sea<sup>258</sup>. The reduction of the Polish debt in relation to individual countries is presented in Table 1.

Table 1

**Amount of reduced debt under the Polish EcoFund**

Country	Reduced debt in percent	Amount i mln \$
USA	10%	372
France	1%	72
Switzerland	10%	70
Sweden	2%	6,5
Italy	2%	32
Norway	10%	27
Total	25%	579,5

Source: Own compilation

The foreign funds are primarily made up of the EU funds (including pre-accession funds) and other foreign recourses. In the pre-accession period, the foreign sources of financing tasks in the field of environmental protection were the programs PHARE, ISPA and the SAPARD agricultural fund. However, while the ISPA and SAPARD funds were used as a whole the environmental protection, the PHARE programme has been used only partly for such tasks<sup>259</sup>. The size of the grant of these programmes was 75.8% of the total grants awarded to Poland under foreign assistance in 1991-2001. The obtained funds of a total amount of about 12.8 billions Euros were mainly earmarked for the protection of water and for management of water resources.<sup>260</sup>

In the period 2004-2006, the activities of environmental protection and water management were financed from the EU budget under the Structural Funds<sup>261</sup>, the Cohesion Fund and the LIFE financial instrument for the

<sup>258</sup> Gruszecki P., 2003, *Źródła finansowania ochrony środowiska w Polsce*, w: Raport Stan środowiska w Polsce w latach 1996-2001", Inspekcja Ochrony Środowiska, Warszawa, s. 258.

<sup>259</sup> Barczak A., *Europejska pomoc ekologiczna dla Polski i państw członkowskich (analiza prawnoporównawcza)*, "Zeszyty Naukowe Wyższej Szkoły Morskiej w Szczecinie" 2001, nr 63, s. 32.

<sup>260</sup> <http://www.mg.gov.pl> (10 February 2015).

<sup>261</sup> The structural funds then enclosed: European Regional Development Fund, European Social Fund, European Fund for Agricultural Guidance and Guarantee (Section orientation), Financial Instrument for Fisheries.

environment. The environmental projects could also acquire support under the Financial Mechanism of the European Economic Area (MFEOG) as well as the Norwegian Financial Mechanism (NFM).<sup>262</sup> The value of the EU funds for environmental protection in Poland in 2004-2006 amounted to about 2.5 billions Euro (see Table 1)<sup>263</sup>.

The source of financing of projects on environmental protection in 2007-2013 was the operational programme “Infrastructure and Environment” (IaE – POLiŚ). EU funds for the IaE programme came from two sources: the Cohesion Fund and the European Regional Development Fund (ERDF). Environmental protection was the second area that received the most support. The value of EU funds allocated to environmental protection in Poland in 2007-2013 amounted to approx. 85.6 billions<sup>264</sup> (see Table 2).

European funds will also support the activities in the field of environmental protection in Poland in the years 2014-2020. According to preliminary estimates, Poland will receive 72.9 billions Euro on cohesion policy. These recourses will be distributed to among others “green energy and environmentally friendly transport”. As part of the allocation of funds for national programmes, the project “Infrastructure and Environment” will receive 24 158 billions Euro.<sup>265</sup>

There can also be other sources such as for instance from environmental foundations or in the form of self-taxation of local communities<sup>266</sup>. The structure and size of foreign funds received in Poland in the years 2001-2013 and 2014-2020 are presented in Table 2.

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<sup>262</sup> <http://www.funduszeuropejskie.pl> (31 January 2015)

<sup>263</sup> Karpińska J., *Finansowanie ochrony środowiska w Polsce ze źródeł europejskich w aspekcie okresu programowania 2007-2013*, “Zeszyty Naukowe SGGW w Warszawie – Problemy Rolnictwa Światowego”, t. 2(17), s. 342.

<sup>264</sup> <http://www.pois.gov.pl> (28 January 2015).

<sup>265</sup> Ministry of Infrastructure and Development, <http://www.mir.gov.pl> (1 February 2015).

<sup>266</sup> Broniewicz E., 2009, *Koszty użytkowania i ochrony środowiska*, w: *Ekonomika i zarządzanie ochroną środowiska dla inżynierów*, Broniewicz E., Godlewska J., Miłaszewski R. (red.), Oficyna Wydawnicza Politechniki Białostockiej, Białystok, s. 126.

Table 2

**Size of foreign funds in the years 2000 – 2013  
and 2014 – 2020 in Poland**

Period	Sources of financing	Amount
Pre-accession	PHARE, SAPARD, ISPA	12,8 billions Euro (85%+15%)*
2004-2006	Structural funds: ERDF, EFS, EFOiGR, FIOiR, Cohesion Fund Financial instrument LIFE, MFEOG and NMF	2,5 billions Euro (85%+15%)
2007-2013	Cohesion Fund and ERDF, liŚ project	85,6 billions Euro (85%+15%)
2014-2020	Cohesion Fund, liŚ project	24,2 billions Euro (85%+15%)

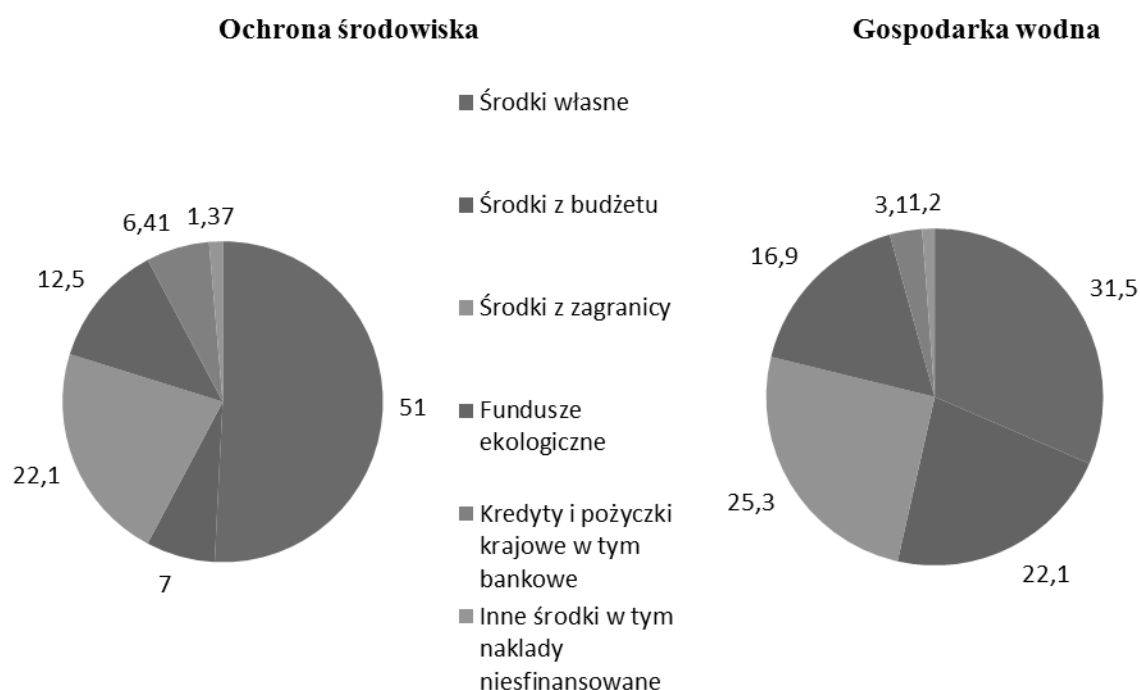
\*85% co-financing +15% own contributions

Source: Own compilation

**2. Structure of funds according to sources of financing**

It is important from the viewpoint of the analysis to present the structure of financial resources for investments in environmental protection and water management in Poland, according to sources of financing. The main group in the financing of expenditures on environmental protection during the period were funds of enterprises in the municipalities, where the share accounted for more than 50%, and where the share in the case of water went over 30% (see figure 2)

The second major source of funds are foreign resources, which in the analysed period included both the pre-accession funds as well as the ability to use the fully-fledged assistance within the framework of the EU membership. This is particularly visible in their extent in the years 2000-2013. One has to mention at the same time their extent in the pre-accession period both in the area of environmental protection and water management, which were respectively 3.9% and 13% as well as their increase in 2013 to 22% in environmental protection and to 25% in water management (Figure 2). This primarily resulted from the condition of environment in Poland, where huge resources were required to adapt it to the EU requirements both in terms of environmental protection and water management.



**Fig. 2. Share of financing investment in environmental protection and water management in 2013, in%**

Source: Own compilation based upon the GUS data, Ochrona Środowiska 2014, Warsaw, pp. 412.

Another increase in resources in this area was visible after 2005, which is associated with adjustment designated by the EU in the transition periods for water management and water protection (in this area, these periods were the longest). It should be stressed that the environmental funds including the National Fund for Environmental Protection and Water Management (NFOŚiGW) and the provincial (voivodeships) funds played a fundamental role in the distribution of foreign funds allocated to environmental protection and water management as an intermediary institution. Not surprising is therefore the fact that environmental funds are another important source of funding for environmental protection and water management. In the analysed period, their share used to protect the environment has been declining from 20% in 2000 to over 12% in 2013. In contrast, however, in water management its share was in an upward trend from 8.9% to almost 17% in 2013 (see Figure 2). The highest share of funds was recorded in the first year of Polish membership in the European Union.

Other financial sources have played a complementary role in financing activities in the field of environmental protection and water management (see Table 3).

Table 3

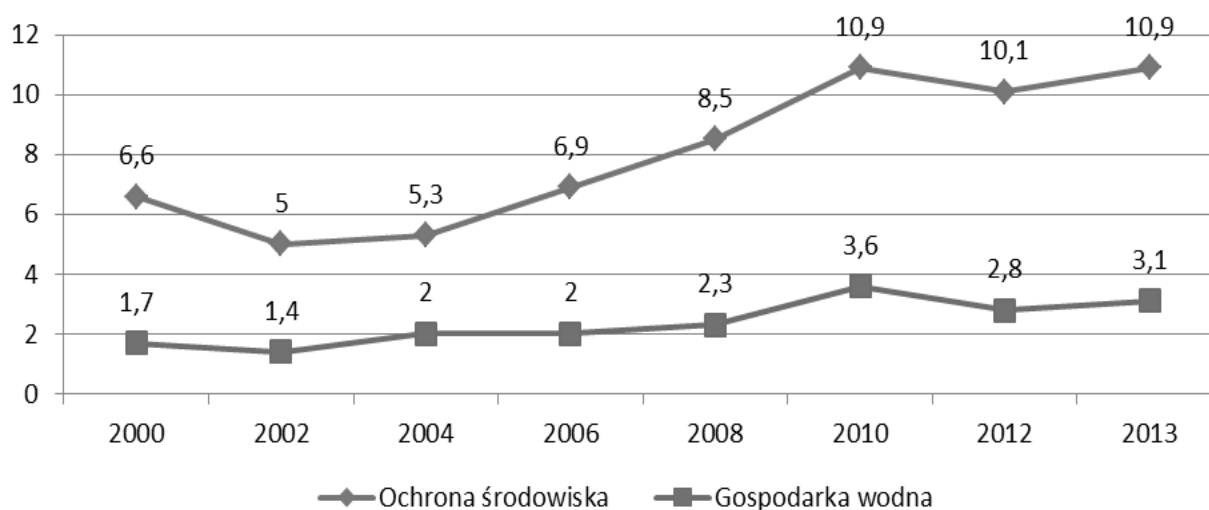
**Structure of investment in environmental protection  
and water management in Poland according to sources of funding  
in the years 2000-2013**

<b>Specification / years</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2012</b>	<b>2013</b>
<b>ENVIRONMENTAL PROTECTION</b>					
<b>Sources of financing in %</b>					
Own recourses	53,40	49,07	44,15	47,95	50,58
those of municipalities included	-	18,02	16,70	12,35	11,64
Budget recourses: central	2,20	1,07	0,79	7,61	4,91
Provinces (voivodeships)	1,60	0,45	1,17	0,69	0,61
County	0,20	0,10	0,43	0,36	0,12
Municipality	1,40	1,03	1,23	1,17	1,41
Sources from abroad	3,90	15,96	22,08	20,82	22,13
Ecology funds (loans, credits, grants)	20,00	21,15	13,88	13,94	12,47
Credits and national loans, also from banks	11,70	7,60	13,81	6,13	6,41
Other source and unfunded expenditures	5,60	3,56	2,45	1,32	1,37
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>WATER MANAGEMENT</b>					
<b>Sources of financing in %</b>					
<b>Specification / years</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2012</b>	<b>2013</b>
Own recourses	45,4	46,13	42,96	33,95	31,48
those of municipalities included	-	17,8	23,94	11,19	10,40
Budget recourses: central and	9,6	11,16	4,14	9,32	15,52
Provinces (voivodeships)	9,7	4,94	5,07	8,82	5,52
County	-	0,03	0,18	0,05	0,05
Municipality	1,3	1,24	0,83	1,52	1,02
Foreign resources	13,1	10,99	20,92	23,46	25,29
Ecology funds (loans, credits, grants)	8,9	16,32	14,2	17,31	16,88
Credits and national loans, also from banks	4,1	4,65	6,92	3,68	3,07
Other source and unfunded expenditures	7,9	4,53	5,47	1,9	1,18
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

*Source:* Own compilation based on statistical data from "Ochrona Środowiska, 2014, GUS, Warsaw, pp. 412.

### 3. Expenditures for environmental protection

According to the study carried out by the GUS, Poland has since 2000 experienced a growth of fixed capital formation for environmental protection, which amounted in 2013 to over 10.9 billions zł. There also was an increase in fixed investment on water management, which reached the level of about 3,1 billions zł. (GUS, 2014, p.1). The increase in expenditures on fixed assets in environmental protection and water management in the years 2000 to 2013 is illustrated in Figure 3.



**Fig. 3. Expenditure on fixed assets in environmental protection and water management in the years 2000-2013 (current prices).**

Source: Nakłady na środki trwałe służące ochronie środowiska i gospodarce wodnej w Polsce w 2013r., GUS, Department of Regional and Environmental Research, Warsaw 2014, pp. 1.

The best investment dynamics in environmental protection in Poland illustrate such indicators as the share of investment in environmental protection in GDP and the share of investment in environmental protection in the total investments.

The analysis of these above mentioned indicators shows that the GDP expenditure on fixed assets for environmental protection remained at the level of 0,6-0,8% in the analysed period and at the level of around 0,2% for water



management. The share of expenditures on fixed assets in environmental protection and on water management in the national economy levelled up in the years 2000-2013 to around 5% for the environment and slightly above 1% in the case of water management. (see Table 4). This is rather not a positive trend as it was estimated that in order to level up the state of environment in Poland to the EU level in 2000-2010, it would be necessary to spend 2% of GDP on environmental protection, and then no less than 1.5% in the next 10 years<sup>267</sup>. The sizes of expenditures on environmental protection and water management as well as their shares in GDP and total investments are illustrated in Table 4.

Table 4

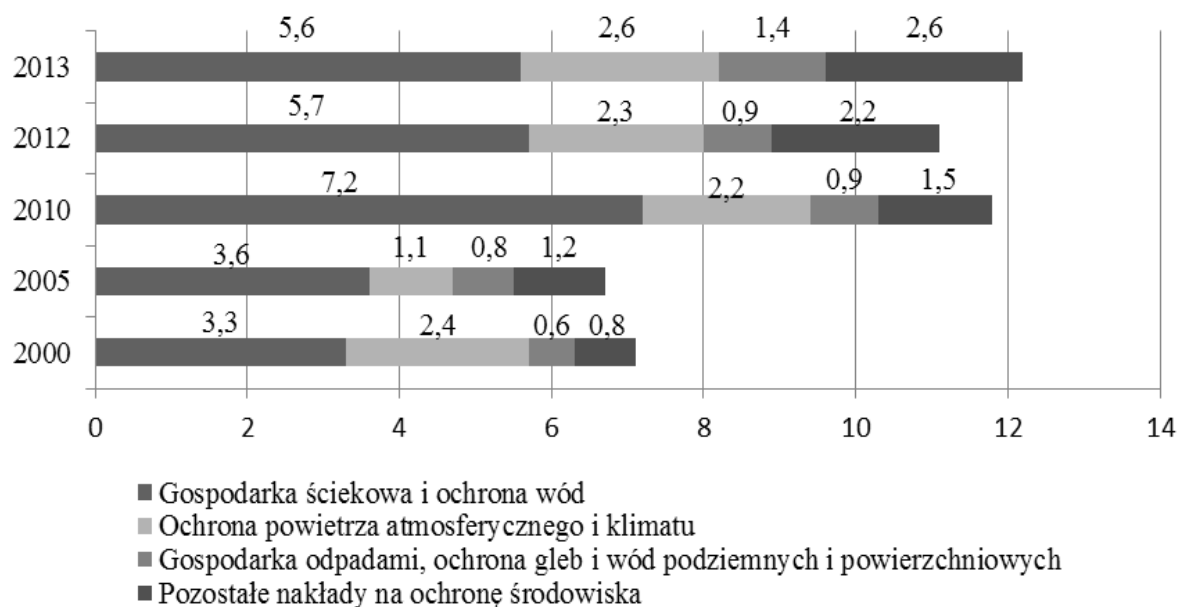
**Expenditure on fixed assets in environmental protection and water management in the years 2000-2013 (in million zł) and their share in GDP and total investment (in%)**

Specification / year	2000	2005	2010	2012	2013
<b>Expenditures on fixed assets in environmental protection and water management</b>					
Environmental protection (in mln zł)	6570,3	5986,5	10926,2	10127,8	10851,8
Water management* (in mln zł)	1652,7	1715,8	2823,2	2787,9	3059,3
<b>Share in expenditures in the national economy in %</b>					
Environmental protection	4,9	4,6	5,0	4,3	4,7
Water management	1,2	1,3	1,6	1,2	1,3
<b>Share in the GNP in %</b>					
Environmental protection	0,88	0,61	0,77	0,63	0,66
Water management	0,22	0,17	0,25	0,17	0,19

Source: Own compilation based upon data from "Ochrona Środowiska", 2014, GUS, Warsaw, pp. 410.

Priority area in the reporting period was management of wasted water and water protection, which received the largest funds of 5.6 billions zł in 2013. That was followed by the protection of air and other environmental expenditures amounting to the 2.6 billions zł and by waste management of 1.4 billions zł (see Figure 4).

<sup>267</sup> Broniewicz E., Poskrobko B., 2003, *Nakłady na ochronę środowiska – metodyka i wyniki badań*, Wyższa Szkoła Ekonomiczna w Białymstoku, Białystok, s.32.



**Fig. 4. Expenditure on fixed assets used in environmental protection in the years 2000-2013 in zł billion (Current prices)**

Source: Ibid. pp. 412.

### Conclusion

The financial system of environmental protection is a set of rules and regulations defining the modalities and procedures for collection and redistribution of funds allocated to this purpose. The system of financing environmental protection and water management is based on domestic as well as on foreign sources. In the analysed period, there has been a change in the structures of funding sources, where the share of funds for environmental protection in favour of own funds for enterprises and municipalities decreased. It has been a positive trend, which indicates the involvement of owners and increase in the environmental awareness of actors participating in the economic process. This was possible due to the huge funds allocated to Poland by the European Union in both the pre-accession period as well as during Poland's membership. The diversity of sources of funding for environmental protection also allowed the safety vis-à-vis and independence from the dominance of one source, and thus threats in a situation of losing this source of money.

## **4.4. The sources of financing environmental protection in Poland**

### ***Introduction***

The problem of environmental damage and degradation both in EU countries as well as in Poland has been widely discussed for many years. The actions which are taken in order to counteract this situation require significant financial resources. Therefore, using the natural environment and its resources generates the necessity to incur investment expenditures understood as financial investments or outlays in kind. They aim at creating new fixed assets or enhancing the existing ones.

The financial system of environmental protection is the set of rules and provisions determining the ways and the mode of collection and redistribution of the money allocated to environmental protection.<sup>268</sup>

The budgetary funds, private funds and funds from abroad are considered as the main sources of financing tasks in the field of environmental protection. Budgetary funds are provided by the government and local authorities, while private funds include: investors' own funds, loans (e.g. Bank Ochrony Środowiska S.A., commercial banks, environmental protection funds). Foreign funds include EU funds and other foreign resources.

Current challenges connected with environmental protection in Poland concern such problems as: the full implementation of Water Framework Directive, taking into consideration the issues of air quality and the activities referring to adoption to climate changes.

The purpose of this article is to present financial sources for environmental protection and highlight their particular role. It was emphasized that without all these instruments it would be impossible to achieve goals and ecological priorities stipulated by *the State Environmental Policy* and the

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<sup>268</sup> <http://www.proekologia.pl> (the date of access: 2nd July 2014)

environmental protection programmes of local authorities. This article is the analysis of normative material concerning financing environment protection.

### **1. Foreign funds**

The financial system of environment protection is the integral part of the financial system of the state. It was formed before the integration of Poland into the European Union and based on a different philosophy and sources of law.<sup>269</sup>

In the category of EU funds **the Operational Programme Infrastructure and Environment 2014-2020** (OP I&E 2014-2020) is currently available. It is a national programme supporting low-emission economy, environmental protection, counteracting climate changes and adaptation to them, transport and energetic safety, as well as investments in health care and cultural heritage protection. It is the biggest programme financed from the European Funds not only in Poland but also in the European Union<sup>270</sup>.

OP I&E finances various projects for a variety of entities which may apply for support within the framework of this programme:

- small and medium enterprises;
- large enterprises;
- public administration;
- enterprises carrying out public purposes;
- public services other than administration;
- health care institutions;
- social organizations and religious associations;
- scientific and educational institutions.

Cohesion Fund will be the main source of financing for OP I&E 2014-2020. Additionally, the support from the European Regional Development Fund is assumed. EU funds will participate in the Programme's implementation in the

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<sup>269</sup> B. Poskrobko, J. Ejdys, *System ochrony środowiska w Polsce*, [in:] B. Kozłowska (ed.), *Instrumenty polityki ekologicznej*, Łódź 2005, p. 100.

<sup>270</sup> [www.mos.gov.pl](http://www.mos.gov.pl) (the date of access: 2nd July 2015)

amount of EUR 27.41 billion. The division of EU funds within the OP I&E 2014-2020 between particular areas of support is the following:<sup>271</sup>:

- energy – EUR 2 800.2 million;
- environment – EUR 3 508.2 million;
- transport – EUR 19 811.6 million;
- culture – EUR 467.3 million;
- health – EUR 468.3 million;
- technical assistance – EUR 330.0 million.

10 priority axes will be carried out within the frames of the programme:

1. Reduction in the emission level of economy.
2. Environmental protection, including the adaptation to climate changes.
3. The development of TEN-T road network and multimodal transport.
4. Road infrastructure for cities.
5. The development of railway transportation in Poland.
6. The development of low emission public transport in cities.
7. The improvement of energetic safety.
8. Cultural heritage protection and the development of cultural resources.
9. The reinforcement of strategic infrastructure and the development of cultural resources.
10. Technical assistance.

Therefore, the priority axis – the reduction in the emission level of economy concerns such problems as<sup>272</sup>:

- production, distribution and using renewable energy sources, e.g. construction and expansion of wind farms, biomass or biogas installations;
- enhancement of energetic effectivity both in public and housing sector;
- development and implementation of intelligent distribution systems, e.g. construction of electricity distribution networks (low and medium voltage).

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<sup>271</sup> [www.mos.gov.pl](http://www.mos.gov.pl) (the date of access: 2nd July 2015)

<sup>272</sup> [www.mos.gov.pl](http://www.mos.gov.pl) (the date of access: 2nd July 2015)

The envisaged EU funding for performing the tasks of this axis amounts to EUR 1 828.4 million.

Environmental protection is another priority axis. It includes adoption to climate changes. The following undertakings are assumed within the frames of this axis:

- the development of environmental infrastructure (e.g. sewage treatment plants, water and sewage networks, installations for municipal waste management, including their thermal recycling);

- protection and restoration of biological diversity, improvement of city environment quality (e.g. reduction of air pollution and reclamation of degraded lands);

- adaptation to climate changes, e.g. protection of urban area against adverse weather conditions, rainwater management, projects in small water retention and natural disasters management systems.

The assumed EU funding amounts to EUR 3 508.2 million.

Another source of financing environmental protection is **LIFE Programme**. This is the only one EU financial instrument fully committed to co-financing projects concerning environmental and climate protection. Its main purpose is the support of the implementation process of EU environmental protection law, the implementation of EU policy in this field, as well as identification and promotion of new solutions of problems concerning the environment, including nature<sup>273</sup>. Since 2008 National Fund for Environmental Protection and Water Management has acted as LIFE Contact Point and supported Polish Applicants by proposing the innovative and the unique one in Europe programme of additional co-financing projects. Thanks to such a solution 64 projects of the budget of almost PLN 620 million and the NFEP&WM's support of PLN 320 million are being currently carried out in Poland.<sup>274</sup>

In October 2004 the Polish government signed two contracts which allow using the additional, apart from structural funds and EU Cohesion Fund, sources of non-refundable foreign aid: **EEA Financial Mechanism** and **Norwegian Financial Mechanism** (Norwegian Funds), originating from three states of European Free Trade Association, which are at the same time the

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<sup>273</sup> [www.mos.gov.pl](http://www.mos.gov.pl) (the date of access: 2nd July 2015)

<sup>274</sup> [www.nfosigw.gov.pl](http://www.nfosigw.gov.pl) (the date of access: 2nd July 2015)

members of European Economic Area, i.e. Norway, Iceland and Lichtenstein. Both mechanisms are governed by the same rules and procedures and are subject to one system of management and implementation in Poland. Currently these mechanisms are coordinated by the Ministry of Regional Development which acts as the National Contact Point. The implementation of Financial Mechanisms in Poland takes place pursuant to Regulation on implementation EEA FM and NFM, taking into account guidelines prepared by the donor states<sup>275</sup>.

The programme called **Green Investment Scheme (GIS)** also deserves attention. It concerns such problems as:

1. **Energy management in public buildings**- limiting or avoiding CO<sub>2</sub> emission by funding the undertakings enhancing energy effectivity use by public buildings. The budget of the programme amounts to PLN 464 857.7.

2. **Farm biogas plants**- limiting or avoiding CO<sub>2</sub> emission from energy production by combustion of fossil fuels by providing funding for the construction of farm biogas plants which use renewable raw materials. The budget of the programme amounts to PLN 90 982.9.

3. **Biomass electrical power and heating stations as well as heating plants**- the programme aims at carrying out undertakings including modernization or construction of biomass electrical power and heating stations as well as heating plants of thermal power below 20MW<sub>t</sub>. Limiting or avoiding CO<sub>2</sub> emission from energy production by combustion of fossil fuels by providing funding for the construction of biomass electrical power and heating stations and heating plants.

4. **SOWA- Energy-efficient street lighting**- limiting CO<sub>2</sub> emission by funding the undertakings which improve energy efficiency of street lighting systems. Disbursement of funds from planned liabilities for repayable financing of the programme is PLN 196 million.

5. **GAZELA – low-emission public transport**- limiting or avoiding carbon dioxide emission by funding the undertakings which aim at using less energy and fuels in public transport. The funding of the programme amounts to PLN 142 815.706.

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<sup>275</sup> [www.mos.gov.pl](http://www.mos.gov.pl) (the date of access: 2nd July 2015)

## **2. National sources of financing**

National Fund for Environmental Protection and Water Management (NFEP&WM) is the pillar of Polish financing system of environmental protection and water management. Furthermore, it has the highest financial capacity. National Fund is an important tool of conducting the policy of environmental protection in Poland. NFEP&WM offers loans, grants and other forms of funding for projects carried out by self-governments, enterprises, public entities, social organizations and natural persons, among others. In the public finance sector it is also the biggest partner in Poland for international financial institutions in dealing with financial resources allocated to environmental protection<sup>276</sup>.

NFEP&WM's priority programmes are the basis for accepting and examining requests for funding. These programmes determine the rules of giving the financial support and the criteria of the undertakings' choice. The the following programmes are being carried out by NFEP&WM in the years 2015-2020:<sup>277</sup>

### **I. Protection and sustained management of water resources:**

- water and sewage management in urban areas, the aim of which is to improve surface and underground waters quality standards by sewage treatment pursuant to Council Directive 91/271/ EEC concerning urban waste-water treatment. The budget allocated to the implementation of this programme amounts to PLN 1 710 000.

### **II. Rational waste management and protection of the Earth's surface:**

- rational waste management – aims at implementing the rules of waste management and in particular the hierarchy of ways of dealing with waste by:
  - establishing and maintaining common systems of selective collection of waste;
  - creating and maintaining an integrated and sufficient installation of waste management in the country;
  - reducing the amount of waste illegally transferred across borders;
  - intensifying collection and legal dismantling of decommissioned vehicles;

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<sup>276</sup> [www.nfosigw.gov.pl](http://www.nfosigw.gov.pl) (the date of access: 2nd July 2015)

<sup>277</sup> [www.nfosigw.gov.pl](http://www.nfosigw.gov.pl) (the date of access: 2nd July 2015)



- raising ecological awareness of the society in accordance with the purpose of the programme.

The budget for carrying out this purpose of the programme amounts to PLN 3 556 600.00;

- the Earth's surface protection – it aims at: the reduction of negative impact on the environment by the reclamation/remediation of degraded area, including closed landfill sites and the Earth's surface protection by the performance of documentary works, and next the works which will stabilize and secure landslides. The budget allocated for this objective of the programme amounts to PLN 201 921.5.

- geology and mining – this programme aims at identifying the geological structure of the country as well as the rational management of mineral deposits and underground waters by implementation of long-term policies of the state and the directions of research in geology, the implementation of appropriate directives and limitation of negative impact on the environment resulting from ore extraction and winding up mining plants by:

- reclamation of grounds on the areas degraded by mining activities;
- eliminating threats resulting from the construction and the use of building facilities and mining excavations;
- monitoring the state of the environment and counteracting serious accidents in mining.

The budget for the objective of the programme described above amounts to PLN 1 106.07.

### **III. The protection of the atmosphere:**

- the improvement of air quality, the purpose of which is to reduce the population's exposition on air pollution in the areas where the level of this pollution significantly exceeds permissible and target concentration by developing air protection programmes and by reducing emitted pollution. The budget for the implementation of this objective of the programme amounts to PLN 125 500.00.

- LEMUR – Energy-Efficient Public Buildings – the purpose is to reduce energy consumption and, as a consequence, to limit or avoid the CO<sub>2</sub> emission in connection with the design and construction of new energy-efficient public buildings and collective residential buildings. The budget for the implementation of this objective of the programme amounts to PLN 290 000.

- subsidies to energy-efficient houses – the purpose of this programme is to save energy and to limit or avoid CO<sub>2</sub> emission by funding the undertakings which improve efficiency of energy use in newly-constructed residential buildings. The planned liabilities for non-repayable financing amount to PLN 300 million.

- energy-efficient investments in small and medium enterprises – the purpose of the programme is to limit the energy consumption as a result of carrying out an energetic efficiency investment and the use of renewable energy sources in small and medium enterprises sector. As a result of this programme CO<sub>2</sub> emission will be reduced. The planned liabilities for non-repayable financing amount to PLN 59 910. 5.

- BOCIAN – dispersed, renewable energy sources. This programme aims at limiting or avoiding CO<sub>2</sub> emission by increasing energy production from installations using renewable energy sources. The budget for the implementation of this purpose of the programme amounts to PLN 570 000.

- PROSUMENT – financing renewable energy sources micro-installations – the purpose of the programme is to limit or avoid CO<sub>2</sub> emission as a result of increasing energy production from installations using renewable energy sources by the purchase and installation of renewable energy sources micro-installations for the production of electrical energy or heat for natural persons and housing cooperatives or tenants' association. The budget for the implementation of this objective of the programme amounts to PLN 714 700.

#### **IV. The protection of biological diversity and the functions of ecosystem:**

- protection and restoration of biological diversity – the aim of the programme is to stop the process of losing biological and landscape diversity, recreate and enrich the resources of nature and efficient management of species and habitats. The budget for the implementation of this objective of the programme amounts to PLN 132 million.

#### **V. Interdisciplinary:**

- expertise, research papers, the implementation of international obligations – the purpose of the programme is the support of the activities carried out by the Minister of Environment necessary to implement environmental protection policy. The budget allocated for the implementation of the objective amounts to PLN 330 000;

- the support of environmental monitoring, the aim of which is to support the environmental quality management system and to support

hydrological and meteorological protection of the society and economy with special regard to fulfilling Poland's international obligations. The budget for implementation of this objective of the programme amounts to PLN 360 000;

- counteracting environmental threats – the purpose of the programme is to improve the protection level against the consequences of natural threats and serious accidents, facilitate to remove their consequences and strengthen particular elements of environmental management. The budget for the implementation of this objective of the programme amounts to PLN 228 000.

- ecological education – the aim of the programme is to raise the ecological awareness and shape ecological attitudes of the society by promoting the rules of sustainable development. In particular:

- popularizing knowledge on environmental protection and sustainable development;

- shaping pro-environmental behaviour of the society, including children and youth;

- social activation – building the civil society in the field of environmental protection and sustainable development.

The budget for the implementation of this purpose of the programme amounts to PLN 198 282;

- co-financing LIFE programme (described above in EU funds section);

- SYSTEM – The support of activities by Provincial Funds for Environmental Protection and Water Management (PFEP&WM). The purpose of the programme is to support activities of environmental protection and water management which cannot be financed from the resources of provincial funds for environmental protection and water management by giving them funding from the National Fund for Environmental Protection and Water Management. The budget for the implementation of this objective of the programme amounts to PLN 780 000.00;

- the support of undertakings in the field of low-emission and resource-efficient economy (E-KUMULATOR – Ecological Battery for the Industry) – the aim of the programme is to reduce the negative impact of enterprises on the environment. The budget for the implementation of this objective of the programme amounts to PLN 1million.

- civil initiatives for the environment – the aim of the programme is to improve the natural environment with the engagement of local communities. In particular:

- solving local problems regarding environmental protection, including creation and support of local partnerships;
- activating mechanisms for permanent environmental protection;
- improving the management of pre-ecological civil activities on the local level.

The budget for the implementation of this purpose of the programme amounts to PLN 25 000.

Provincial Funds for Environmental Protection and Water Management (PFEP&WM) have similar aims of statute activities as NFEP&WM, but the field of activities mainly concerns undertakings on the regional level. Forestry Fund, whose manager is the Director-General of Państwowe Gospodarstwo Leśne "Lasy Państwowe [National Forest Holding "The State Forests"]", is also included into environmental protection fund. Forestry Fund manages financial resources allocating them to such purposes as: compensation of shortage concerning financial resources in forest inspectorate, shortages created during the implementation of tasks of forestry management, for the joint undertakings of organizational units of the State Forests, for scientific research, creating infrastructure for forest management, drafting plans of the forest and forecasting the development of tree resources.<sup>278</sup>

### **Conclusion**

Financial funds necessary to carry our tasks in the field of environmental protection should come from various sources. It must be stressed that the comprehensive financial activity in favour of environmental protection is impossible without the support of the state and local authorities.

Funds from the EU budget have become the main impulse to undertake activities in the domain of environmental protection and prompted spending the national funds and implementing own resources of entrepreneurs on investments in this field.<sup>279</sup>

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<sup>278</sup> A. Lipiński, *Prawne podstawy ochrony środowiska*, Warsaw 2010, p. 353.

<sup>279</sup> A. Barczak, E. Kowalewska, *Źródła finansowania zadań z zakresu ochrony środowiska w Polsce – przegląd stosowanych rozwiązań*, "Prawo Budżetowe Państwa i Samorządu" 2014, no. 1(2), p. 57.

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# **SOCIO-ECONOMIC GUIDELINES OF FISCAL POLICY**

**Monograph**

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