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1 ISSUE
I PART

EDITORS
Mirosław Wypych
Paweł Trippner

Practical and Theoretical Issues in Contemporary Financial Management

WYDAWNICTWO
SPOŁECZNEJ AKADEMII NAUK

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Introduction

It is our great pleasure to give into the hands of readers the first issue of the journal „Entrepreneurship and Management" in the year 2016.

In the coming years the publishing house of University of Social Sciences is planning to issue the annual publication of two numbers completely in English language.

The great advantage of the publication in the journal „Entrepreneurship and Management" is a very attractive number of points (14 points according to the list B of academic journals of the Ministry of Science and Higher Education).

In the modern economy, finances are a bridge between all the symptoms of human activity, being a consequence of various decisions. This applies both to households, commercial enterprises and organizations representing the area of services and public sector institutions.

On the one hand, any action or decision-making conditions can be explained in financial terms, on the other hand – every decision should not be taken without considering financial aspects, associated with them. It is difficult, therefore, to imagine the management of a household budget, any enterprise, any institution or even the state, without considering the financial aspects of management.

For this reason, the interest in finance, for both theoreticians and people constantly facing financial issues in their professional work, is still ongoing and is the inspiration for the exchange of experiences, the presentation of research results and proposing the applications of solutions to improve the act of making any management decision. One of the methods to achieve these goals is to be a part of the wide variety of scientific publications related to the issues mentioned above.

The current issue of the „Entrepreneurship and Management", entitled „Practical and theoretical issues in contemporary financial management" contains both theoretical considerations and practical analyses based on the assumption that every managerial decision has a financial dimension.

The issue contains 13 articles representing the following thematic areas:

- analysis of the financial situation of enterprises and financial institutions,
- the use of accounting tools in management in companies,
- taxes analysis,
- monetary and capital market,
- health insurance systems in EU countries.

The analysis of the articles shows that the notion of finances can be considered depending on the place where they are or the object they relate to. Looking at finances from the side of cash resources managing company, the importance of accounting has to be appreciated.

Accounting is an essential tool of registration, collection and processing of information characterizing the phenomenon and economic processes, enables knowing the essence, the complexity of the causes and the mutual relationships between phenomena and processes and finally allows to make the most effective and profitable economic decisions.

This scientific book contains 13 articles whose authors are mainly University of Social Sciences' academics (seven people). Four articles were prepared by the academics of the University of Lodz, one is from Warsaw University and one is from Częstochowa University of Technology.

Encouraging to read the articles, we deeply hope that their content will prove a valuable source of inspiration for further scientific inquiries and research studies, which will be included in subsequent publications.

It is worth mentioning that all articles passed through the complete reviewing process. After complimentary remarks applied by the reviewers the articles have received the permission to be published in the „Entrepreneurship and Management" issue.

It means that all the articles have got distinctive features of appropriate level of scientific maturity and depth of the research and are a valuable source for science and didactic process. We invite you to read the content of the issue.

The authors, scientific editors and University of Social Sciences' publishing house would like to thank to the reviewers, whose valuable comments in the process of reviewing contributed significantly towards the definitive form of this issue.

Mirosław Wypych
Paweł Trippner

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ICT Utilisation and Ict-Driven Organisational Change in Polish Enterprises[1]

Abstract: The paper elaborates on the relationship between ICT utilisation and enterprise performance using unique data collected within the survey of 1000 Polish companies in the first half of 2015. The analysis refers to the conceptual model derived from the paper of Milgrom and Roberts (1990) that focuses on the role of complementary (organisational) changes in efficient and productive implementation of Information and Communication Technologies in enterprises.
The study shows that companies which invest in ICT and widely utilise these technologies achieve better results (in terms of efficiency, productivity, market image). However, it appears that the holistic approach to ICT utilisation in Polish companies is not very popular – only 1/3 of surveyed enterprises combined ICT implementation with organisational change. It implies that there is still large unexploited potential as for productivity enhancement, especially in micro and small companies.
Key words: enterprise, ICT, organisational change, productivity

1. Introduction

It has been argued that Information and Communication Technologies (ICT) have been one of main drivers of transformation from the post-industrial to information/

1 This paper was prepared within the framework of research project "Impact of Information and Communication Technologies on productivity – macro and micro analysis" at the Department of Economic Policy, University of Lodz, financed by the National Science Centre (contract number DEC-2013/11/B/HS4/00661).

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knowledge society. ICT, through the channel of technical progress, changed significantly the way companies operate, create competitive advantages, and manage their business processes. To describe these changes, researchers proposed different concepts capturing the impact of ICT on enterprise performance – these models perceive ICT-driven processes as a transition from a "mechanistic" to an "organic" firm structure [Burns, Stalker 1994], from the "mass production model" to the "flexible multiproduct firm" [Milgrom, Roberts 1990], or from a "tailoristic" to a "holistic" organisation of work [Lindbeck, Snower 2000]. All of these concepts are based on the assumption that implementation of ICT is a prerequisite for enhancement of company performance (the so-called first-order effect), but also introduction of complementary changes related to ICT (second-order effect, better known as the notion of "organisational change") are necessary to exploit the full potential of new technology. The role of interactions between ICT investments and organisational change has been discussed mainly in developed countries, while such analysis in emerging economies (including Poland) has been rather scarce.

The goal of the paper is to present and discuss the relationship between ICT utilisation, ICT-complementary changes and company performance in Polish enterprises. A hypothesis that organisational change is an important factor enhancing ICT-driven productivity is tested in a descriptive manner. The empirical analysis in the paper is based on results of the survey conducted in the first half of 2015 in the Polish companies using ICT. In the next section the literature review of theoretical and empirical studies is presented in a concise manner. Further, the survey results are elaborated following the logic of simple conceptual model of productive ICT implementation: investments – utilisation – organisational change – productivity effects. Finally, the concluding remarks are presented.

2. ICT and productivity – theoretical and empirical background

Although the mid-1990s literature was dominated by scepticism about the positive impact of ICT on productivity (known as the Solow paradox), recent studies have confirmed that ICT enhance productivity and economic growth not only in highly developed countries but also in emerging economies, including Central and Eastern European countries [Arendt 2016; Jorgenson, Vu 2010]. It is argued that two types of effects, related to Information and Communication Technologies, influence performance of businesses [Jung, Mercenier 2014]. The so called first-order effect captures the impact of investments in ICT infrastructure (hardware and software) on the stock of capital[2] – the growth of ICT-capital shall positively influence the enterprise productivity. The second-order effect is a result of complementary changes that are induced by ICT investments. In the macro perspective, these complementarities affect Total Factor Productivity, and as a result – productivity and GDP growth.

The concept of second-order effect refers to seminal work of Milgrom and Roberts [1990]. They introduced the conceptual model of interrelated changes connected with implementation of CAD/CAM technology in one of the American companies. The model is based on the assumption that utilisation of the full potential of new technologies (including Information and Communication Technologies) requires organisational changes (e.g. in work organisation, defining new procedures). However, introduction of these complementary changes takes time – as a result positive outcomes of ICT investments are usually recorded with some delay. There are many examples of adoption of organisational changes – new human resource management practices, redefinition of business processes, growing importance of human capital [Dedrick et al. 2013; van Reenen et al. 2010]. Quite extensive list of such changes – defined as pillars of digital organisation – was presented by Brynjolfsson [2005] who analysed the performance of large American companies. These "pillars", enhancing productivity and market value of the enterprise, include: moving from analog to digital processes; open information access; empowerment of employees; usage of merit-based incentives; investing in corporate culture; recruiting the right people; and investing in human capital.

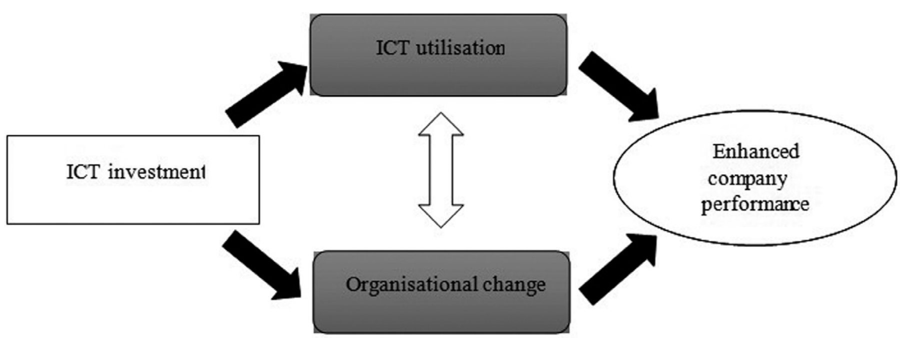
The potential of available human capital seems to be crucial factor that determines productive utilisation of ICT. Many research studies proved that increasing stock of human capital is an enabling factor as for technology development, and combined with changes in the workplace organisation leads to productivity gains at the company level [Acemoglu, 2002; Arvanitis, Loukis 2009; Black, Lynch 2004; Bresnahan et al. 2002; Brynjolfsson, Hitt 2003]. It is due to the fact that skilled workers adapt more easily to changes in organization [Caroli, van Reenen 2001].

2 The growth accounting methodology, widely used to analyse the impact of ICT on economic growth at the macro and mezzo level, distinguishes between ICT-capital and non-ICT capital [Oliner, Sichel 2000].

These theoretical assumptions and empirical observations seem to hold also in case of emerging economies. Piatkowski [2004], and van Ark and Piatkowski [2004], who analysed the relationship between ICT utilisation and productivity in the former centrally-planned economies, stressed the ICT potential would not be fully utilised in the CEE region (including Poland) without changes in institutional and regulatory environment, as well as without changes in the structure, organization and business model of companies – especially improvement of digital skills of the labour force.

There are two important findings, from the point of view of this paper, stemming from this concise literature review. Firstly, the conceptual model of the productive implementation of Information and Communication Technologies in the enterprises may be presented in the form of a chart (Fig. 1). This chart presents four stages of ICT introduction within organisation. It starts with making investment in ICT infrastructure (growth of ICT-capital). Then, new technology is introduced and used on a daily basis. At the same time, organisational change processes should be launched[3]. The interaction between ICT use and organisational change leads finally to better company's performance.

Figure 1. Model of ICT implementation within a company



Source: own elaboration.

Secondly, the model can be tested, using method of descriptive analysis, in the Polish companies. Next section focuses on this issue.

3 Sobka [2014] described different issues related to implementation of multidimensional organisational change in companies, while Krupa [2004] discussed theoretical concepts of organizational change focusing on new technologies and usage of information systems in companies' management.

3. ICT-driven change in Polish enterprises

The analysis in this section is based on data collected within the PAPI survey of 1000 Polish companies[4], conducted in the first half of 2015 within the research project "Impact of Information and Communication Technologies on productivity – macro and micro analysis". The survey was administered to a representative sample of the Polish enterprises that use ICT. The sample was stratified by company size (small, medium and large entities), sector (manufacturing, services), and region (NUTS II).

3.1. ICT investments

According to the conceptual model (Fig. 1), the first-order effect is related to the size of ICT-capital stock, which is built through investing in ICT infrastructure. Despite that ICT investments in Poland have been growing in recent years quite rapidly compared to developed European Union countries (EU-15), and ICT-capital has played more and more important role as for GDP and productivity growth[5], the ICT infrastructure gap between Poland and EU-15 still exists. Therefore, we may expect that Polish companies would be fairly active when it comes to investing in ICT. The survey results seem to confirm this thesis – half of the companies (506 entities) invested in Information and Communication Technologies within previous 2 years. However, it should be noted that the relative value of these investments was not large – they accounted for an average of 16.7% of all investments made by the companies during that period.

Willingness to invest in ICT depends on company size (large enterprises were investing in ICT perceptibly more often in comparison to micro-enterprises), and its "age" (almost 2/3 of companies operating on the market for 26 years or more made investments in ICT, while in case of young firms, which were up to 5 years on the market, this percentage was 39.4%). These relationships seem to be stable – previous research studies also revealed this kind of dependency [Arendt 2009; CSO 2015].

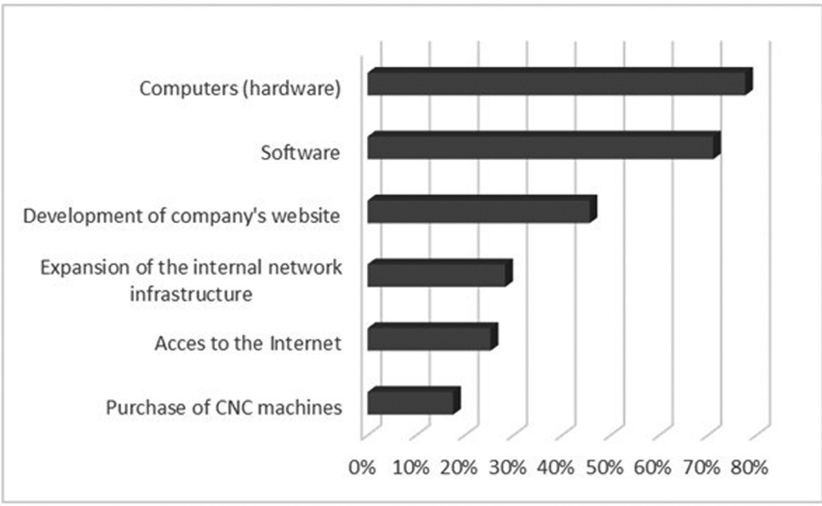
Companies invested primarily in computers and software (Fig. 2), which is not surprising given the pace of ICT development. It manifests itself in releasing to the market ever newer, faster, and more efficient generations of hardware, which often

4 Interviews were conducted with management staff – owner-managers, CEOs, presidents, directors of companies.

5 Average GDP rate of growth in Poland in 2004–2014 came to 3.89. In that period average growth of ICT-capital accounted to 18.12% (almost 8p.p. more than in the EU-15), and contribution of ICT-capital to the economic growth was estimated at 0.75p.p. (comparing to 0.48p.p. in the EU-15).

entails a change of software, because older software versions are not compatible, or do not work properly with the newest computers.

Figure 2. Types of ICT investments (n=506)



Source: own calculations.

Also implementing new software often enforces companies to buy new computers (because new versions of software usually cannot be installed on the "old" computers), which leads to self-sustaining spiral of investments within the sequence computers – software – computers. Of course, we should keep in mind that „software" includes not only standard programmes, but also specialised ERP or CRM software, which can be unique and is usually prepared for the specific company needs.

Company website has become an important element of the enterprise ICT infrastructure – it is "a window" to the digital world, which according to research results, is an increasingly important channel for e-commerce activities in Polish companies. Thus, development of the company website was the third most popular type of investment in ICT (Fig. 2). Expansion of the network infrastructure (both communications network within the company, as well as this providing access to broadband Internet) was carried out less often. The least popular investment was the purchase and installation of computer numerical control (CNC) machines, which should be attributed to the specificity of this technological solution (which is dedicated mainly for industrial applications).

3.2. Utilisation of ICT

To measure ICT utilisation in the Polish companies[6], the following business processes were taken into account[7]: office management, accountancy, HR management, supply management, production management, CRM software, ERP software, CAD/CAM systems, and CNC systems. These ICT applications include, on the one hand, tools that are relatively simple and inexpensive in implementation. On the other hand – they encompass complex IT systems that are dedicated primarily to large companies (due to the high degree of complexity, and high cost of preparation, implementation, and maintenance of such a system). Such diversity of ICT applications made it possible to examine the impact of ICT utilisation on companies of different sizes – it would be unreasonable to expect that micro-enterprises will be implementing ERP or CAD/CAM systems, while large firms will be using only office software.

Generally, the abovementioned hypotheses were supported within the survey, although in some cases results were not in line with expectations – in particular with regard to CRM software (dispersion of scale of its use due to the size of the company was unexpectedly small). Moreover, the scale of supply management software utilisation in the micro and small enterprises was relatively high (Tab. 1).

Table 1. Business processes supported by ICT, by company size (in %)

Type of applications/Company size	Micro	Small	Medium	Large	Total
Office management software	62.0	55.1	68.2	80.5	65.5
Financial/accounting software	90.3	86.6	96.8	97.8	92.4
HRM software	27.8	50.8	77.3	94.1	55.1
Supply management software	55.4	67.4	84.5	90.3	70.3
Manufacturing management software	10.4	20.3	44.5	68.6	30.4
CRM systems	57.4	61.0	67.3	72.4	63.1
ERP systems	10.4	18.7	35	66.5	27.6
CAD/CAM systems	11.9	17.6	27.3	50.8	23.5
CNC systems	6.8	16.0	30.9	58.4	23.2

Source: own calculations.

6 Review of studies related to ICT utilisation in Polish companies conducted before 2008 may be found in [Arendt 2009].

7 This approach is different from the one used by the Polish Central Statistical Office (CSO). CSO applies the Eurostat methodology – the survey is carried out on a yearly basis in EU Member states since 2002 (in Poland since 2004), and encompasses companies employing 10 or more persons from selected NACE Sections. It is an important source of data with regard to ICT utilisation in households, companies, and development of information society.

Some ICT applications (e.g. accounting software) may be considered as almost standard solution, regardless of the size of the company, while the advanced ICT systems (e.g. ERP, CNC, and CAD/CAM software) are used more often by large enterprises (see also CSO 2015).

To assess the degree of maturity of companies in the field of ICT, the number of business processes supported by ICT was calculated for each enterprise[8]. There were firms which implemented ICT in all nine business processes – as it was easy to predict, this situation took place most often in large enterprises. Large corporations and, to a lesser extent, medium-sized companies took advantage of ICT in more than six business processes.

Table 2. Number of ICT-supported business processes by the company size (in %)

No of business processes/Company size	**Micro**	**Small**	**Medium**	**Large**	**Total**
2	13.1	4.8	0.9	0.0	6.5
3	54.5	40.6	14.5	4.3	34.0
4	21.8	26.2	21.4	12.4	20.9
5	8.5	19.3	22.7	13.0	14.4
6	1.9	4.8	15.5	12.4	7.3
7	0.2	2.7	10.9	16.2	6.0
8	0.0	1.1	8.6	10.8	4.1
9	0.0	0.5	5.5	30.8	7.0

Source: own calculations.

In contrast, micro and small enterprises implemented ICT to support usually three business processes. As a result, more than half of surveyed Polish companies used ICT to support three or four business processes[9] (Tab. 2).

Broadband access to the Internet has recently become one of the main prerequisite for efficient utilisation of Information and Communication Technologies. Polish companies seem to be aware of this, which is reflected in increasing share of firms taking advantage of broadband Internet access [CSO 2015]. In the group of surveyed enterprises 77% provided Internet connection to all computers, while in case of 21.7% of companies selected computers were connected to the fast In-

8 Of course we bear in mind that total number of these ICT-supported business processes depends on the size and other characteristics of a given company.

9 It should be stressed that the survey was conducted only in these enterprises that had access to computers and used ICT in at least 2 out of 9 business processes. In this way companies, which did not use ICT at all, and these in which the use of ICT was so limited that it could not be a factor leading to organisational change, and thus productivity increase, were excluded from the survey.

ternet. 432 enterprises (42.9% of the sample) implemented internal computer network (intranet).

Access to the Internet in the company enables employees to perform various tasks. Internet serves as a source of information (access to such information is relatively quick and inexpensive) – the information is always sought in this way in almost 42% of the surveyed companies, and very often in almost 40%[10]. On-line banking and financial services were the second most popular purpose of the Internet use (the average scale value reached 4.9, which means that the surveyed companies perform these services on-line very often).

Table 3. Utilisation of the Internet for different purposes

Purpose/Frequency	Always	Very often	Often	Rarely	Very rarely	Never	Average scale value
Seeking for information	41.7%	39.5%	15.7%	2.5%	0.4%	0.2%	5.2
On-line banking and financial services	37.3%	36.0%	17.5%	4.9%	1.5%	2.7%	4.9
Training and education	12.9%	19.6%	28.7%	20.6%	9.8%	8.4%	3.8
Observing market changes	20.8%	29.6%	27.7%	13.3%	4.8%	3.8%	4.4
On-line procurement	12.4%	24.2%	27.9%	18.4%	8.9%	8.2%	3.9
Customer service	23.2%	27.2%	23.2%	13.5%	5.8%	7.0%	4.3
Business applications and systems	13.7%	22.7%	21.9%	14.6%	10.0%	17.1%	3.6

Source: own calculations.

Subsequently, the Internet helped to observe changes in the market situation and to provide customer service. The latter area seems to be crucial for the business success. On-line business applications and systems appeared to be least popular – in this area answers “always” were given very rarely, while category “never” was indicated quite often. Unfortunately, Polish companies do not take advantage of e-learning

10 Subjective respondents’ answers about the frequency of using the Internet for different purposes were translated into an interval scale (from 1 to 6, where 1 means that Internet was never used for the selected purpose, while 6 means it was used always in such circumstances). On this basis, the average scale values for each type of use of the Internet were calculated.

opportunities that could be used to train the employees[11]. Also on-line procurement was exploited below its potential (Tab. 3).

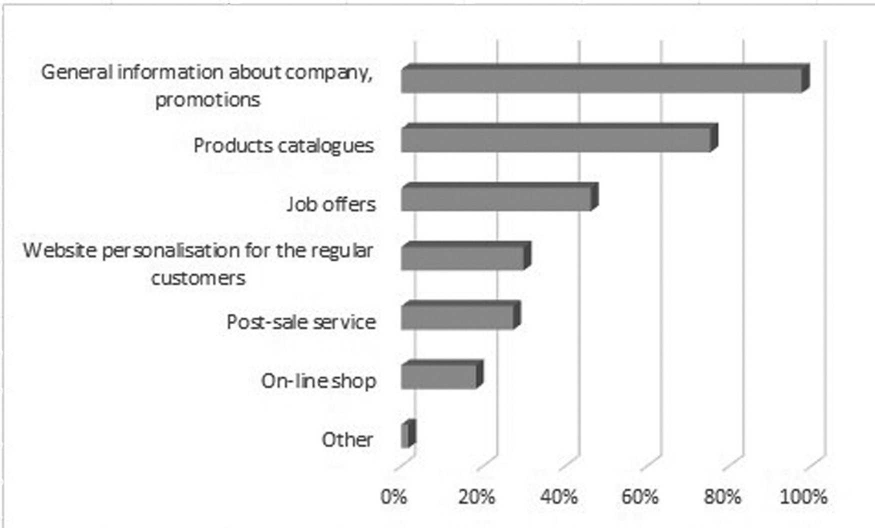
Access to the Internet opens up many business opportunities for marketing, promotion, and delivery of products and services to the market. However, to take advantage of these opportunities, it is necessary to implement solutions, ranging from the simplest – the company e-mail address through which customers and other stakeholders can contact the company, through more advanced – company website, ending with the most sophisticated – the online store.

The company e-mail address has actually become the standard tool in the Polish enterprises (94.9% of the surveyed companies), and also company website is very popular (82.3%)[12]. These websites contain primarily B2C functions – they provide a platform for maintaining a contact with customers in various dimensions. The most common content of company website includes information about the firm, its products and current promotions (97.7%). ¾ of the websites contain catalogues (product and prices), and almost 1/3 provide option for regular customers (who create individual user accounts) to personalise the web page. Some websites offer a module of the post-sale service, which is vital to build customer satisfaction. In addition to the elements which are focused primarily on the customer relationships, almost half of the websites provided information on the job opportunities – including the recruitment procedures, and available vacancies. An online store may be the integral part of the company website, although this solution is not widely utilised by the Polish enterprises. However, it should be noted that all companies which have online shops integrated with the company web page, provided on-line payments to the customers (Fig. 3).

11 Kozioł [2013] reported that only 20% of small and medium-sized enterprises in malopolskie, slaskie and podkarpackie regions used e-learning as a tool for employees' training. Moreover, in most cases e-learning can be characterised as sporadic and unorganised, which translates into its poor efficiency.

12 Data provided by the Polish Central Statistical Office (CSO) shows that 65.4% of Polish companies had their own website in 2015, with perceptible diversification of this scale by the type of business [CSO 2015]. This difference in comparison with results of the survey carried out within the project "Impact of Information and Communication Technologies on productivity – macro and micro analysis" may be attributed to the fact that CSO analyses all companies, even these which do not use ICT.

Figure 3. Content of company websites



Source: own calculations.

It seems that e-commerce is more and more important for the Polish enterprises – although only 153 surveyed companies had on-line store, 306 enterprises (30.4% of the sample) declared that they sell products and services via the Internet[13]. This on-line sale generated, on average, 1/3 of total turnover – in most cases, on-line transactions accounted for 25% of total sale, but for ¼ of the companies it exceed half of the turnover. 10 surveyed companies (7 micro and 3 small enterprises) introduced a business model of a virtual firm – they were selling their products on-line only. Such modern business model gives small businesses a chance to create a competitive advantage.

Surveyed companies are much more interested in buying on-line than selling[14] – as much as 711 surveyed enterprises (70.6%) took advantage of on-line shopping to provide necessary supplies. Even though more companies are buying than selling on-line, the average volume of purchases is lower than sales volume (average share of online shopping volume in total expenditures in the previous year amounted to 27.3, and was 5.1 percentage points lower compared to sales share in total volume).

13 While company's on-line stores are established rather by larger enterprises, selling on-line through external providers is basically equally popular regardless of company size.

14 It should be noted that the survey results reported much higher utilization of e-commerce that data provided by CSO (2015).

Gathered data shows that growing utilisation of e-commerce had positive impact on business performance. 44% of active on-line enterprises reported turnover increase on a year-to-year basis. Moreover, these companies which saw growing on-line sales and purchases recorded continuous growth of the revenues between 2012 and 2014 more often than other firms.

3.2. ICT and organisational change

As it was previously stated, recent research studies in developed and emerging economies have proved that Information and Communication Technologies enhance company productivity (including labour productivity) only if it is complemented by organisational change. It has been argued that in a modern world company's success depends on ability to constantly reorganise itself, introducing changes in the firm structure, its functions, products and markets – thus organisational change and change management have become key competences [Walas-Trębacz 2009]. However, it turns out that relatively few Polish companies (34.4%) combined implementation of ICT with introducing relevant complementary changes. It is symptomatic that organisational change took place more often in large and medium-sized enterprises (about half of them indicated such practice) than in small and micro-enterprises (respectively, 29.9% and 20.8%), and in these companies which recorded steady revenue growth in 2012–2014[15].

The complementary changes were introduced mostly in the area of work organisation (in ¾ of companies which reported any kind of change), the management processes, and organisation of information flow within the company. In less than half of the companies ICT implementation entailed additional training for the employees (Tab. 4). Familiarising employees with new technologies is an important activity that determines efficient use of these new technological solutions. It seems that that this area (related to investing in the company human capital) remains underestimated in the framework of a comprehensive approach to ICT investments.

15 This observation confirms indirectly that combining ICT investments with complementary changes leads to improved business performance (enhanced productivity).

Table 4. ICT complementary changes in selected areas by company size (in %)

Type of change/Company size	Micro	Small	Medium	Large	Total
Work organisation	64.0	69.6	67.9	74.2	72.2
Management processes	51.2	50.0	51.8	65.6	58.0
Organisation of information flow within company	43.0	57.1	52.7	59.1	55.6
Additional training to the employees	26.7	30.4	50.0	52.7	43.8

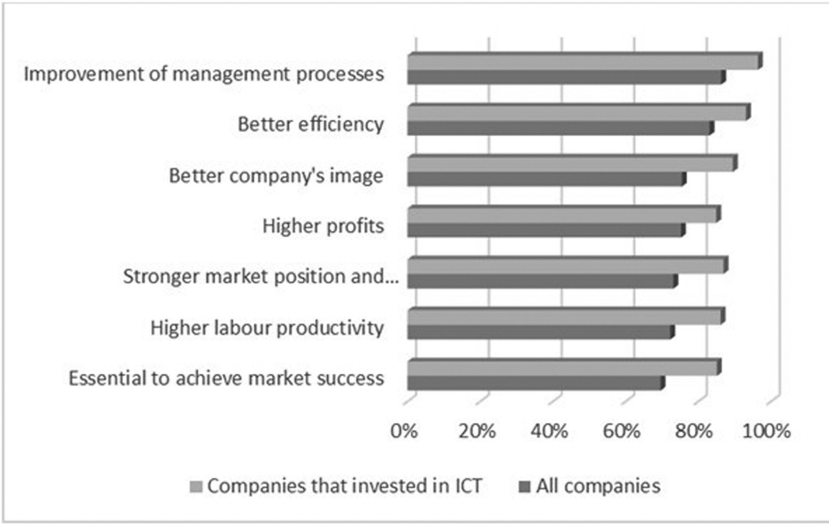
Source: own calculations.

This observation seems to be of key importance especially for micro-enterprises, which traditionally face greatest challenges as for potential of human capital and human resources management. They are least likely to provide additional training for their employees while implementing new ICT solutions. These are the large companies which usually declared introduction of complementary changes (Tab. 4) [Arendt 2009]. As a rule, the larger company is, the more often it combines ICT implementation with complementary changes, although this relationship is not always a linear one.

Introduction of organisational changes shows only that there is interaction between ICT and business processes within a company. The most important issue, from the point of view of the company, is whether implementation of Information and Communication Technologies generates positive and measurable effects. This may be captured in a descriptive manner by analysing statements provided by company representatives who subjectively assessed the value of ICT for the company. Improvement of management processes, as the effect of ICT utilisation, was the point raised most commonly by the respondents (86%).

Although this category is rather difficult to express in money terms, it certainly has a positive effect on company bottom line. The next area was the growth of company efficiency (economists would say about productivity growth) pointed out by 83% managers. ¾ of the respondents were of the opinion that the use of ICT leads to increased profits (financial effect) and also improves the image of the company (marketing effect). Consequently, the use of Information and Communication Technologies strengthens the market position and competitiveness of the company (73%). Another positive (and measurable) result of the ICT implementation was improved labour productivity (72%) (Fig. 4).

Figure 4. The effects of ICT utilisation in the Polish companies (in %)



Source: own calculations.

This last statement was additionally tested to confirm or reject managers' subjective assessment. Economic theory (regardless of whether the neoclassical theory, the theory of human capital is taken into account) explains the relationship between employee's wage and her/his productivity. It is assumed that wages reflect the employee (marginal) productivity – when productivity is increasing, wage should follow this upward trend. In case of this research study, this pattern can be verified by analysing the relationships between the average gross wages in the enterprise and the claimed increase in productivity. And it appeared to be proportional – that is, with the increase of the average wage, the percentage of companies that indicated a positive impact of ICT on labour productivity also grew. It points out that there is positive relationship between ICT implementation, organisational change and productivity growth in Polish enterprises[16]. Nevertheless, research study conducted by the Polish Agency for Enterprise Development revealed that introduction of new technologies as well as organisational changes are not perceived by the Polish entrepreneurs from small and medium-sized enterprises as effective methods for coping with growing competition [Konieczna-Sałamatin, Stasiowski 2014].

16 Arendt and Grabowski [2015] confirmed this hypothesis with the use of two-step econometric modelling, whereas Kamińska and Dzwonnik [2009] showed that ICT is an enhancing factor of product and process improvements in the Polish companies.

4. Conclusions

The paper is one of the first in Poland that examines the link between implementation and utilisation of Information and Communication Technologies, and organisational change in the Polish enterprises. The logic of the analysis was based on the conceptual model (Fig. 1) derived from the seminal work of Milgrom and Roberts [1990]. The model, which has been widely accepted by the researchers, implies that the organisational change is a key complementary driver of productivity growth related to ICT utilisation at the firm-level.

It seems that Polish enterprises acknowledge the importance of Information and Communication Technologies. This was confirmed by the managers: 70% of them were convinced that in today's world, the use of ICT is a vital condition for market success. Many companies invest in ICT – and even if the average scale of investment is less than 20% of total investment spending, it shows that the enterprises try to be in line with the newest technologies, as access to modern ICT is a prerequisite to take advantage of the usage opportunities. The study revealed that surveyed enterprises implemented ICT in, on average, 3 to 4 (out of 9) business processes, with perceptible difference between micro and large companies. The only exception was customer relations management, where CRM systems were utilised almost to the same extent regardless of the size of the company. One of the areas of ICT utilisation, which is underdeveloped in Polish companies, is e-learning. At the same time, e-commerce is getting more and more important for Polish enterprises, however still more firms buy than sell their products and services on-line. Nevertheless, these companies which witnessed growing e-commerce activities recorded better results (in terms of revenues growth between 2012 and 2014) than other firms.

The survey results are, in general, similar to trends reported in other studies focusing on ICT utilisation in Polish companies. However in some areas (especially in case of e-commerce) the scale of ICT use was higher in comparison with CSO data. This phenomenon may be explained by the fact that survey encompassed only these companies, which were active ICT users, while CSO analyses all companies, including these which do not use ICT at all. Moreover, our dataset covers micro-enterprises, which on average are not leaders as far as ICT utilisation is taken into account, but some of them treat ICT as an crucial factor to create competitive advantage.

The study argues that the holistic approach to ICT utilisation in Polish companies is not as much popular as expected. Only 1/3 of enterprises combined ICT implementation with organisational change, which implies that there is still large unexploited potential, especially in micro and small firms. But even these companies, which followed this conceptual model, did not pay enough attention to the need of employee retraining, which is an important factor that determines the efficiency of technology implementation. It seems that human capital and human resources management remains the most underestimated areas in the framework of a comprehensive approach to ICT investments.

Companies that invested in ICT and widely utilised these technologies reported better results (in terms of efficiency, productivity, market image). It is easy to imagine that these results could be even better if these actions were complemented by organisational changes to a broader extent – then we shall see higher productivity in the company sector. This is an important issue, as it determines the convergence processes between Poland and developed economies in the micro and macro scale.

These conclusions give a basis to formulate recommendations for companies and policy makers. The first group should understand that every implementation of new technology (including ICT) is a complex endeavour, which encompasses not only purchase of the technology, but introduction of interrelated changes in business processes, work organisation, provision of training to employees and creation of solutions aimed at continuous development of skills required to efficient use of this technology. At the same time, policy makers shall focus on promoting and implementing such model of support (especially within the framework of EU-funded programmes), in which granting funds for technology implementation is combined with providing consultancy and training services for companies. It has been recently done a lot in order to create such model, however there is still a lot more to do to make it an effective tool enhancing productivity in Polish companies.

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New Regulation of Non-financial Disclosure in Business Reporting**

Abstract: Improvements to the credibility and transparency of the information disclosed by companies is a challenge for practitioners and legislators. In this paper we focus on the latest EU Directive provisions coming into life in 2016 on the disclosure of non-financial information in business reporting. The aim of this article is to analyze this novel legislation of the European Parliament bringing changes to the business reporting on non-financial information and its expected implications. In this article theoretical and legal research method has been applied, as well as the study on the legal status and application conditions of the new international law concerning non–financial operation disclosure that is to be applied also in Poland. The thesis of this work is that the new EU directive is an answer to the long debate on the non-financial information disclosure aimed at improvement of the transparency and credibility of business communication with the stakeholders and theoretically is expected to contribute to a more sustainable economy. An attempt of the critical evaluation of the new law application conditions and effects concludes this work.
Key words: non-financial reporting, Directive 2014/95/EU

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Introduction

In today's global business environment it is becoming increasingly clear that traditional financial information disclosure is not meeting the requirements of its users. The characteristics of the market in which business units operate nowadays, like e.g. fast worldwide economic development on the one hand and the resource scarcity, population growth, and climate change on the other hand, together with the increased expectations and external pressure on the business for enlarged responsibilities have to be taken into consideration not only in the strategic and operational management actions but also in the external reporting. Uncertainty, high risk and frequent financial scandals make stakeholders more demanding and pressuring for higher quality, credibility and transparency of the financial and non-financial information disclosed by companies. As an institutional answer to this requirement the European Union decided to issue the new regulation; on 15 November 2014 the Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups ("The Directive") has been published in the Official Journal of the European Union.

The main aim of this article is to analyze the provisions and expected implications of the new law changing the requirements concerning the disclosure of the information by large companies of public interest. The new Directive is an important change bringing new requirements to the companies and constituting a new and important challenge for their accounting systems. The disclosure of information required by the novel law until now was performed on the voluntary basis.

In this article theoretical and legal research method has been applied as well as the study on the legal status and application conditions of the new international law concerning non-financial information disclosure that is to be applied also in Poland. The literature studies, analysis and interference were applied as the auxiliary research methods. The thesis of this work is that the new EU Directive is an answer to the long debate on the non-financial information disclosure that theoretically is aimed at improvement of the transparency and credibility of business communication with the stakeholders. It expresses an important endeavour of the legislator in the long lasting process that today becomes more formalized and concretized with its expected implications to the future development of more sustainable economy. In this article the importance of the non-financial information will be stressed and the need of its better disclosure in the business reports will be highlighted. An answer to this needs is the new Directive – this article will explain its main provisions. As a conclusion, the attempt of the critical evaluation of the new law implications will be presented.

The importance of the non-financial information and its disclosure

Traditionally, the success of companies was judged mainly on the basis of its financial performance described through the financial measures e.g., net income, turnover, earnings per share, return on investment – the information that was easily retrieved from financial statement. With the changes in economy, firstly with the knowledge economy dominium bringing the concept of Intellectual Capital as the principal source of companies' wealth, and further with the increased spectrum of responsibilities imposed on companies expressed in the Corporate Social Responsibility notion, the traditional approach to the business evaluation was strongly criticized. Concentration on purely financial performance indicators was assessed as being short term oriented and disconnected with firm's long term goals [Lev 2001, Ittner and Larcker 2001]. The problem of obsolescence of the traditional accounting system in the recognition, valuation, and reporting of intangibles and the disclosure of exclusively financial information was a subject of critique of e.g. Eccles and Mavrinac1995, Amir and Lev 1996, Lev and Zarowin 1999. According to Tollington [1994], balance sheet in the way it is constructed leads to distortion of certain elements to such a degree that it cannot be accepted any longer and must be revealed, if professional credibility is to be preserved. The utility of traditional accounting and reporting based on financial information is declining [Roslender 1997]. The usefulness of reported earnings, cash flow and book (equity) values have been deteriorating [Lev and Zarowin 1999]. The Jenkins committee [AICPA 1994] concluded that the financial accounting model is inadequate in meeting the information needs of investors and that the investors need more disclosure on their non-financial key performance indicators. The reasons of the disclosure of non-financial information and non-financial performance measures are briefly presented in the table number 1.

As Deloitte [2014] states "Investors are nowadays more interested in non-financial information, in order to have a comprehensive understanding of a company's development, performance, position ad impact of its activity. They thoroughly analyze this information in their investment decision". As a consequence of the growing importance of non-financial information disclosure on the customers/ investors decisions, companies were called to supplement their annual reports with this information [Bouwman et al. 1987, Lev 2001, Enhanced Business Reporting Consortium 2005]. Many companies answered to this request on the voluntary bases [Eccles et al. 2001, Upton 2001, Stanford 2011] firstly in the form of Intellectual Capital Report that was further replaced by reporting including issues concerning also the impact of the company on the environment in a form of Corporate Social Responsibility Reporting, Environmental Reporting, Integrated Reporting or similar documents.

Table 1. Reasons of the non-financial information disclosure

Reason of non-financial information disclosure	Authors that confirm that reasons in their research
Analysts refer to non-financial measures in their company reports and pay considerable attention to these measures in making decisions	Previts et al. 1994, Breton and Taffler 2001, Demsey et al. 1997, Low and Siesfield 1998
Non-financial measures are useful because they "both reflect and affect financial value"	E&Y 1997
Non-financial measures help link managements' actions to company's financial results and future earnings estimates	Epstei and Palepu 1999, Rajgopalan et al. 2003
Non-financial measures influence firm's fundamental value	Amir and Lev 1996, Dhaliwal et al. 2010
Non-financial measures are positively associated with analysts' forecast accuracy	Orens and Lybaert 2007, Vanstraelen et al. 2003
The value of the financial measures is increased by their interaction with non-financial measures	Maines et al. 2002

Source: own work based on Ghosh and Wu [2012].

The principle of transparency of financial and non-financial information reported by companies is a pillar of the integrated capital market and its affirmation contributes to the creation of sustainable global economy combining business profitability with responsibility for the environment. As Mouritsen, Bukh and Marr [2005] underline, "the advent of the knowledge economy has increased the importance of knowledge – based resources. However the majority of these resources are not reported in the traditional balance sheet. This has created an information gap in the market, and more firms and organizations are calling for voluntary disclosure of these knowledge-based resources and intangible assets to close the gap". Many authors, like Eccles and Mavrinac [1995], Lev and Zarowin [1999] Amir and Lev [1996] underline that there is a lack of relevance of the accounting information, thus leaving investors without appropriate information for decision-making process. In order to make financial reporting of companies more relevant for investors, the financial statements should give more attention to intangibles.

The New Directive of the European Parliament on the non-financial information disclosure

In 2013 the European Parliament issued two important resolutions called "Corporate Social Responsibility: accountable, transparent and responsible business behaviour and sustainable growth" and "Corporate Social Responsibility: promoting society-'s interests and a rout to sustainable and inclusive recovery". Both these documents acknowledge the importance of the non-financial information disclosure by business units, mainly concerning sustainability issues, especially social and environmental factors. As a result of works that follow the above mentioned concept and that fall in line with the general communicate of the 13 of April 2011 of the European Commission entitled "Working together to create new growth", on 22 October 2014 the Directive 2014/95/EU of the European Parliament and of the Council was issued. This Directive is amending the previous document – Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups. The main aim of the new directive was a creation of the legislative proposal on the non-financial information "by undertakings allowing for high flexibility of action, in order to take account of the multidimensional nature of corporate social responsibility (CSR) and the diversity of the CSR policies implemented by businesses matched by a sufficient level of comparability to meet the needs of investors and other stakeholders as well as the need to provide consumers with easy access to information on the impact of businesses on society" [Directive 2014/95/EU].

The Directive 2014/94/EU of 22 October 2014 was published on 15 November 2014 (PbEU L330/1). It should be implemented by 6 December 2016 and is applicable as of 2017. It regards large undertakings[1] which are public-interest entities[2]. Smaller companies will have no new requirements.

1 Having an average number of more than 500 employees

2 The most recent definition of public interest entities is included in Article 2 point 13 of Directive 2014/56/EU and is as follows: "'Public-interest entities' means:
(a) Entities governed by the law of a Member State whose transferable securities are admitted to trading on a regulated market of any Member State within the meaning of point 14 of Article 4(1) of Directive 2004/39/EC;
(b) Credit institutions as defined in point 1 of Article 43(1) of Directive 2013/36/EU of the European Parliament and of the Council, other than those referred to in Article 2 of that Directive;
(c) Insurance undertakings within the meaning of Article 2(1) of Directive 91/674/EEC or;
(d) Designated by Member States as public-interest entities, for instance undertakings that are of significant public relevance because of the nature of their business, their size or the number of their employees".

Large public companies must disclose a "non-financial statement" in their Annual Report including as a minimum information on environmental, social, and employee matters, respect for human rights, anti-corruption and bribery matters. Regarding these areas, the statement will include:

- a brief description of the organization's business model
- a description of its policies relating to those matters, including their results, risks and how company manages those risks,
- non-financial key-performance indicators relevant to the particular business.

If no policy to one or more of these matters are pursued, company shall provide a clear and reasoned explanation for not doing so.

The new Directive states that while preparing the non-financial information to be disclosed, companies may rely on national, EU-based or international frameworks. It does not expilicite name them, but the possible example sets of guidelines and frameworks to be used are:

- United Nations Global Compact (UNGC) 10 Principles
- Global Reporting Initiative (GRI)
- OECD Guidelines for Multinational Enterprises
- ISO 26000
- *AccountAbility's AA1000 Standards*,
- CERES (Coalition for Environmentally Responsible Economies) Principles
- Carbon Disclosure Project,
- *SustainAbility* Global Reporters Program (with *United Nations Environment Programme*),
- International Federation of Accountants (IFAC) *Sustainability Framework*,
- European Federation of Financial Analysts Societies (EFFAS) ESG Framework,
- *Prince of Wales' Accounting for Sustainability's Connected Reporting Guidance*.

Member States shall ensure that the statutory auditor or audit firms check whether the non-financial statement or separate report on non-financial information is provided and it may require the information included in these documents to be verified by an independent auditor.

Additionally the new Directive states that the companies to which it apply should increase the diversification of the Board of directors to ensure the proper control of the management and strong governance of companies and therefore they have also a new disclosure requirement in the corporate governance statement. They are obliged to provide information on their diversity policy in relation to their administrative, management and supervisory bodies. This information should include aspect such as age, gender, educational and professional backgrounds, the objectives of the diversity policy, its implementation and results. Organizations that do not apply a diversity policy will be requested to explain the reasons.

The expected effects of the new Directive and problematic issues

As the assumption, the main objective of the new Directive is the increase of the European companies' transparency and performance on environmental and social matters. This should give an input to long-term economic growth and higher employment. Expected results relate to the increased comparability; the new Directive generally introduces equal rules for all, in order to reduce costs of companies operating in different countries and to ensure that investors are well informed. The new law should theoretically contribute to the improvement of business performance evaluation and therefore lower risk and more rational investment decisions.

However, apart from theoretical positive expected implications of the new Directive there are also many problematic issues and controversies surrounding it. From the practical point of view the companies will have to decide who will prepare new enlarged set of information in the company to be disclosed, in what format, what will be the cost of the increased information disclosure and include it into yearly budget. The accounting, reporting and information systems will have to be adjusted to the new requirements. It will be concerned with additional costs, time needed and effort. Companies will surely judge if the additional cost will be compensated by the profits achieved from this new way of reporting. The dilemmas concern also the way of the internal control of this information as well as the its external verification by auditors. As for now the directive is flexible, stating that only the presence, not the content, must be audited. The content may be audited on the voluntary basis. However, if the companies decide not to audit it, will this information present a value for the investors? And if audited, it concerns additional costs. Moreover, research confirms that increased complexity of a task (and non-financial information disclosure means more complexity of the audit) adversely affects judgment quality [Payne et al. 1988]. Therefore, more efforts and higher costs are expected in auditing of companies that are associated with more complex information presented in their financial statements.

The new law imposes the obligation of disclosure of certain indicated elements of non-financial information, however it still leaves a voluntary detailed content of this information and freedom in the way/framework of it presentation. It means that companies again will have high autonomy in choosing the method and in fact also the essence of information disclosed. This may lead to opportunistic choices and again treating the non-financial information disclosure as the marketing tool or PR of company instead of the transparent way of communication presenting true and fair view of the business. Many studies confirm that the proper CSR communication showing positive aspects of the business in this field may have very tangible and profitable consequences [e.g. Coombs and Holladay 1996, Brown and Dacin 1997, Dawar and Pillutla 2000, Dean 2004, Klein and Dawar 2004, Porter and Kramer 2007, Mullerant 2009, Vanhamme and Grobben 2009, Aras and Crowther 2010], therefore the temptation to manipulate the information and choose only positive data to publish is high. There is a growing sense of public concern and misbehaviour concerning rather irresponsibility of "big business" and the dubious quality and sincerity of CRS disclosure. The latest studies' findings indicate even that today the CSR disclosure is not positively valued by investors, fails to provide information that is relevant for assessing firm value and may be basically driven be legitimacy motivations [Cho et al. 2015]. The new Directive has not much power to change it. By 6 December 2016 the EU is supposed to publish the non-binding guidelines on the non-financial information reporting, including non-financial key performance indicators. Their widespread adoption by practitioners could help in elimination to some extent of the opportunistic choices on the information disclosed and bring more comparability. However, strong efforts are needed to encourage their implementation as many international endeavours, including also those of EU, on the adoption of the voluntary guidelines on Intellectual Capital reporting (again on intangibles so non-financial information) in the past were commonly ignored and therefore this kind of reporting did not play an importance that was expected.

Stakeholders need information of the wide range of business activities, also non--financial information. However, it is also important to find a sound balance between the needs and skills / abilities of information assimilation. Stakeholders should not be overwhelmed with the information disclosed by companies. Too much information, difficult for understanding and analysis may be an adverse result of the new law. An overload of information may impair the use and interpretation of corporate performance measure [Cauvin et al. 2013] and blur the picture of the company.

On the other side, we risk that some companies will not disclose the non-financial information at all as there are no sanctions explicitly stated in the Directive for not implementing it. Therefore, the question is what if the company decides not to introduce it, or to introduce it in a very narrow and limited understanding showing only selective and opportunistically chosen information. As there are no clear sanctions of not implementation, companies may decide that their commercial confidentiality and protection of business secrets, that after revealed could destroy their competitive advantage, are more important that application of the Directive.

Conclusions

Disclosure of non-financial information helps measurement, control, and management of the business activities and their impact on society. It also improves the communication with stakeholders bringing more transparency, indicating risk areas therefore bringing more trust of both consumers and investors. The idea of the legislator while implementing new Directive was to achieve these scopes. Undoubtedly, the novel law is an important step towards achievement of these results and is an important formalized endeavour of the European Parliament in the customizing non-financial information reporting to the needs of stakeholders, however it is still connected with many practical problems and difficulties mentioned in this article. Non-financial information reporting is related to many controversies and dilemmas and practice soon to come will prove if the theoretical scope of this Directive will be achieved.

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Medical Contracts as a Specific Source of Financing Health Care in Poland

Abstract: The paper analyses medical contracts as one of the sources of health care financing. Against the background of the range and organization of health care the sources of its financing were presented with special focus on medical contracts. The procedure of concluding contracts and changes in the methods and forms of their implementation were analyzed. This allowed to formulate assessments of this form of financing medical services and outlining changes in this area.
Key words: Health care, organization, financing, medical contracts

Introduction

Health and its protection are the most important problems of human existence. Loss of health causes serious financial consequences not only for an individual but also for the general public.

Medical services market is a special market, because the demand here is much higher than the supply, which is influenced by the amount of financial resources earmarked for provision of services by medical entities.

The aim of this paper is to evaluate medical contracts as one of the sources of financing health care in Poland.

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The hypotheses are as follows:

Medical contracts are the main sources of financing public healthcare.

There are many weak points of the complicated medical contract system and it needs correction.

Current organization of health care and sources of financing will be presented against the background of the concept and range of health care, with particular emphasis on the role of medical contracts in its financing.

Medical contracts are the cause of many controversies, therefore the presentation of the principles of their implementation will allow to assess their role in health care financing.

The concept of health, health care and medical care

The concept of health developed over the centuries.

Without going into a discussion on the etymology of this phenomenon and the changes in approach to its understanding, we can say that contemporary definitions of health developed at the beginning of the twentieth century. It was then realized that the concept of health goes far beyond the area of medicine and that setting the border between health and disease or between physiology and pathology is very difficult [Indulski 1984, p. 73]. Considerations on this subject resulted in a number of definitions relating to health. The authors of the review paper „Review Article" divided these definitions into three categories: biological, functional and biological-functional [Gil, Dziedziczko 2004, pp. 250–255].

The first category focused on the biological aspect of health, defining health as a certain somatic state of an individual having specific parameters specified by a doctor based on medical examination.

The second category comprised functional-social aspects of health, defining health as a state of an individual that allows him/her to perform his/her assigned role in society.

The third category was related to biological-functional aspects of health. It comprises the latest and the most common definitions that combine biological, psychological and social phenomena.

In this perspective, health is most commonly understood not only as „the absence of disease or infirmity, but the well-being and the degree of biological, psychological and social adaptation that is achievable for an individual in the most favourable conditions" [Sygit 2014, p. 21, Korczak 2001].

Health is the value of an individual but at the same time – it presents a concrete social value. It is therefore, the most important problem of the existence of a man and society. Thus, the measures aiming at protection of health belong to the fundamental functions of the state in relations with its citizens [Indulski 1984, pp. 11–13].

In the literature there are many definitions of health which state that it is omnidirectional and organized activity aimed at providing citizens with the best possible health conditions [Sidorowicz, Kiedlik 2002, p.11]. Measures aimed at the protection of health must be omnidirectional and require the cooperation of many organizations. In particular, they relate to the sanitary conditions, infectious diseases, hygiene, immunization, health education, implementation of health programs etc. However, there can be no health protection without a functioning health care. For many years it has been the object of interest of many disciplines such as medicine, sociology, psychology, and, recently, economics and management [Rudawska 2007, p.13].

The definitions of health care emphasize its institutional character. Securing health needs of the population depends on the cooperation of public administration institutions and institutions providing health services. The aim of this cooperation should be to ensure physical, mental and social condition of the population [Sobiech 1990, p.10].

The range of health protection

Contemporary range of health protection goes far beyond the health sector and requires the cooperation of many other sectors of social and economic life. The range of their activities should a. o. include:

- supervising environmental conditions,
- elimination of social diseases,
- dissemination of health education,
- organizing medical care [Dercz 2005, pp. 36–38].

However, the most important activities in the field of health protection relate to the phase of the disease. Such activities take different forms – from prevention to recovery. They comprise:

- non-specific prevention, which includes activities related to health promotion and health education. It is addressed to the entire population, regardless of age or social environment,
- focused (specific) prevention, which includes all hygienic and anti-epidemiological activities (vaccination, screening). It is addressed to certain risk groups exposed to a particular disease (e.g. age or gender group)
- treatment, includes activities aimed at early diagnosis and effective treatment of the disease and ultimately at reducing the impact of the disease,
- medical rehabilitation refers to the phase in which the disease has developed, limiting functions of the body or completely damaging them. The purpose of rehabilitation is to prevent the perpetuation of pathological changes. The actions are taken in physical, mental and social direction.
- terminal care relates to people terminally ill, requiring constant care [Indulski 1984, p. 45].

The organization of health care in Poland

The range of health protection is a result of cooperation between institutions forming the organization of health care and influencing the form of this organization.

The organization of health care in Poland was changing mainly due to the changes in political and socio-economic systems.

After the system changes that took place after 1989, the organization of health care underwent some modifications. It was after 1990 when the form of health care organization was fundamentally changed by creation of Sickness Insurance Funds (Kasy Chorych) which were entrusted the funds allocated for health care. Sickness Insurance Funds became a payer of the public health insurance system, independent from the state budget. The foundation of this new organizational form was introduced by the Act of 1997 [Karpowicz 2005, p. 27] which set the rules for contracting health services by Sickness Insurance Funds. The tool for collecting funds for Sickness Insurance Funds was the health insurance contributions acquired by Social Insurance Fund (ZUS – Zakład Ubezpieczeń Społecznych) and Agricultural Social Insurance Fund (KRUS – Kasa Rolniczego Ubezpieczenia Społecznego).

The system of Sickness Insurance Funds was liquidated due to the critic of the rules of contracting, access to health services, etc.

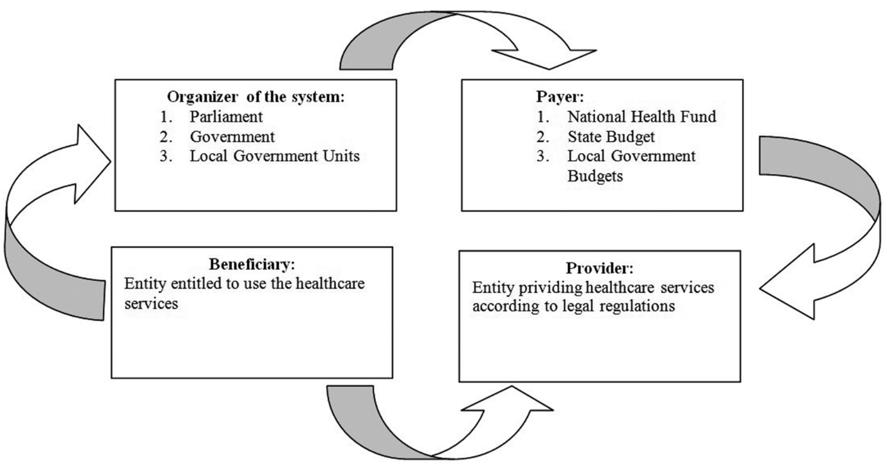
The law regulated the tasks of public authorities at all levels, regulations on the use of health services, conditions of their contracting and financing, and operation of the National Health Fund.

This Act was amended many times. E.g. in 2009 the regulations were introduced defining mechanisms of creation of the „basket of guaranteed medical services" and the statutory framework for the functioning of the Agency for Health Technology Assessment (AOTM – Agencja Oceny Technologii Medycznych) [Dz U nr 118 poz. 989].

The tasks in the area of health care were divided between the funding institutions (NFZ), institutions regulating health policy (Minister of Health) and institutions supervising the functioning of the health care system (Ministry of Finance and the State Sanitary Inspection) [Suchecka 2011, pp. 53–54].

A more detailed analysis of the health care system in Poland requires including in its structure the organizers of this system, the payers, providers and beneficiaries (see diagram 1).

Diagram 1: Organization of the health care system in Poland.



Source: http://www.dgtelemed.de/downloads/symposium-cottbus-o6-09/vortrag-Lobacz-250609.pdf. Symposium: Chances and possibilities of telemedicine in Brandenburg and in Poland, Cottbus 2009.

The organizers of the healthcare system in Poland are: the parliament, the government and local government units. The system of health care in Poland is based on the combination of insurance and budgetary financing. Health insurance contributions of citizens are therefore the main source of funding. These contributions are collected by the National Health Fund – the payer. The main tasks of the National Health Fund include:

- setting quality and availability of services and cost analysis,
- contracting health services with providers, monitoring and accounting for health services,
- financing services
- implementation and financing of health programs,
- promotion of health,
- maintaining the register of the insured.

Apart from the NFZ, the partial payers are also the state budget and budgets of local government units.

The state budget finances mainly highly specialized healthcare services, emergency medical services, health policy programs, as well as the provision of services to persons not covered by compulsory insurance. The budgets of local government units finance the tasks arising from the rights of the founding body.

Service providers can be private and public entities [Dz U nr 118 poz. 989]. They include:

- entrepreneurs,
- independent health care facilities.
- budgetary units, including state units established by the Minister of National Defence, the Minister of Justice, Minister of Internal Affairs and Head of the Internal Security Agency,
- research institutes,
- foundations and associations,
- churches and religious associations,
- individual or group medical practice,
- Individual or group practice of nurses,
- limited partnerships or budgetary units set up by the State Treasury represented by the minister, provincial governor (Voivode) or central public administration body,
- capital companies and budgetary entities created by local governments.
- capital companies created by medical university.

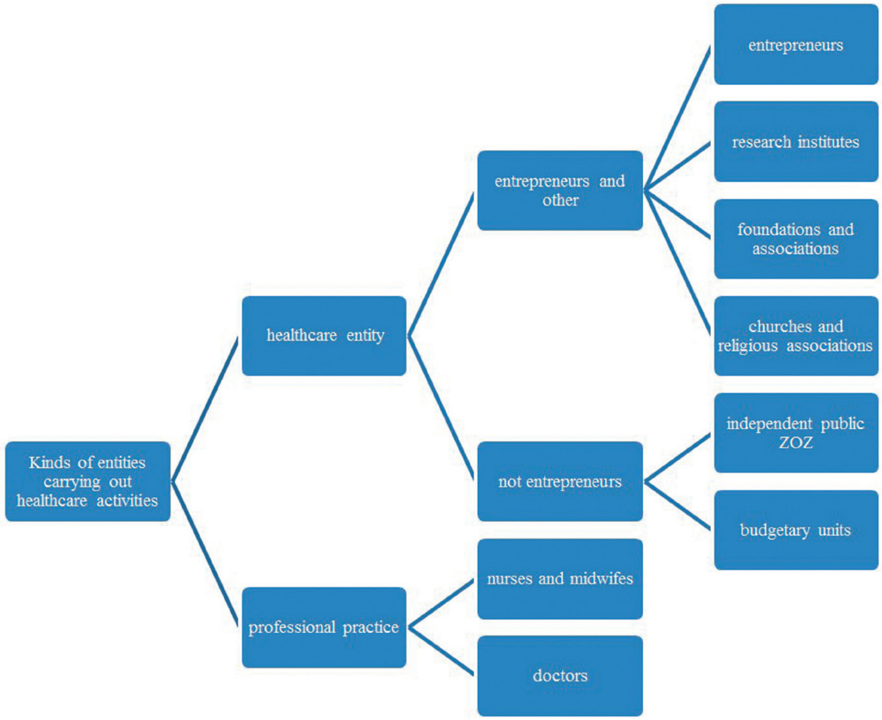
Providers provide healthcare services to beneficiaries, that is the persons entitled to benefit from these services. The beneficiaries entitled to services financed from public funds are:

- individuals having public, compulsory and voluntary health insurance (insured persons);
- people living in Poland and having Polish citizenship who are not insured but meet the income criteria;
- people living in Poland and having Polish under eighteen years of age;
- women during pregnancy, childbirth or the postpartum period.

Health Care Facility as a major provider of medical services

Medical activities can be performed by healthcare entities or in the form of professional practice (see diagram 2).

Diagram 2. Types of entities performing healthcare activities.



Source: own elaboration.

One of the fundamental and at the same time complex organizational and legal forms of providing healthcare services to the public is a Health Care Facility (ZOZ).

The first law regulating the activities of the Health Care Facilities after the political changes was the Act of 1991 [Dz U nr 91 poz. 408]. Health Care Facility term meant „organizationally separate team of people and assets, created and maintained in order to provide health care services and to promote health" [Dz U nr 91 poz. 408]. ZOZ could also be created with the aim of conducting research and development activities, as well as carrying out teaching and research in connection with the provision of healthcare services and promotion of health. The Act introduced a dichotomic division of healthcare institutions into public and private. The criterion for this division was the type of entity that created ZOZ.

A non-public ZOZ could be created by anyone, while public ZOZ were created by:

- minister or central government authority,
- province governor (Voivode),
- local government unit,
- public medical school,
- public institution offering teaching and research activities in the field of medical science,
- Medical Centre of Postgraduate Education.

Among the public health care facilities, independent public health care facilities (SPZOZ) constitute a separate category. SPZOZ acquires legal personality upon being entered into the National Court Register (KRS). It can then take actions on its own and on its own account. Therefore SPZOZ is a healthcare entity but not an enterprise.

The necessary condition of its operation is achieving positive financial results. SPZOZ conducts healthcare activities within the regulations of the Law on Therapeutic Activity [Dz U nr 112 poz. 654] or the statute.

Sources of financing of SPZOZs

Sources of financing health care in Poland comprise public funds, private funds and other funds that do not fall into the previous two categories.

Public sources of health care financing are the funds from the National Health Fund and other dedicated funds, the state budget, local government budgets, subsidies and other, in the form of shares in public law tributes in a specified amount (e.g. the share in the taxes levied on alcohol products, tobacco, lotteries and games of chance) [Białymicki–Birula 2006, pp, 76–77].

Table 1. Sources of financing health care in Poland

sources		
Public	**Private**	**Other**
budgetary resources	households' resources	Domestic ancillary resources
extra-budgetary resources	own funds of enterprises	Foreign ancillary resources
subsidies	private health insurance	
other		

Source: Own elaboration based on Golinowska S. [2012], Polska: Zarys systemu ochrony zdrowia, European Observatory on Health System and Policies, Warszawa, pp. 91–110 and Golinowska S. Sowa A. [2008], Raport „Finansowanie ochrony zdrowia w Polsce – Zielona Księga II, Warszawa, pp. 13–56.

Table 2. The share of public resources in financing health care in 2011–2013

Public expenditures by level	2011		2012		2013	
	billion PLN	%	billion PLN	%	billion PLN	%
Total	69,7	100,00	70,2	100,0	77,7	100,0
NFZ	58,1	83,0	59,5	85,0	61,7	84,0
state budget	7,5	11,0	7,2	10,0	10,0	10,0
Local Government Units	4,1	5,0	3,5	5,0	6,0	6,0

Source: *Zdrowie i ochrona zdrowia*, GUS, Warszawa 2012, 2013, 2014.

The dominant public source of funds dedicated to financing current activity is the National Health Fund. Its share in public spending for this purpose remains at a stable level of 83–85%.

Private sources of health care financing include households' resources, funds from private health insurance and own funds of enterprises.

Other sources of health care financing include domestic and foreign ancillary resources. The domestic ancillary resources are the funds coming from non-governmental organizations such as foundations, associations, church funds, etc.[Herbst 2005, pp, 36 –37). Foreign funds consist of special funds of agencies of foreign countries and foreign ancillary funds [Sobiech, Rój 2006, pp. 43–35].

Table 3. Structure of health care financing

	2011		2012		2013	
	billion PLN	%	billion PLN	%	billion PLN	%
Total current expenditures	97,673	100,0	101,042	100,0	103,245	100,00
Total public expenditures	69,224	70,9	70,777	70,0	72,420	70,0
- from the state budget	1,973	2,0	2,384	2,4	2,580	2,5
- from the budget of local government units	4,220	4,3	4,097	4,1	4,230	4,1
- from the Social Insurance Fund	63,031	64,5	64,290	63,6	65,610	63,5
Total private expenditures	28,450	29,1	30,271	30,0	30,825	29,9
- expenditures of households	23,397	23,9	24,517	24,3	24,982	24,,2
- other expenditures	5,052	5,2	5,754	5,7	5,843	5,7

Source: Główny Urząd Statystyczny, Departament Badań Społecznych i warunków życia, Warszawa 2013.

Current expenditures on health care are systematically though slightly increasing. It is mainly attributed to an increase in private expenditures, including expenditures of households.

The main sources of health care funding are public funds (70%), mostly funds from the Social Insurance Fund (almost 64%). Private funds mainly come from households (nearly 24%).

The role of medical contracts in financing activities of independent public health care facilities (SPZOZs)

Competitive tenders

The funds raised by the National Health Fund from contributions for mandatory health insurance are earmarked for financing the tasks performed by providers under the contract signed with them. The contract with the NHF can be awarded by means of competitive tenders.

Providers who want to join the competitive tenders must meet certain sanitary-epidemiological and medical conditions.

The competition tender starts with the announcement by the NFZ of the required criteria relating to the qualifications of providers. These criteria are consistent with Polish standards and harmonized with European Union standards.

The whole process of the competition is divided into the open part and the secret part. In the open part the commission announces the number of delivered bids and the number of bids that meet all the criteria.

In the secret part the best offer is selected. This offer should meet the following conditions:

- have the lowest price,
- ensure the continuity of services,
- ensure good quality of services,
- ensure easy access to services.

Forms and methods of financing healthcare services by the National Health Fund

The main source of financing healthcare facilities are the funds provided by NFZ. The legal basis for healthcare services financed from public funds is a contract concluded between the payer (NFZ) and the healthcare provider (SPZOZ). Such contract includes the following issues:

- type and range of the services provided,
- conditions of providing services
- list of subcontractors and the requirements they must fulfil, where provided for in the contract,
- principles of settlements between the NFZ and the healthcare provider.
- amount of the Fund's obligations to the provider.
- procedures of dealing with contentious issues
- procedures of contract termination [Dz U nr 118, poz. 989].

There are different methods of accounting for the basic health care. The most popular and used in polish circumstances are:

- capitation-like payment,
- payment by diagnosis-related group,
- payment for the time of treatment,
- payment from the central budget [Syrkiewicz-Świątły, Hanisz 2010, pp. 71–73].

Capitation-like payment is the newest form of payment for healthcare services. It is based on a fixed, usually monthly fee for the contracted range of healthcare services.

The insurance company is the payer and the facility providing a healthcare service is the recipient. Capitation payment can be combined with direct payment, which means that the patient is charged a small direct payment.

Payment by diagnosis-related group is mainly used as a form of payment for hospital services. The payer establishes reimbursement rates for various medical diagnoses.

Rules of contracting medical services and their financing methods are different depending on the form of services provided by the healthcare facility. Different methods are used in relation to the outpatient health care and in relation to the hospital (inpatient) health care.

Methods and arrangements for funding providers changed repeatedly.

The basis for settlements with the payer (unit of reference) was:

- in 1999. – hospitalization, service
- in 2000. – types of hospitalization, types of services,
- in 2001. – points – the beginnings of point assessments.
- in 2003. – the point system in the hospital sector and in specialist ambulatory care
- in 2008. Diagnosis-Related Groups in hospital sector
- in 2011. Diagnosis-Related Groups in specialist ambulatory care.

The system of accounting for healthcare services was also changing. Different systems were used in ambulatory care and in hospital care. In specialist ambulatory care the way of accounting for services with the payer was changing as follows:

- - 1999 – calculation unit – the patient provided with health care,
    - payment – capitation (fixed, usually monthly fee for the contracted range of services)
- - 2000–2003 – 15% of the capitation payment was earmarked for the financing diagnostic tests for GPs (General Practice).
    - POZ night medical care was made the task of General Practice (POZ),
    - the preferred numbers of patients for doctors, nurses and midwives were introduced,
    - financing of neonatal care was separated.
    - higher capitation payments for specific age groups were introduced.

- - 2004–2010 – financing of specialist and rehabilitation services were excluded from capitation payment.
  - a points-based scale of financing services was introduced. Four types of medical advice were introduced:
    - prescription,
    - diagnostics at POZ level,
    - typical specialist advice
    - specialized treatment,
  - requirements regarding medical equipment were set out,
  - principle of degressive payment was introduced, which meant its decrease after exceeding certain number of services,
  - different levels of financing specialist ambulatory care were introduced according to 3 categories:
    - control visit – 1 point.
    - consultation visit – 2 points,
    - specialist Consultation combined with diagnostics – 2 points,
  - in subsequent years, new types of services with the new point values were introduced.
- 2011 r.

settlement of Specialist Ambulatory Care (SAC) by Diagnosis-Related Groups (DRG) was introduced. It was assumed that it is possible to create a unified and comprehensive classification of medical procedures and assign them the appropriate set of costs [Witczak 2009, p. 110].

In this system, settlements with doctors are based on the prescribed diagnostics and not on the work done.

Individual types of advice were assigned specific types of diagnostic and therapeutic services.

Changes of the types of advice and their assigned products are illustrated in Table 4.

Table 4. Types of advice

Before the introduction of PGU	After the introduction of PGU – since 2011			
Specialist advice – 4 points	Specialist advice			
	1st type 3.5 points	2nd type 7 points	3rd type 13 points	4th type 14 points
comprehensive advice - 9 points	comprehensive advice			
	1st type 6 points	2nd type 14 points	3rd type 18 points	4th type 21 points
Prescription advice - 2 points	hospitalization advice			
	- 4 points realized within 30 days after hospitalization			
Preventive–diagnostic advice according to the catalogue	Treatment services			
	- Catalogue of 409 positions, - accounted for based on the 73 categories that contain sets of procedures related to medical specialties.			

Source: Own elaboration based on materials from health care facilities.

The review of changes in settlements between SAC and the payer shows that over the years the system has become increasingly complex. This is mainly due to the very detailed accounting and settling of individual medical procedures.

In the inpatient medical care the system of settlement between the provider and the payer is also complicated.

- 1999 calculation unit – person hospitalized within a given specialty,
- 2003–2007 – financing – based on 4 main catalogues of medical services
  - conservative services, which were partly (approx. 30%) financed on the basis of the point weights and partly from the general budget of the hospital,
  - treatment services, which included over 800 distinct types of services with the assigned point values,
  - technical measures defined the necessary medical equipment valued using points.
  - separately contracted services included: radiotherapy, chemotherapy, computed tomography, fluorescein angiography, dialyses, etc. [Sienkiewicz, Gielewska 2003],
- 2008 – the catalogue of medical services was given up in favour of 472 of the Diagnosis-Related Groups (DRG) gathered in 16 sections,
  - financing mechanism for hospital services was based on the assumption that it is possible to register and describe the treatment process in two dimensions:

- clinical – by creating a unified and comprehensive classification of medical procedures,
- economic – by developing a set of costs of the use of individual medical procedures [Witczak 2009, p.110].

- the costs incurred by the hospital are settled according to tariffs (flat-rates)
- rates are assigned to clinically uniform cases of the disease, which include diagnosis, realization of medical procedures and take into account the cost-effectiveness [Jednorodne Grupy Pacjentów – przewodnik po systemie 2008, p. 9]
- within the DRG, patients with different ailments are assigned to groups having similar diagnostic and therapeutic approach and of similar cost characteristics,
- among the DRG the following groups were distinguished:
  - treatment groups defined by the realized procedures,
  - conservative groups determined by diagnosis of disease [Jednorodne Grupy Pacjentów – przewodnik po systemie 2008, p. 10].

Accounting for the provided services can be based on two different principles:

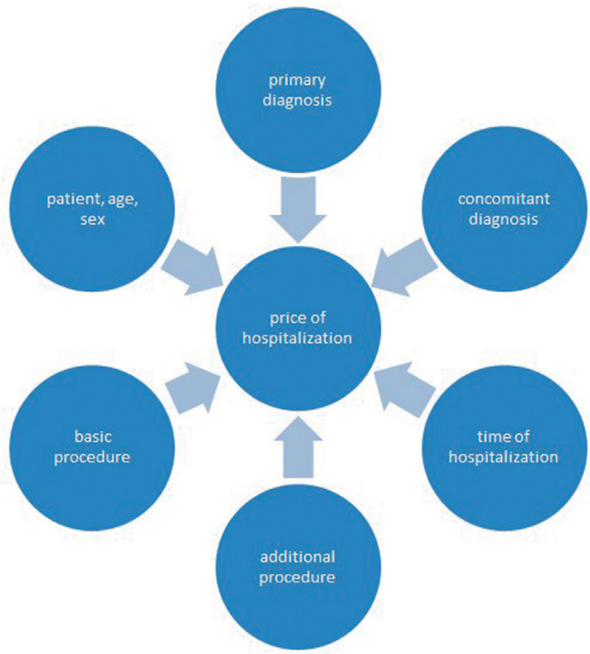
- retrospective, which is based on the reimbursement by the payer of costs incurred by the provider in a specified time,
- prospective, which means financing the provider based on the defined prices.

The retrospective method is rarely used a.o. because providers are not at all interested in lowering the costs of treating patients, as each disbursed amount is refunded to them.

In case of the prospective method the payment for the number of hospitalized patients in various wards, the payment for the number of medical procedures, and the payment for the treated cases with the use of the system of diagnostically diversified groups within the DRG are used.

The price of patient's hospitalization is therefore determined by many factors, including: primary diagnosis, concomitant diagnosis, sex, age of the patient, performed procedures and duration of hospitalization. The main determinants of hospitalization prices are illustrated in diagram:

Diagram 3. Determinants of hospitalization prices



Source: Jednorodne Grupy Pacjentów – przewodnik po systemie, Menadżer Zdrowia, 04/2008.

Public healthcare entities providing medical services do not have a major impact on the amount of funds they receive from the National Health Fund [Syrkiewicz – Świątły, Hanisz 2010, p. 42].

Decisions about the allocation of resources are taken by the payer (NFZ), although in the Law of 2011 [Dz U nr 112 poz. 654] healthcare entities are guaranteed the possibility to negotiate the amount of funds for their activities.

Conclusion

The main goal of health care is to meet the health needs of patients, out of concern for their welfare, which is the supreme good.

Medical services market, due to its nature, is a particular market. On the one hand – the supply of public services provided by healthcare entities is limited by the quantity (and value) of services contracted with the National Health Fund, on the other hand – the needs are unlimited.

This disparity between the demand for public health services and their supply makes it increasingly difficult to meet the health needs of the population. Therefore, the public health care must base its activities on certain principles, which will allow to provide healthcare services to the people the most in need.

On the other hand, the financing of healthcare services must be included in a framework that will allow for rational spending. The problem is even more difficult to solve as both the demographic and technological processes result in a huge increase in health care costs.

The conducted considerations show that the main administrator of public funds for health care is the NFZ. About 85% of funds dedicated to public health care is at the disposal of the Fund.

The question arises whether the resources available to the NFZ are reasonably distributed.

To answer this question this issue should be analyzed from two perspectives:

- procedure of contracting services,
- methods and forms of financing medical services performed by a contracted provider.

Regarding the first issue, the secret part of the competitive tender is an issue of concern. In this part, the Commission selects the best offer that meets all the conditions, namely:

- has the lowest price.
- provides good quality services,
- provides easy access to services.

Objections stem not only from the fact that decisions on the selection of the provider are confidential but also from the fact that the criteria taken by the selection board on the allocation of the resources are very vague and difficult to verify. Moreover, the finality of the decision of the payer and its arbitrariness means that it is not possible for the provider to negotiate the terms of the contract.

As far as methods and forms of financing medical services performed by a healthcare provider that has signed a contract with the NFZ are concerned, there arise many problems. The most important are:

- frequently changing rules of financing providers,
- systematic changes of calculation units, on which settlements made with the provider are based,
- different rules of settlement in outpatient and in inpatient care,

- permanent changes of the types of outpatient advice and of the attributed points
- far-reaching changes in settling medical services in hospital care.
- complex system of settlement of the Diagnosis-Related Groups (DRG), introduced in both hospital and ambulatory care.

These and many other weaknesses of the system of organization and financing health care in our country cause an increasing percentage of households using private medical care.

Central Statistical Office (GUS) studies conducted in 2013 found that over 38% of people using medical services at least once financed it with their own funds. More than 35% of people used outpatient care, and only 3% used hospital care [Zdrowie i ochrona zdrowia w 2013 r., p.163]. This is justified because hospital care is so expensive that it exceeds the capabilities of the average user.

GUS surveys [Zdrowie i ochrona zdrowia w 2013 r., p. 163] also point to the reasons of not using public specialist health care. They show that almost 50% of respondents indicate late terms of visits offered by public institutions, while more than 28% of respondents consider private institutions to be better equipped with medical equipment and materials. It should also be noted that the percentage of people using public healthcare services fell from 42% in 2003 to 37% in 2013, which is not the best evidence of the status of public health care in Poland [Zdrowie i ochrona zdrowia w 2013 r., p.163].

The tendencies are caused not only by economic factors, such as limited financial allocations to healthcare, overly complicated procedures for spending them, or mediocre quality of services, but also by demographic factors, mainly aging processes that require additional funding[1]. Declining population, an expanding group of elderly people, and a small number of economically active persons paying contributions indicate that new rules for financing the healthcare system will be needed.

At the present stage of Poland's economic development, three types of changes are proposed:

- increasing the amount of a contribution,
- improving the collectability of contributions,
- introducing additional sources of healthcare financing.

The first option may be difficult to exercise not only because of negative reactions from the public, but also because of the state having to increase budgetary alloca-

1Rodowy Rachunek Zdrowia GUS, Departament Badań Społecznych i Warunków Życia, Warszawa 2014.

tions to healthcare, as it is responsible for paying contributions for persons who are entitled to health insurance but have no income [Mitek 2014].

To improve the collectability of contributions, the financial documents of enterprises that now safely manipulate their costs to avoid their payment would have to be scrutinised.

A proposal has also been put forward to replace the Social Insurance Institution (ZUS) and the Agricultural Social Insurance Fund (KRUS) that now collect contributions on a commission basis with Tax Offices. This would turn a social security contribution into a sort of a tax. The authors of this concept argue that it would improve the collectability of contributions while reducing the collection costs [Żakowiecki, Arak 2015].

It is, however, doubtful if Tax Offices would be willing to take on additional tasks and if the change can rectify the existing situation.

The introduction of additional sources of healthcare funding such as private insurance would not be welcomed by the public. According to Social Diagnosis 2014, only every fourth person in Poland would buy it, if its price were lower than PLN 100 a month [Mitek 2014].

Nevertheless, it seems that the future of the Polish healthcare system should take into account new rules of financing, used by other European countries. There is a need for carrying out further and wider analysis of solutions adopted by countries that are more successful in financing benefits in the context of continuous changes[2].

2 http://www.obserwatorfinansowy.pl/forma/rotator/nazdrowie-bedz.

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Beliefs of Liquidity Managers about Behavioural Decision-making Determinants in their Professional Reference Group

Abstract: This paper presents opinions and beliefs of financial managers about the factors (especially behavioural determinants of decision-making, including decision traps) impacting decisions related to liquidity made by other similar professionals (professional reference group), based on the results of qualitative research made by the author. According to respondents' beliefs presented during the interviews it seems that what managers think about their "colleagues", thus how they perceive their professional reference group, may have an impact on their own liquidity decisions. Hence, the paper aims to recognize and outline hitherto undescribed phenomenon of reference groups' influence in the area of liquidity management in enterprises and lay the foundations for further population research and analysis.
Key-words: behavioural economy, reference groups, decision making, decision traps, liquidity management

Introduction

Decision-making is a complex process determined by a number of different factors. These factors include those inhering in the decision-maker as in a representative of *homo sapiens* (information processing mechanisms, the way human mind works), or as

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in an individual of certain characteristics that distinguish him from others (personality, motivation, beliefs and attitudes). However, we should not forget that man is a social being [Szacki 1983]. Thus, his actions will also depend on the environment which he operates in and in particular on all kinds of collectives and groups which he belongs or aspires to. The way we perceive ourselves against the so-called „significant other" (the term means „those partners of our interactions or those auditoriums, in front of whom we present ourselves, which are the most important for us and whose expectations we earnestly try to meet" [Sztompka 2002, p. 85]) also has a significant impact on our decisions. Hence, if we apply the aforementioned considerations to the subject of this article, we can say that what liquidity managers in enterprises think about how other similar managers make their choices, can have an impact on their own decisions. These issues can be considered from two perspectives: group decision making and reference groups context.

Group decision-making takes places when a decision is taken by more than one decision-maker [Gunnarsson 2010, p. 17] e.g. by the President, the Chief Financial Officer and the Chief Accountant of a company. Then a group is established in order to solve a particular problem. Its goal is to develop a homogenous position and to take a decision accepted by all members. Group decision-making may entail a phenomenon called *groupthink* [Rose 2011, Janis 1982]. It happens when well-being and group cohesion seems more valuable for group members than thorough analysis of the facts, so they will pass over some important information or opinions. This may negatively affect the decision's relevancy. For example, the chief accountant and CFO, who want to feel as being good members of the group, will skip some "unpleasant" data about liquidity condition of their company, in order to behave in a way that is believed to be accepted by the group. Group decision-making mechanisms and methods are quite an extensive field. They will however not be further elaborated herein as there is no direct connection with the subject of this paper.

Reference groups represent a context with respect to which an individual assesses himself. This in turn affects his attitudes and actions. Reference groups have two basic functions. They are a source of norms, values and behaviour patterns (normative reference groups) or they are a background for the assessment of ourselves and also of various events or situations (comparative reference groups). Having such a reference, an individual may justify his behaviour as per the rule „others are doing so" (positive reference group) or „others are not doing so" (negative reference group) [Aue 2006]. Reference groups are i.e. family, peers, colleagues, and also people of similar competences and similar positions, who can be called a professional group. Thus, in contrast to the group decision making, where the group exists in reality, here the term "group" bears a more abstractive meaning. There are professions where reference groups play quite a big role. These include doctors, lawyers etc., who are associated in various professional chambers and organizations.

The concept of reference groups is rarely undertaken by finance researchers. To some extent it is harnessed by economics, management science or marketing, where the influence of these groups on consumer choices are studied [Hayakawa, Venieris 1977]. Hence, it seems that exploring this issue from the perspective of a person who makes financial decisions (including those related to liquidity) could delineate a new, interesting trend of scientific and research pursuits. This article makes a step in this direction. It can be assumed that the manager's reference group can influence his behaviour, choices and susceptibility to decision traps that may occur while dealing with financial liquidity in a company.

This paper focuses on how managers perceive their reference group when it comes to decisions related to liquidity and factors impacting on it, in particular selected decision traps. It is based on the results of the qualitative research on the factors influencing decision-making in the area of financial liquidity, associated with human traits. The study attempted to discover how liquidity managers perceived the determinants of their own decisions, as well as those made by other professionals, and if they mentioned those related to the decision maker [Korzeniowska 2011], including decision traps (phenomena responsible for the inaccuracy of the probability assessment of occurrence of events, for which we make our choices [Tyszka 2000, p. 11]). The research findings on which traps are present in financial liquidity management and on the level of the respondents' awareness about the existence of such phenomena and their impact on the quality of the final decision can be found in other author's publications [Korzeniowska 2013, 2015].

Method

The subject of the study covered the decision traps mentioned below:

- implied by mood or emotions: rose-tinted glasses effect or dark-tinted glasses effect that distort people's assessment under the influence of their current mood [Tyszka 2000 pp. 42–44]

- arising from a desire to reduce negative emotions: self-deception (human's attempts to protect themselves against unpleasant feelings caused by a bad news) and "sour grapes" effect (adaptation of own wishes or desires to convictions) [Tyszka 2000 pp. 189–196]

The paper aims to provide answers to the following research questions:

1. What were the respondents' opinions about how other professionals make liquidity related decisions and did they mention the factors associated with the decision maker?
2. How did the respondents assess the impact of such decision traps as mood, self-deception and "sour grapes" effect on the decisions of other professionals?

The research was done by means of a qualitative method based on the technique of an in-depth interview with standardized list of required information (36 respondents interviewed). It was conducted in the Lodz region between VI 2011 and II 2012. According to the methodological recommendations on qualitative methods, interviewees were diversified in terms of several aspects [Charmaz 2006, pp. 13–42]. There were people of both sexes, different age, on the positions such as CFO, chairman, chief accountant (professionals dealing with financial management in their everyday work life) etc. employed in companies from different industries, of different size, who had economic background (education, courses, trainings), minimum of 2-year work experience and who made decisions related to liquidity of the company.

Opinions about determinants of decisions made by other professionals involved in liquidity management in enterprises

Among the factors influencing other managers' decisions, as per the respondents' beliefs, the most visible were the economic and the financial ones. The respondents emphasized the role of knowledge, ratios and the environment where the company operates.

„*I think these are the ratios. I think they are focused on the analysis of economic ratios*" (resp. 3, F, older, owner)

„*No no. They must have knowledge. For sure. It must be a competent person. They must be able to anticipate some risks there*" (resp. 18, M, older, owner).

„They are educated, they have formulas, computers...” (resp. 23, M, older, President).

„Certainly a thorough knowledge of the industry and a detailed analysis of current financial returns” (resp. 25, M, older, owner).

There were also statements where some factors related to the decision maker could be recognized. The respondents mentioned such features as experience, age, mentality, character, relationships, intuition.

„But I think it's mainly built by experience. No matter if this is a financier, the owner or anyone else” (resp. 19, M, younger, owner).

„I think it depends on their age. The older they are the more they use the experience and if they are young they have only a knowledge they have acquired” (resp. 29, M, owner, older).

„I think that above all it's a person's character. I know people, maybe there are not a lot of them, that are tight-fisted. Well, for example, no problem to pay 30 days later' or ‚he does not pay on Fridays and on Mondays he feels bad, and in July he goes on holiday and also does not pay.' It is human mentality. If he has to spend the money he is sick” (resp. 10, M, older, owner).

„I'm in contact with some companies and I see that the problem is simply with knowledge. They rely on intuition and then suddenly they are surprised what happened” (resp. 13, M, older, President).

Particular attention should be given to the three utterances below quoted. One can find certain elements which are characteristic for decision traps such as self-deception (the first expression) and risk aversion (the other two statements) [Slovic, Peters 2006, pp. 322–325], which are very important in terms of the study.

„In general it's not good. When it comes to big corporations where they have the procedures then it is well done. Their reliability..., that is another thing, because they like to deceive themselves” (resp. 13, M, older, President)

„Their decisions depend on the salaries they get. It certainly affects how risky decisions they make. What's more... qualifications, risk attitude, because this is an individual case. It's a way of thinking like "I take short contracts, I go somewhere, I earn as much as possible and then I go elsewhere to work and do something else” (resp. 24, F, older, chief accountant).

„It depends on somebody's personality, his attitude towards money. Someone who is a hedger will examine three times before spending some cash, and someone else will take risky decision that may be fruitful” (resp. 31, F, older, President).

To sum up, according to the respondents' opinions, when it comes to determinants influencing decisions of other managers dealing with liquidity, the list contained economic facets as well as those relating to the characteristics of decision-maker. In the second group of factors, beside general human traits such as experience, intuition, character, personality etc., special attention should be paid to two of them, namely self-deception and risk aversion, particularly relevant to the subject of the study as they belong to the category of decision traps.

As far as the question of how respondents perceived themselves against their professional reference group is concerned, a part of them thought that what they said in „their" case is also applicable to the others.

„It seems to me that I'm no exception, and that others think in similar way" (resp. 14, M, older, owner).

Some interviewees, however, claimed that they differ in the way of making decisions from other professionals. Sometimes they were saying that others, in contrast to themselves, make their choices in a better way, as they follow certain financial principles. For example, Respondent 3, when talking about himself, pointed out a role of intuition, and when talking about others he said: *„I put financiers higher than myself. I think they are focused on the analysis of economic ratios*" (resp. 3, F, older, owner). Likewise, in that case the respondent indicated that he does not act this way: *„They must be continuously monitoring... finances, incomes, production volumes, turnover [...]*" (resp. 12, F, older, owner). On the other hand, the answerer quoted below pointed out experience as a major determinant of his own decisions, and for others – knowledge: *„No no. They must have knowledge. For sure. It must be a competent person*" (resp. 18, M, elderly, owner).

Knowledge about scientific rules of liquidity management, therefore, according to the interviewees' opinions, is not only the most important factor impacting decisions of other managers, but constitutes also a desired and necessary element for the respondents themselves. Thus, the respondents' mindset proved that their professional environment could be treated as their normative reference group, a source of certain patterns and standards of conduct [Sztompka 2002, p. 217] that they want to follow.

In other cases the respondents emphasized the role of knowledge, experience, understanding of the market, etc. when talking about themselves. In relation to others, however, they assumed that their choices are determined by personal benefits or mentality. This can be the example of the so-called negative reference group, towards which the attitude is hostile, disrespectful [Sztompka 2002, p. 224]

Respondents' opinions about the impact of selected decision traps on other professionals

As mentioned before, three decision traps were taken into account: the influence of current mood, self-deception and "sour grapes" effect.

As far as beliefs about the impact of mood on decisions concerning liquidity among other representatives of the professional group are concerned, the analysis of the respondents' statements revealed two types of reactions. Some respondents stated that the impact of mood exists as a direct result of human nature and neither professional knowledge nor education can be a shield against it. However it was regarded as a lack of professionalism.

„*It shouldn't, but it may have an influence. The man is just a man*" (resp. 23, M, older, President).

„*I think that there are no cyborgs. He comes to work and he ceases to be a human. I think it has an impact*" (resp. 7, M, older, owner).

„*Sometimes all things "beyond company" move into the company. When someone has a bad mood at home, he brings it to the company. In every profession and for every person it is so, no matter if you are a manager or not...*" (resp. 12, F, older, owner).

„*I think the mood always affects us regardless of what we do. Even if we try to hide it, it subconsciously comes out*" (resp. 15, M, younger, co-owner).

The second type of opinion was that financiers stand a little higher than „ordinary people", therefore their choices base solely on objective reasons and are free of other influences. Here then we have to do with a positive reference group, which the individual aspires to, whose values he deems appropriate and desirable [Sztompka 2002, p. 224].

„*Oh no! It mustn't affect their decisions! I imagine, and so it happens, that if someone analyzes... and I see a financier as someone who analyzes the facts, figures and financial phenomena, so his behaviour must be rational and I expect his behaviour to be free of this type of influence*" (resp. 3, F, older, owner).

As for the managers' susceptibility to self-deception trap (aptitude to protect ourselves against experiencing unpleasant emotions caused by some bad news) respondents presented dissenting opinions. One of them was that people who are professionally involved in liquidity management, are not subject to this trap, second that they are susceptible to it like all other people and their financial education does not protect them. Below some examples of the first attitude:

„I think they look for such information, and check whether the problem is real or false, and then they must search for a solution" (resp. 36, F, older, President).

„The manager's duty is to identify the problems. Once he finds a problem he looks into the root cause of this problem. For those people leading companies who I know, such an approach prevails" (resp. 29, M, older, owner).

What deserves a special attention is that two degrees of susceptibility of other professionals to self-deception were identified, depending on whether they are a business owner or just an employee. A person who has been employed by the company to manage the liquidity (f.e. as CFO) is some kind of „a robot" programmed to capture any signs of trouble and immediately eliminate them. His susceptibility to self-deception is therefore very little or none. He has been assigned certain functions, which he is to implement reasonably and without sentiments. In contrast, someone who manages his own company is, according to the respondents, more vulnerable to this trap, because he takes the company very personally and he is emotionally bound to it. That may interfere with the accuracy of his assessment of the situation and lead to making wrong decision, which may impact negatively the liquidity of the company. Below the relevant quotes:

„It would be stupid. It cannot be this way. Avoiding difficult situations is rather subconscious human action. A person who is a Chief Financial Officer performs his duties in a conscious way. He is programmed to examine the causes of poor financial condition of the company. Maybe business owners who are bosses for themselves can be more vulnerable to this type of psychological impact on approach to liquidity as they have no fear that someone hired them to do their job. In this way the business owners are subject to these mental pressures, subconsciously or not, more than employees" (resp. 25, M, older, owner).

There were also some normative judgments about the lack of such influence on managers:

„No, no, definitely not. Financiers, they should be a totally different kind of people" (resp. 35, M, younger, chief accountant).

„They should not. They should be objective, totally objective and follow the rules, not feelings, not moods" (resp. 34, M, older, owner).

„Well, theoretically it may happen, but I believe it shouldn't happen to liquidity management specialist. I mean, if I hired someone to do such a job, I couldn't imagine that he would just put these problems aside" (resp. 24, F, older, chief accountant).

The following statements are, by contrast, presented to illustrate the opinions stating that professionals involved in liquidity management do not differ from ordinary people and that they may as well "fall into" the self-deception trap:

„They are not perfect. You learn other things at school, other in college, on trainings, and real life is a completely different thing. Many believe that ignorance means there is no problem. I prefer not to see a problem, because then it doesn't exist. This is an illusion. This type of behaviour is frequently observed in large corporations where procedures are developed for all processes, the people are trained, they completed thousands of trainings but they deceive themselves to keep the position. Even the information provided to superiors is flawed and unreliable" (resp. 13, M, older, President).

„They try to protect themselves, but then it falls upon them like a bolt from the blue. You have to collect data every day to know where you are, because then it suddenly falls on you and it's hard to survive. You know when that happens? When you have a nice day ahead and you don't want to take any setbacks on you. Then you put a decision away. But everyone does it, a manager or not" (resp. 1, M, older, owner).

„When they have access to this bad information, they rather try to explain themselves that it's not their fault, therefore, they treat this bad news like being somewhere behind a curtain or glass... they see it, but it does not affect their activities. [...] I think that their behaviour is so much human" (resp. 11, M, older, owner).

Regarding the „sour grapes" mechanism („bending" ones needs so that they are more attainable) [Tyszka 2000, pp. 189–196], the conclusion is that the respondents did not have any consideration whether and how this phenomenon can manifest itself in liquidity situations encountered by other similar professionals. In fact, the interview itself let them realize that such an eventuality may happen. Some respondents, as in the case of self-deception, were of the opinion that this mechanism can equally affect people managing liquidity and "ordinary people". Others, however, believed that liquidity is too important, and it is hard to imagine someone as competent as CFOs or CEOs who could behave this way. Quotes illustrating the first attitude are presented below:

„Well, it may be so... It all depends on the person, on temperament, character, human DNA and nothing more" (resp. 1, M, older, owner).

„It's possible. In my opinion someone's profession has no impact on it" (resp. 5, M, younger, owner).

Below the statements representing the other opinion:

„The percentage of managers who do not know the danger of losing liquidity is minor. So we can't expect that such a thing occurs too often..." (resp. 25, M, older, owner).

„In companies it is usually so, that if the president is not a financier he listens very carefully to the people, who have the knowledge. From my experience, I see that the CFO is

the next person after CEO whose opinion counts the most. Sometimes it's even more important than the President's. There is no such situation that someone leading a big company can afford to ignore such an information" (resp. 28, M, older, CFO).

In their opinion, liquidity managers in enterprises are the people who are well prepared to perform their tasks and are also immune to such a decision trap. Such understanding can be recognized as a positive comparative reference group.

Conclusions

Respondents perceived other similar managers (their professional reference group) as having the appropriate knowledge in the field of finance (*competent people, scientifically prepared*), who make their decisions based on an objective information (*formulas, computers, analysis of economic ratios*). Therefore, it seems, that in their opinion other representatives of their profession are acting in accordance with the principles of rationality (*his behaviour has to be rational*). But if such is the picture of their reference group, it may denote that they believe that other managers are not subject to behavioural decision-making determinants (including decision traps). Such a perception may in turn imply various consequences for their effectiveness and professional development. In some situations when they have to rely on other professional's opinions (e.g. CFO making a decision based on a report and its interpretation prepared by the chief accountant), they may not realize that this person might have succumbed various behavioural determinants during his work, so „the input" can be affected by „human" errors. Similar mechanism may as well occur during group decision making.

On the other hand, such an internalized belief of „infallibility" of other professionals can be a significant barrier to the dissemination of knowledge about non-economic determinants of decision-making. If I compare myself to a reference group defined this way (idealized) and if I want to be perceived as a real professional in my field (objective, logical, reasonable in my opinions and actions), I may decline the proposal of enriching my knowledge and skills by such „soft" aspects of my work life. I might consider them unnecessary and bringing little contribution to my professional competence.

The influence of reference groups on the decision-making process performed by financial managers, is hitherto very poorly recognized. It seems, however, that this aspect may be important for their professional functioning, because, as Adam Smith expressed it while creating his concept of „impartial observer", man as a social being looks at himself in the mirror of the society [Szacki 1983]. Thus, the way a decision maker defines and perceives his reference group the features and values of his „imaginary" group and whether he considers them desirable or not, can affect the choices he makes. If he „sees himself in a mirror" of positive reference group he will try to approach the benchmark. If he „applies" a negative reference group, his actions will go in the opposite direction.

The area of the professional reference group seems to offer quite a few aspects, perspectives or prospects worth further exploration. Recognizing which reference groups have influence on the choices made by financial managers, may also help to better adjust the educational offer for such people. Knowing who such people compare themselves to, what are their aspirations, what is important for them, will make it easier to choose the scope of material and teaching methods.

There is no doubt that opinions identified herein would require further exploration by means of quantitative research so as to determine how these beliefs are distributed in the population. An in-depth analysis of this issue could make a significant contribution to the development of behavioural decision theory and also become another important step leading towards enhancing the accuracy of financial decisions. This in turn could be transformed into improvement of the companies' overall efficiency and in consequence be beneficial for the social and economic prosperity.

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Equity Financing – Specialty of Polish Enterprises Listed on Warsaw Stock Exchange

Abstract: The optimal capital structure of the company is the subject of research of many scientific teams. Research conclusions say about a unique impact of a number of factors on the capital structure such as the size of the company, the industry, the company's growth period, macroeconomic factors, and regional specificity of business in the level of development of the financial system. This article aims to examine the behaviour in the decisions relating to the structure of capital of the Polish companies listed on the Warsaw Stock Exchange. In the study there were used the financial data of commercial companies in Poland listed on the Warsaw Stock Exchange. After the rejection of companies in bankruptcy and those who have not qualified for any group size remains surveyed 819 business entities. The period covered by the study was a period of years 2004–2013 (10 years).

As a result of the analysis it can be concluded that the Polish listed companies have responded to the crisis, in relation to the capital structure and financial costs, according to their size. The study shows that Polish companies listed responded to the crisis with a significant delay in the structure of financing.

Key words: financial leverage, capital structure

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1. Introduction

The optimal capital structure of the company is the subject of research of many scientific teams. Research conclusions say about a unique impact of a number of factors on the capital structure such as the size of the company, the industry, the company's growth period, macroeconomic factors, and regional specificity of business in the level of development of the financial system.

This means that it is almost impossible to indicate a homogeneous pattern of behaviour in management in shaping the capital structure. Literature provides research results indicating that, depending on the assumptions and sometimes unique factors, we have to deal with the various proposals and recommendations for business in the development of the capital structure. The main indication is the implementation of investment policy at the time of prosperity, the greater the effectiveness of investment is achieved when a mixture of sources of funding is used. When the economy is in the recession, companies should reduce investments and implement those that were previously planned by equity. How should we understand the crisis, whether it is a regional problem of the US economy or economic slowdown around the world? Globalization and the flow of speculative capital instantaneously discounting in every corner of the world aversion to risk, in the case of business decisions. This article aims to examine the behaviour in the decisions relating to the structure of capital of the Polish companies listed on the Warsaw Stock Exchange. Detailed proposals will be conducted through hypothesis:

1. Polish listed companies have not changed at low risk their funding structure during the crisis.
2. Change in the financing structure of Polish listed companies because of the crisis of 2008–2010 was delayed.

2.1. Responding to the crisis of Polish listed companies regarding the financing structure varies depending on the size of the company.

3. Polish public companies did not reduce the risk exposure understood as reducing the DFL during the crisis.

2. Literature review

This article aims to analyze the structure of capital in Polish companies listed on the Warsaw Stock Exchange before, during the crisis and after it. The concept of change in the structure of capital in companies due to the presence of additional risk factors, due to the fact caution by management and risk reduction policy. On the other hand, economic inertias which can be observed in the flow of impulses from the economy of Western Europe and the US are so significant, that it should be expected to have direct impact on the crisis in the Polish signals undertakings only after some time. This concept has been taken from a study conducted by Myers [2001], which states that there is no single theory of capital structure that would fully explain the decisions related to the structure of capital. As well as the fact that the capital structure is not necessarily dependent on individual factors but also on the environment in which it operates [Deesomsak et al. 2004]. Following Fama and French [2005], Barclay and Smith [2005] and Byounem [2008], it can be assumed that theories of capital structure are complementary and there are no mutually exclusive decisions regarding capital structure.

Literature review of studies about the structure of financing allows to identify four streams:

- developing a model of conditionality capital structure for new variables which allows to expand existing solutions,
- verification of existing solutions and theory through empirical analyses relevant for a certain time, countries, types of businesses,
- research for a better understanding of the importance of the environment organization, decisions and their impact on capital structure,
- trend to introducing new tools to verify the optimal capital structure of companies.

In today's dynamic environment, where the inertial phenomena are becoming smaller, businesses must adapt to a changing environment, one of those changes is the capital structure dependent on environmental factors in which the company operates. This assumption is supported by theory that assumes that companies must have the ability to adapt to changes in the environment, by finding a balance between the demand of the environment and the internal management system as the ability to survive and succeed [Donaldson 2001].

While analyzing the literature, it can be noticed there is a lot of research proving that environmental factors are important for the capital structure of the company. Agarwal and Mohtadi [2004] showed that the development of the stock market, motivates companies to replace debt with equity, especially when the banking sector may not propose relevant financial conditions for debt. Gonzalez and Gonzalez [2008] confirmed that the importance of the financial system for the use of debt by businesses is important because corporate debt rises when we are dealing with a strong banking system and strong protection of the rights of borrowers. De Jong et al. [2008] also found that the macroeconomic factors like GDP are important for the capital structure. Cotei et al. [2011] showed that the capital structure also affects the dynamics of legal and financial markets in which they operate.

Since the 80s of the twentieth century, when European economies were opened, large structural changes occurred in companies operating there. Growing enterprises in emerging markets have changed their capital structure. This is recognized by Mitton [2006] and earlier studies indicating that opening the economy to foreign investment leads to greater financial integration and the decline in the usage of debt. These results are consistent with the subsequent findings by Lucey and Zhang [2011], who proved that a higher level of integration of the credit market resulting in higher leverage on companies and vice versa.

If the company is underleveraged or overleveraged in terms of an optimal leverage, it could reduce the value of the company, which provides incentives change in debt levels of the company. In the literature, one of the current trends is how quickly businesses respond to changing conditions and adjust their capital structure to the optimum. For example Nivorozhkin [2005], describes that the speed of adjusting the capital structure for the five EU countries from Central and Eastern Europe (Bulgaria, Poland, Czech Republic, Romania and Estonia), compared with an average adjustment speed of different countries is higher by 17%.

Flannery and Rangan [2006] discovered that the US companies adapt their capital structure rather quickly to their target levels in about three years. Drobetz and Wanzenried [2006] document much faster adjustments, on a sample of developing countries (of continental Europe and England). In relation to all analyzed companies, the adjustment speed of the capital structure is higher by 45.6% for companies in Continental Europe and 48.3% in the UK. Qian et al. [2009] showed that the target level of debt exist in China, but the speed of the adjustment is very slow and is 11% in 1999–2004. Mukherjee and Mahakud [2010] found that adaptation to industrial firms in India is 33%. All of these studies indicate the fact that there is an optimal level of capital structure and the companies are trying to achieve it.

The analysis of Polish literature regarding the financing structure is dedicated mainly to verify the theoretical concepts that have been developed by foreign authors. The leading research include analyses by Dressler, Nawrot, Lach [2012], Wilmowska and Wilmowski, Janasz, Jędrzejczak-Gas [2013], or Gawrońska, Makarska.

3. Study methodology

The study uses financial data of commercial companies in Poland listed on the Warsaw Stock Exchange. After the rejection of companies in bankruptcy and those that have not qualified for any group size there remains 819 surveyed business entities. The period covered by the study was a period of 2004–2013 (10 years).

For data clustering multi-dimensional data clustering methodology was used. Factors which were used are: the balance sheet total, the volume of equity, sales and EBIT. Therefore authors used both the size of the company and its effectiveness. According to the authors the use of multidimensional data clustering because of the wide range of respondents hypotheses is the most legitimate, recognized as multifaceted pursuit and purpose of economic activity. Balance of all the elements has been set on the same level. Based on clustering for each of the companies there were determined rates, and then they were divided into 4 groups:

1. in the first group there are companies with the rate within the range below the median minus quartile deviation,
2. the second group consists of companies ranging from the median decreased by quartile deviation for the median,
3. in the third group there are companies with a ratio comprised within the range of the median value the median plus quartile deviation,
4. the last group includes companies with a ratio above the median value plus deviation quarter.

As a result of grouping the first group consisted of only 8 companies, therefore these companies were excluded, and the other three groups are defined as small, medium and large.

4. Analysis of the level of debt in 2004–2013

The analysis of the level of debt was made using two indicators: financial leverage, and the ratio debt to equity of the company. The first of the indicators (DFL) is calculated as the ratio of EBIT to gross profit. The higher the financial leverage, the greater part EBIT „consumed" by interest on debt incurred. The increase in the leverage ratio could mean five situations:

- increase EBIT and a higher increase in the value of financial costs,

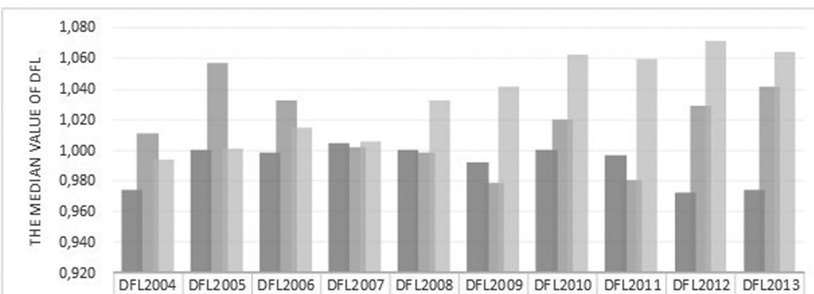
- decline in EBIT and a slower decline in financial expenses,
- decline in EBIT while costs increase,
- decline in EBIT at constant volume of financial costs,
- EBIT constant with increasing the size of the financial costs.

Each of the situations listed above should be considered negative. The decrease in the value of financial leverage can mean one of the five reverse situations:

- increase in EBIT and slower growth in the value of financial costs,
- decline in EBIT and a faster decline in financial costs,
- increase in EBIT while financial costs decrease.
- EBIT growth at constant volume of financial costs,
- EBIT constant with decreasing the size of the financial costs.

The second indicator also indicates the level of debt. It shows how many units of foreign financial capital (interest-bearing) account for directly on each unit of invested equity in the company. Median values of the above parameters during the period 2004–2013 for all three groups of companies are shown in graphs 1 and 2.

Graph 1. The median value of DFL – financial leverage



	DFL2004	DFL2005	DFL2006	DFL2007	DFL2008	DFL2009	DFL2010	DFL2011	DFL2012	DFL2013
Small	0,974	1,000	0,998	1,005	1,000	0,992	1,000	0,996	0,972	0,974
Medium	1,011	1,057	1,033	1,002	0,999	0,979	1,021	0,980	1,030	1,042
Large	0,994	1,001	1,015	1,005	1,033	1,042	1,063	1,060	1,071	1,064

Source: Own.

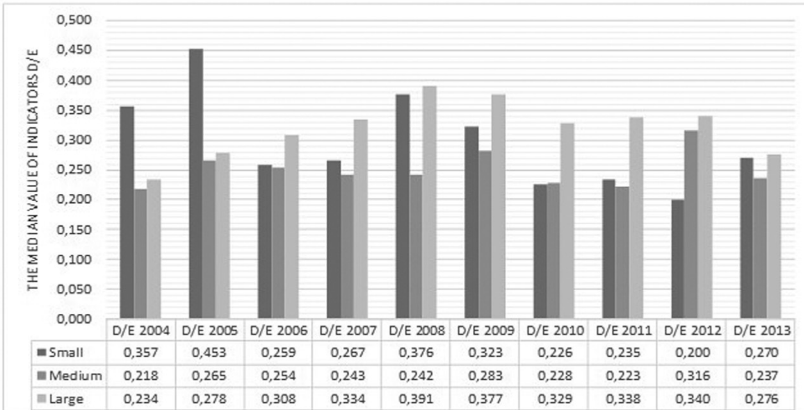
In the indicated subgroups there can be observed significant differences in response to both the boom and then the crisis in the size of financial leverage. In the period before the crisis medium-sized enterprises characterized by the highest risk, which, however, during the period of economic growth began to gradually decrease the level of interest in relation to EBIT, which was the opposite behaviour in relation to enterprises large and small. In 2007 (widely regarded as the last year of a bull market) expansion in the risk of all enterprise groups evened out.

From 2008 large enterprises clearly have not been able to offset rising financial costs increase in profit from the sale. Until the year 2012 we can see almost unwavering upward trend of the median value of the financial leverage ratio of the value of 1,033 to 1,071. Finally in 2013 these companies reduced ratio to the value of 1,064, which, however, is still high comparing to the early years of the study. Such an increase in the leverage ratio may indicate that large enterprises worked with a kind of inertia and helplessness during the economic downturn. This means that despite the decrease in turnover and profitability for sale or just for that reason, they were not able to lead to a reduction of debt incurred earlier which resulted in expansion into the financial costs and increase the risk. About constantly continuing debt above the economic collapse testify before the debt to equity ratio, which only in 2013 (0.276) reached a value below the value of 2007 (0.334). It should also be noted that the results of the high level of debt in 2008–2010 in large enterprises affected with the delay on the company in terms of financial leverage.

A level of leverage in medium-sized enterprises was characterized by the lack of clear trends after 2008. The downward trend started in 2006 lasted until 2009, when the level of financial leverage reached a value of 0.979 means directly that the financial costs do not exceed the income from this source in this group of companies. This situation indicates a clear signal that in the initial phase of economic slowdown, these companies had not discovered a reaction inertia exhibited by large enterprises. This is evidenced by the ratio of debt to equity, which fell inclusive in 2008. The year 2009 was characterized by higher debt, so the following year the effect of increasing the value of the index DFL. In the last two years, research in medium-sized enterprises increased debt by almost one third in 2012 compared to the previous year and remained at a fairly high level. However flowing in this respect revenues did not result in a reduction of the risk of expansion measured by the DFL. It may simply mean that the interest on the debt did not have impact on above-average revenue growth.

Ratios of small enterprises were characterized by similar trends. However characteristic for these companies, is that during the crisis they have seriously damaged its expansion at risk, possibly up to the level of capital accumulation. Hence the DLF below 1. They are characterized by so assurance and a very active approach to borrowing.

Graph 2. The median value of indicators D/E

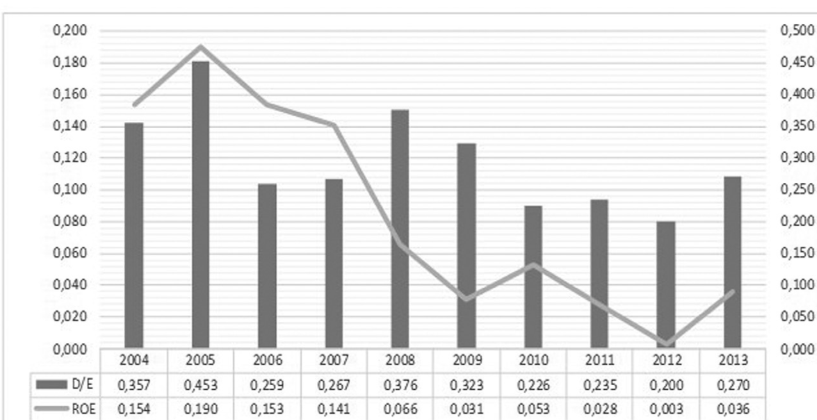


Source: Own.

5. Analysis of the effectiveness on the background level of debt in 2004–2013

Analysis of the effectiveness on the background of the debt level was made by ROE representing the efficiency in the use of equity and described earlier debt to equity ratio. Charts 3 to 5 represent the values of D/E (right axis) and ROE (left axis) for small, medium and large companies.

Graph 3. Variability of selected indicators – small companies

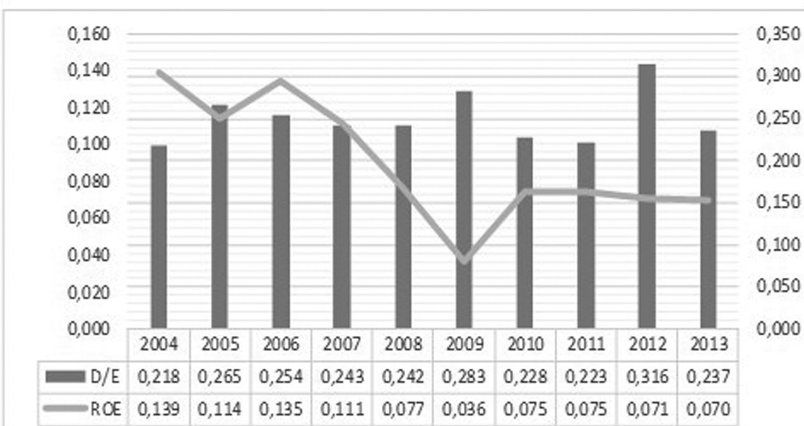


Source: Own.

Return on equity over the period considered remained in a downward trend. While the increase in debt in 2005 compared to the previous year „entailed" increase the profitability of the company, and next year along with its reduction was a decrease in profitability, in times of crisis to increase the debt did not result into increased profitability. This situation, in this group of enterprises confirms the earlier assumption that the increase in debt was not due to development potential, but due to a certain inertia businesses during the economic slowdown.

As can be seen in the graph 4 medium-sized companies were in a similar situation. Also, due to the reduction in profitability they were not able to reduce their liabilities, and in the same time they do not bring additional income. However, medium-sized enterprises stopped the decline in profitability faster. Since 2010 they have stabilized level of profitability.

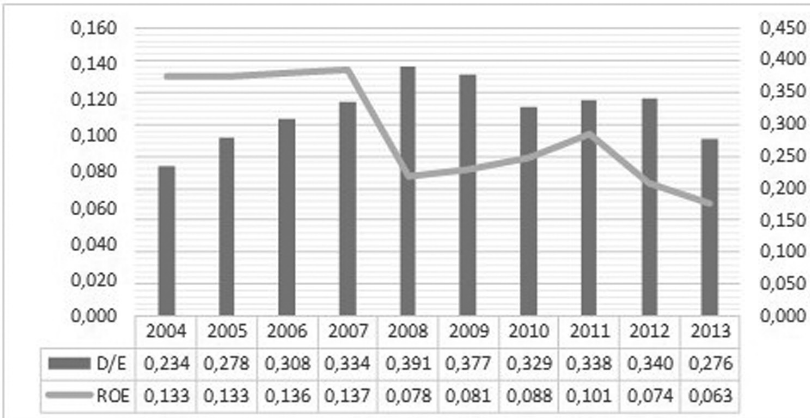
Graph 4. Variability of selected indicators – medium companies



Source: Own.

Slightly different conclusions can be drawn by analyzing data for large enterprises as shown in Figure 5. Large enterprises have suffered a permanent decrease of profitability during the crisis. It was the step decrease in the first year of slowdown, then the level of profitability stabilized, while stabilizing debt levels. This could mean a greater awareness of these enterprises in the use of long belaying, in a situation of reduced sales and the effective use of debt.

Graph 5. Variability of selected indicators – large companies



Source: Own.

6. Summary

As a result of the analysis it can be concluded that the Polish listed companies have responded to the crisis, in relation to the capital structure and financial costs, according to their size. Hypothesis 1 about the lack of change in the financing structure for less risky has been verified negatively across all subgroups – Polish companies withdrew the involvement of foreign capital in the financing. However, the hypotheses 2 and 2.1 were confirmed. According to the results of the analysis it can be concluded that the Polish listed companies reacted with a delay to the emergence of the crisis, and only in its later phase began restructuring the capital structure.

Studies also point to a partial confirmation of the hypothesis 3, that the Polish public companies did not reduce the risk exposure understood as reducing the DFL during the crisis. Large enterprises even increased expansion at risk.

The study shows that Polish companies listed responded to the crisis with a significant delay in the structure of financing. The proposed clustering of companies into three groups revealed some differences in the reaction itself, as well as the rate of response to the crisis and the characteristics of the financing to foreign capital.

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The Efficiency of Pension Funds in the New Legal and Economic Reality in 2014

Abstract: In December 2013 regulations on the functioning of open pension funds have changed. They have put severe limitations when it comes to the investment policy of the funds and reduced the number of their members.
We decided to examine the influence of the new realities of functioning on OFEs' efficiency one year after the introduction of the reform. For this purpose we used the DEA method (radial and non-radial) and Malmquist's productivity indices.
The funds have reacted to the changed situation improving applied technologies but efficiency improvement in this area proved to be insufficient. Our analysis showed a strong decrease of efficiency indicators in most OFEs caused by the outflow of members and less effective use of transferred contributions. The deterioration in the efficiency affected even large market-leader funds.
Key-words: open pension funds, DEA method, Malmquist indices

Introduction

In December 2013 particularly significant transformations took place in the Polish pension system. Part of accumulated assets was transferred to the state, the obligation to be a member of an open pension fund was abolished etc. It has been the most vital change since 1999 when the pension reform was introduced. The new rules concerning future pensions affected a large part of Poles. Unsurprisingly, the implemen-

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ted solutions aroused intense emotions. There were even opinions expressed that the open pension funds (called OFE) were reduced to the role of classic investment funds. According to D. Nowicki [Nowicki 2014, p. 16], the open pension funds cannot, however, be equated with investment funds because they still have to invest their assets with the maximum degree of safety in mind.

The new circumstances of the OFEs' operations became a fact, while the adopted changes made a majority of earlier analyses concerning the second pillar of the pension system outdated. Therefore, we have decided to focus on the assessment of the impact of the adopted reform on the efficiency of the pension funds' operations a year after the new legal solutions were introduced.

We decided to verify the hypothesis that effectiveness of the open pension funds strongly decreased within 12 months from the moment of implementing changes by the Polish government. We think that the primary causes of this condition have been the outflow of members and the consequent reduction of revenues from contributions. After proving the rightness of our thesis we will measure the size of the decline in the efficiency of pension funds using the DEA method and Mamquist's indices.

1. Situation in the OFE Market in the 4th Quarter of 2014

The new legal regulations passed by the Sejm on 6 December 2013 have radically changed the principles of the open pension funds' operations. 51.5% of the assets accumulated in the accounts of the funds' members, i.e. 153.2 billion PLN, were transferred to the Social Insurance Institution (SII). Moreover, the investment activity principles of the funds were changed.

The most noticeable effect was certainly the transfer of treasury bonds and bills as well as other securities issued and guaranteed or secured by the State Treasury (ST) to the SII. Treasury bonds and bills were acquired by the ST represented by the Minister of Finance, whilst the other assets went to the Demographic Reserve Fund [Nowicki 2014, p. 14].

What is more, an absolute prohibition was imposed on the OFEs investing their assets in treasury securities issued by the Polish government, National Bank of Poland (NBP) as well as governments and central banks of other countries [ibid. p. 18].

The maximum fee charged on contributions by the General Pension Societies (called PTE) was reduced from 3.5 to 1.75%, although a lower fee may be collected from longer-term members. That action was a response to the conduct of the PTEs which did not compete with one another in terms of the values of collected contributions. Moreover, the institutions of the minimum required rate of return and deficit mechanism were abolished in order to foster competition in the pension fund market.

All newly insured as well as existing members of the OFEs [ibid. p. 20] will be able to decide whether they wish to have their future contributions transferred to the OFEs. Assets which were not amortised, and had earlier been in the funds, are not lost and the existing members are still entitled to them.

The contributions of individuals entering the labour market, whose obligation to have social insurance has just occurred, are automatically sent to the SII unless they have signed an agreement with an OFE, which they can do in the period of four months. However, the choice they have made is not irreversible.

There were also some important changes in the OFEs' investment policy. The limit of 5% imposed on foreign investments was abolished. In turn, a limit was established on maximum investments denominated in foreign currencies. Moreover, a duty was introduced to maintain a part of the assets in shares (that limit will be abolished in 2018). The limit on investment in securities of one issuer was increased from 5% to 10%. The additional portion of the Guarantee Fund was also liquidated.

According to the reports of the Polish Financial Supervision Authority (PFSA), until the end of January 2014 the OPFs had invested mainly in Polish treasury securities (45.4% of the portfolio value of all the funds). However, after the February 1st, when those assets were transferred to the SII, the proportion of domestic companies' shares rose to 80% at the end of December 2014. The part of assets invested in debt securities involved, in fact, mostly corporate and local self-government bonds, accounting for less than 10% of all the portfolios in December 2014. In that period the largest assets were accumulated by ING OFE, Aviva OFE Aviva BZ WBK and OFE PZU "Złota Jesień". Their total participation in the market was 59.5%. The increased proportion of shares in the investment portfolios led to the noticeably raised risk of the funds' operations. They became more sensitive to downturns and upturns on the stock exchange.

Chybalski in his article [Chybalski 2013] also drew attention to the increased risk of benefit payments due limiting the role of funded pillar to the PAYG non-financial. He gave also questioned awareness of the importance of the choices made between financial and non-financial security of future pensions. Cit.: *But even if assume that the individual is able to make this choice consciously and rationally, from its point* *of view there are no reasons justifying the one way choice: from financial to non-financial pillar*.

The vast majority, i.e. more than 90% of assets held by the OFEs, is denominated in Polish zlotys. The funds, however, also hold assets in other currencies. Those are mainly equity instruments from the USA, Germany, Austria and the Czech Republic.

Along with the financial policy, the new legal regulations have changed the situation of the funds' members, which, first and foremost, translated into their number. According to the data of the Polish Financial Supervision Authority, 16.6 million individuals were members of the open pension funds in December 2014. Before the amendments to the regulations, only a small number of people had independently and consciously changed their funds. The analysis in [Buchowiec 2013] confirmed that Polish people are not interested in the selection and the change a fund. An aggressive canvassing and a draw replaced this choice. Thus, new members joined the funds mostly by a draw which was abolished on the February 1, 2014. By July 1 a declaration of intent to have part of one's contributions transferred to an OFE had to be filed with the SII. That opportunity was taken by the total of 2.5 million individuals.

That means a drop in the number of members paying contributions and thus, certainly, in the proceeds from that source. Moreover, since November 2014 the OFEs have been obligated to transfer part of their funds to the SII in the framework of the so-called "safety slide", which will additionally reduce the value of assets they hold.

2. Research Method

In the literature we can find many deliberations on the efficiency of the pension system. They focus however on financial efficiency because investing transferred contributions is the biggest difference compared to the previous pension system. A. Mikulec for example [Mikulec 2013] examined the degree of efficiency, actually (non) efficiency, of 30 OECD countries in 2005 and 2010. He used author's measure based on quartiles to it. On this base he appointed efficiency frontier. He showed that in both analyzed periods Polish pension system as a whole was characterized by low efficiency.

E. Marcinkiewicz [Marcinkiewicz 2013] also examined the financial efficiency except that she focused on PTEs. She identified a number of factors affecting the profitability of PTE. She proved the significant impact the number of OFE members which confirms our choice of this variable as one of the inputs.

The factors affecting the efficiency of pension funds was divided in [Buchowiec 2013] into statutory (among others handling charges, evaluation methodology of OFE using rate of return) and non-statutory (the management of the funds collected, the tendency of OFE members to fund changes, leaving choice of the fund to the mechanism of the draw by new members and other). Our approach uses factors from both groups while we are creating the set of inputs and outputs.

The PFSA suggests that the efficiency of the OFEs be assessed using the mean weighted rate of return calculated based on an accounting unit value at the beginning and end of a period. This measure, however, has serious defects as mentioned is, for example in [Kucharski 2010] or [Buchowiec 2013]. They result, among others, from the statistical properties of the mean. Hence, we propose the DEA as an alternative way to assess and compare the efficiency of pension funds.

The method is based on the relationship between the weighted sum of inputs and the weighted sum of outputs determined separately for each of the analyzed units (the so-called DMUs, i.e. Decision Making Units). It was proposed by Charnes, Cooper and Rhodes in the 1970s [Charnes, Cooper, Rhodes 1978]. Since the 1980s there has been growing interest in the DEA method, which is indicated by a fast rise in the number of publications [Ćwiąkała-Małys, Nowak 2009].

The method allows to maximize the technological efficiency of a selected unit by comparing efficiencies of all units in a set. The method does not require the knowledge of the functional relationship between outputs and inputs. In turn, it is assumed that volumes of inputs and outputs are above or equal to zero, but at least one input and one output exceeds zero for each decision making unit. Efficiency can be optimized either through decreasing inputs to receive present outputs or increasing outputs by using inputs at the present level.

The efficiency of each unit θ is determined by the radial distance from the empirical frontier of technological capability, the so called best practice frontier. The efficiency of units on the curve is 1. Units below the curve are dominated by objects on the curve and their ratios are below 1.

Depending on the kind of the applied model, outputs can be received taking into account different types of returns to scale [compare: Prędki 2008]. The CCR Model[1]

1 From the names of its authors: Charnes, Cooper, Rhodes.

assumes constant returns to scale, while the BCC model[2] assumes changing returns to scale. If there is a difference between efficiency for constant and changing returns to scale, the efficiency of scale can be determined. It is calculated as follows:

$$e\_s\_vrs = \frac{e\_crs}{e\_vrs} \tag{1}$$

where:
e_s_vrs – efficiency of scale;
e_crs – technical efficiency derived from the CCR model;
e_vrs – purely technical efficiency derived from the BCC model.

If the efficiency of scale equals 1, a given decision making unit is efficient in relation to the scale of inputs made. Otherwise ($e\_s\_vrs < 1$), no efficiency in relation to the scale of inputs is observed. It should, however, be kept in mind that formula (1) does not provide information on whether those are increasing or decreasing returns to scale. In order to obtain that information, the NIRS (Non Increasing Returns to Scale) model has to be calculated. Solving the NIRS model enables to receive value *e_nirs* to be used in order to determine the area of returns to scale according to formula:

$$e\_s\_nirs = \frac{e\_crs}{e\_nirs} \tag{2}$$

Value e_s_nirs equal to 1 means that a unit is in the area of increasing and below 1 – in the area of decreasing – returns to scale.

The traditional DEA analysis assumes the uniform efficiency of all inputs or outputs. If that assumption is abandoned, the so-called non-radial efficiency can be computed, where partial efficiency can be different for each input (output), with partial efficiency itself still remaining radial [Guzik 2009 p. 201]. The calculated optimum $\hat{\theta}_{no}$ index expresses, firstly, the efficiency of unit *o* due to input *n*. Secondly, it determines the percentage to which input *n* should be reduced so that unit *o* achieves one-hundred-percent efficiency due to that input. The mean of optimum partial efficiency index values for all inputs is the so-called Russell efficiency.

Information obtained upon solving the models making up the DEA method is of the static nature. In order to examine changes in efficiency over time, special dynamic indices, such as the Malmquist productivity indices, have to be employed. They are

2 The name comes from the names of the model's authors: Banker, Charnes, Cooper.

based on the so-called Shepard's distance, which is the inverse of the optimum value of the function of the objective of the output-oriented CCR model [Kirikal 2004]. Those indices for periods t and t+1 are determined as follows[3]:

$$M_t(x_t, y_t, x_{t+1}, y_{t+1}) = \frac{D_t(x_{t+1}, y_{t+1})}{D_t(x_t, y_t)} \tag{3}$$

$$M_{t+1}(x_t, y_t, x_{t+1}, y_{t+1}) = \frac{D_{t+1}(x_{t+1}, y_{t+1})}{D_{t+1}(x_t, y_t)} \tag{4}$$

where:

x_t, x_t+1 – inputs in periods t and t+1;

y_t, y_t+1 – outputs in periods t and t+1.

The index expressed by formula (3) compares efficiency in two periods, using technologies of period *t* as the point of reference. In turn, the index expressed by formula (4) assumes technologies of period *t+1* as the point of reference. In practice, interpretation applies the geometric mean of the indices.

The Malmquist productivity index can be decomposed into two components: technical efficiency index (TE) and technical changes index (TC). The former measures a relative change in efficiency without shifting the efficiency curve. The latter describes a relative change in efficiency associated with technological progress occurring between the study and base periods.

3. Analysis of Study Results

The new regulations passed in December 2013 started to be introduced in February of the following year. Declarations on remaining in an OFE could be filed by the end of June 2014. That made the year 2014 a special one. Up to a specific date the former regulations had been in force, whereas later the conditions of the funds' operations fundamentally changed. That must have had an impact on, e.g. their financial condition. In our opinion, relations among the funds themselves also changed, including their efficiency of operations. Thus, out of many possible variables describing the OPFs' activities, we were interested in those most susceptible to the impact of the carried out reform.

3 Symbol D denotes Shepard's distance.

From the point of view of stability of the DEA method calculations, the ratio of the number of decision making units to the numbers of inputs and outputs is important. It is recommended [Guzik 2009 p. 29] to seek the following relationship:

$$J > \max(P \cdot R, 3(P + R))$$

where *J* is the number of *DMUs*, *P* – the number of inputs and *R* – the number of outputs. Thus, considering a dozen or so objects, the list of inputs and outputs should be considerably limited.

Another factor affecting the determination of the set of inputs and outputs is correlations which occur between them. In the DEA method, low correlations between inputs and outputs are preferred as high correlations lead to a degenerated optimum solution.

Following the above, we chose the quarterly change in the number of members and the value of contributions transferred by the SII along with interest as inputs. As for outputs, we selected the mean value of an accounting unit and the financial result of the fund. Data were derived from reports published by the Polish Financial Supervision Authority.

The change in the number of members and the financial result had negative values for part of the funds. Therefore, we added a constant to those values so that such values could be eliminated. Adding a constant does not influence efficient units, although it may change the efficiency indices of inefficient ones. Thus, we selected the constants in such a way so that the existing differences among the funds could be maintained.

The results of optimization of input-oriented CCR and BCC models, along with returns to scale received based on the NIRS model, will first be presented. The data concern the 4th quarter of 2013.

Assuming constant returns to scale (column e_crs in Table 1), five funds proved to be efficient in the 4th quarter of 2013: Aviva OFE, ING OFE, Nordea OFE, Bankowy OFE and OFE WARTA. That means that those entities efficiently used their inputs. Efficient units can be used as benchmarks for inefficient ones to follow their example, although that topic is beyond the scope of this study.

The efficiency index value below 1 indicates how much a given decision-making unit should reduce its inputs in order to achieve the outputs to date and become an efficient unit. Assuming constant returns to scale, the least efficient proved to be Allianz Polska OFE, which ought to have used an average of 23.64% inputs less to achieve the outputs to date. Thus, in order to be at the frontier of efficiency, Allianz Polska OFE should have used 76.36% of its inputs. Very similar efficiency indices characterized AXA OFE with the index of 77.49% and OFE Pocztylion with the index of 79.83% respectively.

Table 1. Efficiency indices and returns to scale for the 4th quarter of 2013

Fund	e_crs	e_vrs	e_s_vrs	e_s_nirs
AEGON OFE	0.9880	1	0.9880	1
Allianz Polska OFE	0.7636	0.7810	0.9777	1
Amplico OFE	0.9190	0.9252	0.9933	1
Aviva OFE	1	1	1	1
AXA OFE	0.7749	0.7757	0.9990	1
Generali OFE	0.9739	1	0.9739	0.9739
ING OFE	1	1	1	1
Nordea OFE	1	1	1	1
Pekao OFE	0.9404	0.9543	0.9854	1
PKO BP Bankowy OFE	1	1	1	1
OFE Pocztylion	0.7983	0.8663	0.9215	1
OFE PZU "Złota Jesień"	0.9257	0.9261	0.9996	1
OFE WARTA	1	1	1	1

Source: own calculations.

Assuming changing returns to scale (column e_vrs in Table 1), the set of efficient funds additionally included AEGON OFE and Generali OFE. Also in that case, AEGON OFE and AXA OFE appeared to be the least efficient.

Column e_s_vrs contains values received according to formula (1) and, combined with column e_s_nirs, allows to determine whether a given fund proved to be efficient in relation to the scale of inputs made. In the 4th quarter of 2013 all funds efficient according to the CCR model acted in that way. However, the situation was extremely interesting for the other OFEs, which operated in the area of changing returns to scale. Only one of those – Generali OFE – was characterized by diminishing returns to scale. In other words, that fund was too big compared to the scale of its operations. The other funds, for which e_s_vrs<1 and at the same time e_s_nirs=1 in Table 1, are in the area of increasing returns to scale and thus it would be more beneficial for them to expand the scale of their operations.

The non-radial efficiency model enables to assess partial efficiency taking into account a given input or output. Units that are fully efficient in the radial CCR model remain such in the non-radial model, too. In their case, all inputs (or outputs) show one-hundred-percent efficiency. Hence, Table 2 contains only inefficient funds.

Efficiency indices calculated as the arithmetic mean of indices for both the inputs (column nr_e_crs in Table 2) differ from those in Table 1 due to the change in the optimization model form. Differences in the values of indices increased with the lowest one characterizing OFE PZU. In general, indices in Table 2 were lower than their counterparts in Table 1. The other funds proved to be fully efficient both in terms of the change in the number of members and the value of transferred contributions.

Four funds fully used one of the inputs. It was the change in the number of members for AEGON OFE and Generali OFE, and the value of contributions transferred by the SII for Amplico OFE and OFE PZU. It should, however, be pointed out that the fund owned by PZU showed very low (at the level of as little as 38%) efficiency of the change in the number of members. Anyway, that input was generally used less efficiently than the transferred contributions. Hence, it had a greater impact on the position of units below the efficiency frontier.

Table 2. Inefficient OPFs in the non-radial model for the 4th quarter of 2013

Fund	nr_e_crs	Change in the number of members	Transferred contributions
AEGON OFE	0.9872	1	0.9744
Allianz Polska OFE	0.7193	0.6223	0.8162
Amplico OFE	0.7609	0.5217	1
AXA OFE	0.7060	0.6036	0.8083
Generali OFE	0.9504	1	0.9007
Pekao OFE	0.8719	0.7793	0.9644
OFE Pocztylion	0.7935	0.7815	0.8054
OFE PZU "Złota Jesień"	0.6899	0.3798	1

Source: own calculations.

Table 3 contains efficiency indices and returns to scale a year after the introduction of changes in the pension system. In the 4th quarter of 2014 the number of funds dropped by one. In that period, AEGON OFE, Pekao OFE, OFE Pocztylion and OFE PZU "Złota Jesień" turned out to be fully efficient according to the input-oriented CCR model. Interestingly, none of those funds was efficient in the last quarter of 2013.

Table 3. Efficiency indices and returns to scale for the 4th quarter of 2014

Fund	e_crs	e_vrs	e_s_vrs	e_s_nirs
AEGON OFE	1	1	1	1
Allianz Polska OFE	0.5202	0.5945	0.8750	0.8750
Amplico OFE	0.6526	1	0.6526	0.6526
Aviva OFE	0.4739	1	0.4739	0.4739
AXA OFE	0.4464	0.7096	0.6291	0.6291
Generali OFE	0.1107	1	0.1107	0.1107
ING OFE	0.4237	0.4539	0.9335	0.9335
Nordea OFE	0.5962	1	0.5962	0.5962
Pekao OFE	1	1	1	1
PKO BP Bankowy OFE	0.6273	0.7262	0.8638	0.8638
OFE Pocztylion	1	1	1	1
OFE PZU "Złota Jesień"	1	1	1	1

Source: own calculations.

Another significant change can be seen in the values of efficiency indices of inefficient units. They were much lower. A year earlier the least efficient OFE should have reduced its inputs by about one-fourth. In the 4th quarter of 2014 the worst fund, i.e. Generali OFE, showed the index as low as 11%. Therefore, in order to achieve the outputs to date (the value of the accounting unit and financial result), it should have proportionally reduced its inputs by 89%. At the end of 2014 a new group of efficiency leaders emerged and there was a very substantial fall in the efficiency of the other funds.

There were also negative effects concerning returns to scale. Results in the last column of Table 3 indicate that only the funds fully efficient for each of the used models are in the area of increasing returns to scale. The other OFEs ought to have reduced the scale of their operations in the 4th quarter of 2014. That mostly affected Generali OFE, whose e_s_nirs index was below 1 a year before, too. Its situation deteriorated the most. The condition of the other entities was not good, either. Except for ING OFE, whose index was close to 1, the other funds ought to have considerably reduced the scale of their activities.

In our opinion, the diminished returns to scale were due to the outflow of members. Only a small part of them decided to declare remaining in an OFE. Without members, proceeds from contributions dropped, which led to further negative consequences for the funds.

That conclusion is confirmed by results in Table 4. Firstly, low non-radial efficiency values (column nr_e_crs) could be observed. Secondly, none of the funds shown in the table fully used even one of the inputs. Thirdly, efficiency indices for the change in the number of members were even several times lower than indices for the transferred contributions and, except for ING OFE, did not exceed 30%. Two funds, i.e. Amplico OFE and Generali OFE, used that input at the level close to 10%.

Table 4. Inefficient OPFs in the non-radial model for the 4th quarter of 2014

Fund	nr_e_crs	Change in the number of members	Transferred contributions
Allianz Polska OFE	0.4122	0.2165	0.6079
Amplico OFE	0.5252	0.1026	0.9478
Aviva OFE	0.3900	0.2637	0.5162
AXA OFE	0.3693	0.2205	0.5181
Generali OFE	0.1105	0.1102	0.1107
ING OFE	0.4202	0.4296	0.4107
Nordea OFE	0.5004	0.2127	0.7880
PKO BP Bankowy OFE	0.5111	0.2869	0.7353

Source: own calculations.

Coming back to conclusions from the Mikulec's work we acknowledge bad fund members management as important reason of low efficiency of the Polish pension system. It seems to be particularly common practice in recent time.

The situation looked a little better for the efficiency of using transferred contributions. Amplico OFE almost managed to reach 1 in that respect. It would be the easiest in its case to achieve one-hundred-percent efficiency. Certainly, only in that respect, as the fund was the least efficient in using the other above-mentioned input. It should also be noted that Generali OFE showed the lowest efficiency index for the value of transferred contributions. In order to be at the efficiency frontier, maintaining their outputs to date, the other funds would have to reduce that input by 21 to 89%.

The above analysis focused on showing differences in efficiency levels, returns to scale and use of inputs by the OPFs over a one-year interval. Table 5 shows values of the Malmquist productivity indices for specific funds and their decomposition into indices of technical efficiency (TE) and technical change (TC).

The highest productivity rise in the 4th quarter of 2014 compared to the 4th quarter of 2013 was achieved by OFE Pocztylion and accounted for 40%. Taking into consideration turbulence in the market, the result should be regarded as very good. The second-ranking AEGON OFE achieved a result worse by 14 points. It should be noted that four out of five funds characterized by an increase in productivity were efficient in the 4th quarter of 2014. However, entities which experienced a decrease in that value over the analyzed period predominated. The largest, i.e. 82.3%, fall was observed for Generali OFE. The geometric mean of all the Malmquist indices indicated a drop of 17.4% in that market segment.

Table 5. Dynamics of changes in efficiency Q4 of 2014 to Q4 2013

Fund	Index Malmquist	TE	TC
AEGON OFE	1.2608	1.0121	1.2457
Allianz Polska OFE	1.1391	0.6812	1.6721
Amplico OFE	0.7756	0.7101	1.0922
Aviva OFE	0.6884	0.4739	1.4526
AXA OFE	0.9145	0.5761	1.5874
Generali OFE	0.1769	0.1137	1.5559
ING OFE	0.6509	0.4237	1.5363
Nordea OFE	0.8600	0.5962	1.4424
Pekao OFE	1.1844	1.0634	1.1138
PKO BP Bankowy OFE	0.8416	0.6273	1.3417
OFE Pocztylion	1.4011	1.2527	1.1185
OFE PZU "Złota Jesień"	1.0394	1.0803	0.9621

Source: own calculations.

Technical efficiency indices measuring the dynamics of changes in transforming inputs into outputs were below one in most cases. The biggest fall was again experienced by Generali OFE. Only four funds showed an increase in technical efficiency between the end of 2014 and the end of 2013. Those were: OFE Pocztylion (a rise of 25.3%), OFE PZU (of 8%), Pekao OFE (of 6.3%) and AEGON OFE (of 1.2%). In general, however, the pension funds experienced a sharp fall of 37.6% on average.

The technical change index (column TC in Table 5) serves to assess the impact of changes in applied technologies, connected e.g. with technological progress, on efficiency. In the case of pension funds that rather concerns the results of introducing new management methods, improved asset portfolio creating tools and so forth.

It was only OFE PZU that showed a fall in the efficiency of used technologies at the level of 3.8%. All the other funds experienced an increase, sometimes of even several dozen percent. The highest index was noted for Allianz Polska OFE (a rise of 67.2%). Values above 50% were observed for AXA OFE, Generali OFE and ING OFE. Thus, a conclusion can easily be drawn that the funds focused on improving management methods or modifying asset portfolios, adapting those to the new conditions of operations.

Therefore, that kind of efficiency rose by an average of 32.4% in the whole group, which should be considered a marked improvement. Regrettably, that did not make up for the falls in technical efficiency and thus the Malmquist productivity indices proved to be below one, indicating the general worsening of the open pension funds' situation.

Management transferred contributions or fund members looks very similar in particular OFEs. This leads to the appearance of herding among pension funds. Kominek [Kominek 2012] and Marcinkiewicz [Marcinkiewicz 2013] wrote about it.

Like the authors mentioned above we also have observed the imitation phenomenon. Indicators calculated by us for inefficient funds do not differ too much in both radial and non-radial models. Even more it can be seen in the analysis of the Malmquist's indices components. On the one hand, the TE indices diminished to almost all pension funds. On the other hand all funds reacted in the same way by changing management techniques.

Summary

The PTEs, which manage the pension funds, show the so-called official optimism in their formal comments. One can find, for instance, a statement in the press that the number of members who declared staying in the OFEs would surely be enough for the further functioning of the second pillar of the pension system. Even if that is the case, the funds were unable to efficiently use resources being still at their disposal a year after introducing the new regulations.

Our analyses showed a sharp fall in the efficiency indices of most OFEs caused, first and foremost, by the outflow of their members. It was 17%, on average, in the whole group of the funds. There was also a significant decrease in the efficiency of using transferred contributions, which was certainly associated with OFEs' looking for investment strategies appropriate for the new legal and economic situation. Although there were some positive effects connected with developing fund management methods and their assets, they did not sufficiently make up for the decline in other activity areas.

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Statement of Cash Flows in the Bank Accounting's Praxis – a Useful Tool or Unnecessary Obligation?

Abstract: The statement of cash flows is said to present a more precise picture of the enterprise's financial situation, in comparison to the static statement of financial position (balance sheet), underlining factors contributing to the liquidity or factors generating the liquidity risk. Moreover, there can be identified the part of profit, hidden in accruals, or consequences of the dividend payment. The mandatory scheme of the cash flow statement of banks is however too general, disabling the detailed analysis of changes in volumes of particular components of assets and liabilities, especially when the absolute size or currency structure of changes is concerned. The article includes some critical comments and suggestions of improvements, to achieve a better information for external report users (shareholders, market analysts etc.), since regulatory authorities apply more sophisticated report sets in this area.
Key words: bank accounting, financial reporting, cash flows, statement of cash flows

1. Introduction

The scope of this article is the statement of cash flows in a bank. It is a mandatory component of periodical financial reports, developed according to IAS (inter-

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national accounting standards)[1] in the case of all commercial banks listed on the Warsaw Stock Exchange, or to the Polish Act of Accountancy and its Appendix no. 2[2] in the case of other banks. This statement is a basic report presenting the information about liquid funds being at disposal of an enterprise through the reporting period (to recognise whether the enterprise is generating enough cash to cover all its liabilities), as well as about the source of these funds and directions of their utilisation [Popowska, Wąsowski 2008, p. 110]. IAS 7 (p.3) states that the users of financial statements are interested in these features, independent from the area of the enterprise's activity – thus, also in the case when cash flows can be seen as products generated by the enterprise, as it is in the case of financial institutions. The advantages of the cash flow statement are underlined first of all in the general accounting literature (starting from E. Śnieżek [1994] or T. Waśniewski, W. Skoczylas [1995], being the pioneer publications in this area on the Polish market, through advanced studies like T. Maślanka [2008], E. Śnieżek [2008], up to the most recent monograph by E. Śnieżek and M. Wiatr [2014]), with the highlight on the more precise picture of the financial situation of an enterprise, comparing with the static statement of financial position (balance sheet), as well as with lower manipulation possibilities, comparing with the profit/loss statement. Namely, when analysing the financial standing of the enterprise, one can use the statement of cash flows to:

- evaluate the cash inflow into the enterprise – it can be treated as the next important measure of the enterprise's success (apart from profitability), as contributing positively to the liquidity;
- identify the level of self-financing, as an important factor influencing the current ability to pay liabilities;
- identify the portion of profit hidden in accruals (not paid in cash);

1 See the resolution of the Ministry of Finance concerning current and periodical information delivered by issuers of securities (Rozporządzenie Ministra Finansów z dnia 19 lutego 2009 r. w sprawie informacji bieżących i okresowych przekazywanych przez emitentów papierów wartościowych oraz warunków uznawania za równoważne informacji wymaganych przepisami prawa państwa niebędącego państwem członkowskim (Dz. U. nr 33/2009, poz. 259). The contents of the cash flow statement is regulated by the International Accounting Standard No. 7 in the version adopted by the European Union (see: Commission Regulation (EC) No 1126/2008 of 3 November 2008 adopting certain international accounting standards in accordance with Regulation (EC)No 1606/2002 of the European Parliament and of the Council, Official Journal of the EU No. L320, 29.11.2008, p. 27–33).

2 Act of September 29th, 1994 r. on accounting, the unified version announced by the Marshal of the Parliament of the Republic of Poland on January, 30th, 2013 r. (Dz. U. 2013, item 330).

- check if the fund surplus is invested to achieve additional revenues;
- check whether there is enough free cash to pay the declared dividends.

The capabilities of the statement of cash flows can be additionally expanded by conclusions driven from indicators generated on the basis of figures from the balance sheet and P/L statement – as mentioned by T. Waśniewski and W. Skoczylas [1997, p. 128].

However, the cash flow reporting in banks did not find such a rich treatment in the relevant literature, except for short formal chapters in bank accounting manuals – like e.g. E. Popowska, W. Wąsowski [2008], J. Uryga, W. Magielski [2006], although the cash is circulating in the banking system as the fundamental object of the banking activities. Moreover, questions of the liquidity and related risks have a more specific, composed character, influenced by the bank's activity profile and sources of engaged funds. It should be mentioned here, that the self-financing means practically in the case of a bank the ability to finance the lending activity to customers by deposits coming from customers. The share of pure own funds, that is, the own capital, is relatively much smaller in the banking industry, comparing with other industries, and discrepancies in the currency structure or time structure of assets and liabilities are balanced in the every day's praxis by using external short- or long-term sources (inter-bank lending) or liquid placements (in short-term inter-bank placements or easily tradable securities). The fund surplus investing is a usual activity of banks, aiming at profit maximisation.

These questions become an important object of the assets/liabilities management (ALM), concentrated not only on the daily control over inflowing dues and liabilities paid off, but on the long-term problems related to the unbalanced maturity structure on both sides of the balance sheet as well. The scope of information included in a typical statement of cash flows is not sufficient under these circumstances [Iwanicz-Drozdowska 2005, p. 60], thus, there arises a question, whether the report in the recent form is bringing some analytical value added to any interested receiver (the bank's owner/investor, manager, supervisor, market analyst). The article aims at a critical appraisal of the cash flow statement from a practical point of view, with some suggestions of improvements, necessary to meet the needs of ALM and the liquidity risk evaluation.

2. The information contents of a statement of cash flows

A typical statement of cash flows is divided into three basic sections[3], related to the operating (basic), investing and financing activities, presenting the change between the beginning and ending cash balances of the enterprise as the sum of balance changes resulting from these activities. The cash flow from operating activities can be specified by using

- the direct method, presenting main categories of received and paid gross cash and cash equivalent items;
- the indirect method, starting from the correction of the net profit or loss by results of transactions having the non-cash character (e.g. depreciation expenses), currency revaluation, income/cost accruals, as well as income or cost items related to investing or financing activities [IAS 7, p. 18], and finalised with the presentation of net changes in operating assets and operating liabilities.

Moreover, the direct method is preferred, as delivering information which is better applicable for the purposes of the operating cash flow forecasting, compared with the indirect one (netting the most interesting categories). Next two sections of the cash flow statement are constructed, disregarding the construction way of the operating section [Uryga, Magielski 2006, p.169]:

- the cash flows from investing activities include the purchase or sales of fixed assets and short-term financial assets, with all related income or cost cash items,
- the cash flows from investing activities include changes in the long-term funding sources (own capital, long-term liabilities, issued debt securities), again with all related income or cost cash items (e.g. paid dividends, issuer costs etc.).

The direct specification of the operating section in the statement of cash flows, as required from banks according to the Polish Act of Accountancy (PAA), is rather general (see Scheme 1).

3 The basic specification is presented in the IAS 7. A more precise description, with numerous examples, is given in the relevant Polish national accounting standard (Krajowy Standard Rachunkowości nr 1). The obligatory contents is specified in appendices to the Polish Act on Accounting, in three variants: 1) a general one, 2) the version for banks, 3) the version for insurance companies.

This specification is concentrated on income and costs items, hiding the changes in volumes of operating assets and liabilities like customer loans and deposits, inter--bank placements and borrowings under "Other" inflows or outflows. Thus, as a rule, financial statements of banks applying the PAA include the statement of cash flows constructed with applying the indirect method (see Scheme 2), disregarding the fact that the crucial categories of inflows/outflows are presented as changes in balances of the relevant categories of assets and liabilities. The same occurs for banks applying IFRS-based statements – although it is remarkable that the IFRS do not provide a unified standard form of this kind of reports.

Scheme 1. Direct specification of cash flows from operating activities of a bank according to the Polish Act of Accountancy

A. Cash flows from operating activities

I. Inflows

1. Interest received
2. Commissions received
3. Other operating inflows

II. Outflows

1. Interest paid
2. Commissions paid
3. Salaries
4. Social security and other labour costs
5. Other administrative costs
6. Taxes and other mandatory fees
7. Other operating expenses

III. Cash flows from operating activities – indirect method (I±II)

Scheme 2. Indirect specification of cash flows from operating activities of a bank according to the Polish Act of Accountancy

A. Cash flows from operating activities

I. Net profit

II. Total adjustments for:

1. Depreciation
2. Foreign exchange gains/losses
3. Interest and dividends
4. Net profit/loss on investing activities
5. Change in other provisions
6. Change in debt securities
7. Change in amounts due from financial institutions
8. Change in amounts due from clients and public sector entities
9. Change in receivables from reverse repo transaction
10. Change in other securities
11. Change in amounts due to other financial institutions
12. Change in amounts due to clients and public sector entities
13. Change in liabilities arising from repo transactions
14. Change in liabilities arising from own securities issued
15. Change in other liabilities
16. Change in prepayments and accruals
17. Change in deferred income
18. Other adjustments

III. Cash flows from operating activities – indirect method (I±II)

Scheme 3. Specification of cash flows from investing and financing activities of a bank according to the Polish Act of Accountancy

B. Cash flows from investing activities

I. Proceeds from investing activities
   1. Sale of shares in subsidiaries
   2. Sale of shares in interdependent companies
   3. Sale of shares in associated companies
   4. Sale of other shares and securities (including trading shares and securities)
   5. Sale of intangible and tangible fixed assets
   6. Other proceeds

II. Expenditures on investing activities
   1. Purchase of shares in subsidiaries
   2. Purchase of shares in interdependent companies
   3. Purchase of shares in associated companies
   4. Purchase of other shares and securities (including trading shares and securities)
   5. Purchase of intangible and tangible fixed assets
   6. Other expenditure

III. Net cash flows from investing activities (I±II)

C. Cash flows from financing activities

I. Proceeds from financing activities
   1. Long-term bank loans received
   2. Long-term loans received from other financial institutions
   3. Issue of bonds and other debt securities to other financial institutions
   4. Increase in subordinated liabilities
   5. Proceeds from share issues and contributions to capital
   6. Other proceeds

II. Expenditures on financing activities
   1. Repayment of long-term bank loans
   2. Repayment of long-term loans from other financial institutions
   3. Redemption of bonds and other securities issued to other financial institutions

4. Repayment of other financial dues
5. Repayment of dues under finance lease agreements
6. Decrease in subordinated liabilities
7. Dividends and other amounts paid to shareholders
8. Amounts paid as an appropriation of net profit to entities other than shareholders
9. Purchase of own shares
10. Other expenses

III. Net cash flows from investing activities (I±II)

D. Total net cash flows (A.III±B.III±C.III)

E. Change in cash and cash equivalents including foreign exchange differences

F. Cash and cash equivalents at the beginning of the reporting period

G. Cash and cash equivalents at the end of the reporting period (F±D)

Another obligatory standard of the statement of cash flows for commercial banks is included in the FINREP package, that is, the mandatory set of detailed reports, which is required for the supervisory purposes (to give the possibility to evaluate the financial standing of banks and their exposure to risks) as well as for delivering the central bank with data necessary to evaluate the demand for money and to create the monetary policy[4]. The specification is more detailed in the operating part, where ca. 35 correction items have been specified (see Appendix 1), which is almost twice as much, compared with the PAA indirect specification, described above in the Scheme 2. The contents of investing and financing parts are similar, with

- 6 pairs of in/outflows specified for investing activities,
- 8 items specified for the financing activities.

Additionally, there is given a separate specification of cash and cash equivalent components (12 items) as well as further disclosures related to:

- dividends received,
- interest income/costs (paid to/by the bank),
- sale/purchase of dependent entities,

4 The package FINREP was introduced by the Resolution No. 20/2007 of the Board of the National Bank of Poland (D. Urz. NBP No. 7/2007), with several amendments afterwards. It is compatible with the relevant package launched by the Committee of European Banking Supervisors and enables the conformity of banks' financial reports within the European Community [Popowska, Wąsowski 2008, p. 444].

- selected cash or cash-free transactions related to the investing and financing activity (like assets taken over for dues or by the financial lease, entities purchased by the issue of shares, replacement of debt financial instruments by capital-based instruments).

By the way, the US standard for the statement of cash flows in banks counts the lending activity of banks to the investing area, thus, loans granted to customers increase the cash outflow in the section of investing activities, whereas the loan back-payments are a component of cash inflows in the same section. Simultaneously, term deposits are assigned to financing activities, with deposit placements as cash inflows and deposit withdrawals as cash outflows [Woelfel 2000, p. 175–177]. The interest on lending, paid to the bank by debtors, as well as the interest on deposits, paid by the bank to depositors, are included in respective inflows and outflows from operating activities, as it is proposed in the direct specification of cash flows from operating activities according to the PAA. The US standard puts the accent on functions performed by deposits (funding) and loans (investment of gathered funds as the source of earnings), whereas IFRS and PAA treat loan and deposit activities as the basic operations of a bank.

To achieve a better understanding of the availability and diversification of cash flows in individual segments of the bank's activity, as well as relations between total cash flows of the reporting entity and their components, the IAS are recommending a disclosure of cash flows as divided into operational segments applied in the decision making process of the bank and in its managerial accounting policy (e.g. retail banking, corporate banking, treasury operations etc.) – see IAS 7, p. 52. However, this is not an obligatory recommendation, and none of Polish commercial banks has presented such decomposed statement of cash flows yet.

The preparation of a statement of cash flows is time consuming enough, since it requires to revert the impact of several general accounting rules and standards based on these rules on individual items of the balance sheet and the profit/loss statement. As examples there can be mentioned:

- the cash vs. accrual approach,
- assets presented gross, with the separated impact of depreciation costs and provisions, vs. the netting of assets,
- the reversal of the effective interest rate methodology, requesting to spread all income and costs items (interest, commissions) related to the contract over the whole maturity period of dues, neglecting the real (cash) inflow of revenues or outflow of costs covered by the bank.

Thus, practical solutions implemented in published financial statements of banks are, as a rule, limited to aggregated lines, satisfying formal requirements, but giving no basis for further detailed analyses (see an example given in the Appendix 2). Moreover, although the structure of these statements is similar among individual banks, it is not unified, disabling deeper comparisons.

3. General evaluation of cash flows

First stage of the cash flow analysis consists of a qualitative evaluation of flows in distinguished areas (operating, investing, financing). The flow size is not important in this case, opposite to the net balance sign (positive or negative). Theoretically there are possible eight combinations of flow balances, specific both for the enterprise's area of activity and individual circumstances [Gos, Hońko, Szczypa 2010, p. 255] (see Table 1). The conclusions, being originally elaborated for enterprises dealing with non-financial activities, seem to be valid also for commercial banks, however with regard to the bank's specifics associated with the different rules of "internal" and "external" funds:

Table 1. Possible combinations of cash flow directions in individual activities

	Case							
Activity	1	2	3	4	5	6	7	8
Operating	+	+	+	+	-	-	-	-
Investing	+	-	+	-	+	-	+	-
Financing	+	-	-	+	+	+	-	-

Source: Gos W., Hońko S., Szczypa P. 2010, p. 255.

- Case 1 concerns enterprises at the highest level of liquidity. Cash funds are collected in all three areas of activity, possibly for future investments.
- Case 2 is the most advantageous. It is observed in well performing profitable enterprises, financing their investments and reducing their long-term liabilities by using funds from the elaborated financial surplus.
- Case 3 is typical for the activity restructuring (the enterprise is not able to cover all liabilities, thus, sells unnecessary fixed assets to get the additional cash).
- Case 4 means that the enterprise is expanding its activity, using external financing sources (the own funds are not enough to cover all investment needs).

- Case 5 shows some temporary troubles: the liquidity is supported by external sources and sales of unnecessary fixed assets.
- Case 6 concerns new, dynamically growing enterprises, where the own capital and loans are financing both the operating expenditures and purchases of fixed assets.
- Case 7 is the worst one: the enterprise suffers the lack of cash, trying to support the liquidity by selling unnecessary assets.
- Case 8 means the investment expansion financed by funds (own or external) collected in past periods. It is a rather risky situation – the success in investments will bring future earnings, but the fail means bankruptcy.

The results of a similar qualitative analysis done on the basis of cash flow statements of selected Polish commercial banks are presented in the Table 2.

Looking backward into last eight years, we cannot see clear trends or similarities. Although all studied banks have been dealing under the same external macro-economic conditions, influencing the interest and exchange rates, demand for loans and supply of customer deposits, they have their own structure of assets and liabilities, pattern of organisational changes, mergers and acquisitions, branch network expansion, dividend policy etc.

The comparisons are difficult also due to the fact that under the same sign there are classified cases when the net result is considerable due to the relatively big scale of inflows or outflows, and cases when the net result is relatively low – either due to the similar, rather big scale of inflows and outflows, bringing a relatively small net result, or due to the generally small scale of specific activities. It means, that the right interpretation of the statement of cash flows requires a lot of additional analyses going deeper into the notes or comments to the official financial statements of the bank, or even into more detailed information, available for the bank management, but not for the external analyst.

The deeper interpretation should also consider the specifics of the banking industry, influencing the structure of cash flows in individual activity areas. A trial is presented below (Table 3), with expanding the details concerning the basic components of the operating activities. The structure of statements is not standardised, thus, the presentation of some items, like for example, provisions for dues at default, is possible not in all cases.

Table 2. Combinations of cash flow directions in individual activities as observed in studied commercial banks

Bank	Activity	2014	2013	2012	2011	2010	2009	2008	2007
BGŻ S.A.	Operating	+	-	+	-	-	-	-	-
	Investing (+/-)	-	+	-	-	-	-	+	+
	Financing	-	-	+	+	+	+	+	0
	Total (case no.)	+ (2)	- (7)	+ (4)	- (6)	+ (6)	- (6)	+ (5)	- (?)
BPH	Operating	-	+	+	+	+	+	-	-
	Investing (+d)	-	+	-	-	-	-	-	-
	Financing (-d)	-	-	-	-	-	-	+	-
	Total (case no.)	- (8)	+ (3)	+ (2)	- (2)	+ (2)	+ (2)	- (6)	- (8)
BOŚ	Operating	-	+	+	-	-	-	-	-
	Investing (+/-)	+	-	-	-	+	+	-	-
	Financing	-	-	+	+	+	+	-	+
	Total (case no.)	- (7)	+ (2)	+ (4)	- (6)	+ (5)	+ (5)	- (8)	- (6)
BZ WBK	Operating	+	-	-	+	+	-	+	+
	Investing (+/-)	-	+	+	+	+	+	-	-
	Financing (-d)	-	-	-	-	+	-	-	-
	Total (case no.)	- (2)	+ (7)	+ (7)	+ (3)	+ (1)	+ (7)	+ (2)	+ (2)
Getin Noble	Operating	-	-	-	-	+	+	+	-
	Investing	-	-	-	-	-	-	-	-
	Financing	+	+	+	+	-	-	+	+
	Total (case no.)	+ (6)	- (6)	+ (6)	+ (6)	+ (2)	+ (2)	+ (4)	+ (6)
ING BSK	Operating	-	+	-	-	-	-	-	-
	Investing (+d)	-	-	+	+	+	+	-	-
	Financing (-d)	-	-	+	-	0	0	-	-
	Total (case no.)	- (8)	+ (2)	+ (5)	- (7)	+ (?)	- (?)	- (8)	- (8)
Millennium	Operating	-	+	+	+	-	+	+	-
	Investing (+/-)	-	-	-	+	-	-	-	+
	Financing (-d)	+	-	+	-	+	-	+	+
	Total (case no.)	- (6)	+ (2)	+ (4)	+ (3)	- (6)	+ (2)	+ (4)	+ (5)
PKO BP	Operating	-	-	+	+	+	-	+	-
	Investing (+/-)	-	-	+	-	-	+	-	+
	Financing (-d)	+	-	-	+	+	+	-	+
	Total (case no.)	+ (6)	- (8)	+ (3)	+ (4)	- (4)	+ (5)	- (2)	- (5)
PEKAO	Operating	-	+	+	-	-	+	-	+
	Investing (+/-)	+	-	+	+	+	-	+	-
	Financing (-d)	-	-	+	-	-	-	-	-
	Total (case no.)	+ (7)	+ (2)	+ (1)	- (7)	- (7)	+ (2)	- (7)	+ (2)

Source: Own analyses based on statements of cash flows of studied banks. The marks (-d) denote considerable dividends paid to shareholders, (+d) denote considerable dividends received from subordinated entities, (+/-) at investing activities denote a considerable scale of operations with securities.

Table 3. Main components of cash flows in the operating activity as observed in studied commercial banks

Bank	Activity	2014	2013	2012	2011	2010	2009	2008	2007
BGŻ S.A.	Changes in								
	• dues from banks	-	-	+	+	+	+	+	+
	• dues from customers	-	+	-	-	-	-	-	-
	• dues to banks	-	-	-	+	+	-	-	+
	• dues to customers	+	-	+	+	+	+	+	+
	• fin. assets/liabilities*	+	-	+	-	-	+	-	+
	• derivatives	+	+	+	-	+	-	+	-
	Total operating activity	+	-	+	-	-	-	-	-
BPH	Changes in								
	• dues from banks	+	-	-	+	-	+		
	• dues from customers	+	+	+	+	+	-		
	• dues to banks	+	-	+	-	-	+		
	• dues to customers	-	+	-	+	+	-		
	• fin. assets/liabilities	-	-	+	-	+	-		
	• provisions**	-	-	-	+	+	+		
	Total operating activity	-	+	+	+	+	+	-	-
BOŚ	Changes in								
	• dues from banks	-	+	-	+	+	+	+	-
	• dues from customers	-	-	+	-	-	-	-	-
	• dues to banks	-	-	-	-	-	+	+	+
	• dues to customers	+	+	+	-	+	+	+	+
	• fin. assets/liabilities	-	-	-	-	-	+	-	-
	• derivatives	+	-	+	-	+	-	+	+
	Total operating activity	-	+	+	-	-	-	-	-
BZ WBK	Changes in								
	• dues from banks	-	-	+	+	0	0	+	+
	• dues from customers	-	-	-	-	+	+	-	-
	• dues to banks	-	-	-	+	-	+	+	+
	• dues to customers	+	+	+	+	+	-	+	+
	• fin. assets/liabilities	-	-	-	+	-	-	+	+
	• provisions	inconsiderable amounts							
	Total operating activity	+	-	-	+	+	-	+	+
Getin Noble	Changes in								
	• dues from banks	-	+	+	-	-	+	-	-
	• dues from customers	-	-	-	-	-	-	-	-
	• dues to banks	+	+	+	-	+	-	+	+
	• dues to customers	+	+	+	+	+	+	+	+
	• fin. assets/liabilities	-	-	-	-	+	-	n.d.	n.d.
	• derivatives	+	+	-	+	+	-	n.d.	n.d.
	Total operating activity	-	-	-	-	+	+	+	-

* Assets/liabilities held for trading or priced on the Fair Value principle through the P/L statement.

** Provisions for dues at default

ING BSK	Changes in								
	dues from banks	-	-	-	+	+	+	+	-
	dues from customers	-	-	-	-	-	-	-	-
	dues to banks	+	+	-	+	+	-	+	-
	dues to customers	+	+	+	+	-	+	+	+
	- fin. assets/liabilities	-	-	-	-	+	+	-	+
	- derivatives	+	-	+	+	+	-	+	-
	Total operating activity	-	+	-	-	-	-	-	-
Millennium	Changes in								
	• dues from banks	-	-	+	-	-	+	-	+
	• dues from customers	-	-	+	-	-	+	-	-
	• dues to banks	-	+	+	+	-	+	-	-
	• dues to customers	+	+	+	+	+	-	+	+
	• fin. assets/liabilities	+	-	-	+	+	+	+	+
	• derivatives	x	x	x	x	x	x	x	x
	Total operating activity	-	+	+	+	-	+	+	-
PKO BP	Changes in								
	• dues from banks	+ -	+ -	- -	+ -	+ -	+ -	- -	+ -
	• dues from customers	-	-	-	-	-	-	-	-
	• dues to banks	-	+	-	+	-	-	+	-
	• dues to customers	+	+	+	+	+	+	+	+
	• fin. assets/liabilities	+	-	+	-	+	-	+	+
	• derivatives	-	-	+	-	+	-	+	-
	• provisions	+	-	+	+	+	+	+	+
	Total operating activity	-	-	+	+	+	-	+	-
PEKAO	Changes in								
	• dues from banks	+	-	+	+	+		-	+
	• dues from customers	-	-	+	-	-		-	-
	• dues to banks	-	-	+	-	-		+	+
	• dues to customers	+	+	-	+	+		+	+
	• fin. assets/liabilities	-	+	-	+	+		+	-
	• derivatives	-	+	-	+	+		+	-
	Total operating activity	-	+	+	-	-	+	-	+

Source: Own analyses based on statements of cash flows of studied banks.

When analysing this table, one should note that the most important are changes in dues from customers (the gross lending volume) and dues to customers (the deposit volume). The sign “minus” in the first case cannot be treated as worrying: it means the growth of the balance of granted loans, as well as the increase in the “working” assets’ volume. If it is accompanied with the “plus” sign in the row of dues to customers, it means that the relevant cash outflow is compensated by the inflow of new deposits, otherwise it could mean the shortage of loan funding capabilities[5]. Of course, the cash imbalance in the area of operations with customers, appearing especially due to the different currency structure of assets and liabilities[6], can be relatively easily equalised by operations with banks. However, additional disturbances in the size of volume changes, difficult to investigate without the access to detailed data describing volume changes in original currencies, are generated in this case by fluctuating exchange rates.

4. Outlook

There is no doubt that the recent form of the cash flow statement is far not enough for the purposes of the internal management and external supervisors, especially when the questions related to the liquidity risk management are concerned. The conclusion that the positive net cash flow is advantageously enhancing the liquidity is true, but not satisfactory. The main goal of the bank's activity is not the risk minimisation, but the profitability maximisation under a restricted exposure to risk factors (liquidity, credit, price, operational etc.). The bank's liquidity is recently controlled by applying the sophisticated methodology,[7] based on specific definitions and classifications of assets and liabilities (based not only on the recent data describing among others the stable/not stable deposit basis, assets with a full, limited or zero liquidity, liquidity provisions, but also on forecasts of the deposit revolving or early withdrawals) and supplied with detailed internal data sources Thus, the statement of cash flows is absent in the new structure of the supervisory report set FINREP, introduced since 2014.[8]

However, the cash flow statement, added to the financial statements published by commercial banks, is still satisfying some information needs of external statement

5 Such unfavourable situation (outflow of cash related to granted loans not supported by the inflow of new deposits) occurred in three cases only: BPH in 2009, BOŚ in 2011, ING BSK in 2010.

6 According to the data published by NBP, as of the December 31st, 2014, the foreign currency (FX) deposits with the amount of PLN 81,5 billion gave about 9% of the total banks' dues to other sectors (PLN 920,7 billion), whereas the share of FX loans in the total volume of loans to other sectors was 3 times higher (PLN 255,0 billion against the total figure of PLN 952,9 billion).

7 Resolution No. 9/2007 of the Banking Supervision Commission from March 13th, 2007 considering the liquidity norms obligatory for banks (Dz. Urz. NBP No. 3/2007, item 11).

8 Commission Implementing Regulation (EU) No 680/2014 of 16 April 2014 laying down implementing technical standards with regard to supervisory reporting of institutions according to Regulation (EU) No 575/2013 of the European Parliament and of the Council, Official Journal of the EU No. L191, 28.06.2014.

receivers, especially by offering them the possibility of a better understanding of the intensity and direction of changes in volumes of assets and liabilities (e.g. whether we have to do with smooth, slow upward/downward trends related to long- and medium-term products, or with considerable fluctuations of inflows and outflows connected with the current use of credit lines and placements/withdrawals of short-term deposits). Of course, it is possible when the operating part of the cash flow statement is reporting gross changes, instead of net balances of changes. The analytical capabilities would also grow when the volume changes were presented considering the currency structure at least of main components of assets and liabilities (FX loans, deposits, securities), with distinguishing the impact of volume changes in original currencies and the impact of fluctuating FX rates. The further advantage is the possibility of identifying the relations between cash income and cost items and corresponding accruals, to achieve the more real picture of the performance of the bank's enterprise.

Thus, one can conclude, that it is probably the time to decide whether the statement of cash flows should be really obligatory for banks, as it is required from listed companies by the recent accounting standards. Do all shareholders really need such information? The recent form of this statement generalises the picture of flows and does not answer many important questions concerning the factors influencing changes in the size and direction of changes. The preparation of additional notes to the statement of cash flows seems to be more often an exclusion, than the normal praxis. On the other hand, one should consider the relation of reporting costs (in terms of time, labour and other administrative expenditures spent for data gathering and processing) covered by banks to advantages for external report users (being better informed – a qualitative criterion, not controlled by banks). Regulators responsible for the shape of mandatory reports have a guaranteed access to the information they need, thus, there is open the question, how detailed should be reports available for "usual" receivers (like shareholders, market analysts, media etc.). In most cases they are not accounting professionals, thus, they are not able to specify their expectations towards cash flow reports. It seems to be a task for the financial supervisor or the central bank, as institutions responsible for the safety of the banking system, to initiate some educational activity to enhance the knowledge about the situation of financial institutions.

Appendix 1
Cash flow statement – FINREP approach

OPERATING ACTIVITIES

Net profit (loss)

Adjustments to reconcile net profit or loss to net cash provided by operating activities:

(Current and deferred tax income, recognised in income statement)

Current and deferred tax expenses, recognised in income statement

Minority interests included in group profit or loss

Unrealised foreign currency gains and losses

INVESTING AND FINANCING

Depreciation / amortisation

Impairment

Provisions, net

Unrealised fair value (gains) losses through P&L, i.e. for investment property, PPE, intangible assets,...

(Gains) losses on sale of investments, net (i.e. HTM, associates, subsidiaries, tangible assets...)

OPERATING

Unrealised (gains) losses from cash flow hedges, net

Unrealised (gains) losses from available-for-sale investments, net

Other adjustments

Cash flows from operating profits before changes in operating assets and liabilities:

Increase (Decrease) in working capital (excl. cash & cash equivalents):

(Increase) decrease in operating assets (excl. cash & cash equivalents):

(Increase) decrease in balances with central banks

(Increase) decrease in loans and receivables

(Increase) decrease in available-for-sale assets

(Increase) decrease in financial assets held for trading

(Increase) decrease in financial assets designated at fair value through profit or loss

(Increase) decrease in derivatives – hedge accounting

(Increase) decrease in non-current assets held for sale

(Increase) decrease in other assets (definition balance sheet)

Increase (decrease) in operating liabilities (excl. cash & cash equivalents):

Increase (decrease) in advances from central banks
Increase (decrease) in deposits from credit institutions
Increase (decrease) in deposits (other than from credit institutions)
Increase (decrease) in debt certificates (including bonds)
Increase (decrease) in financial liabilities held for trading
Increase (decrease) in financial liabilities designated at fair value through profit or loss
Increase (decrease) in derivatives – hedge accounting
Increase (decrease) in other liabilities (definition balance sheet)
Cash flow from operating activities
Income taxes (paid) refunded
Net cash flow from operating activities

INVESTING ACTIVITIES
(Cash payments to acquire tangible assets)
Cash receipts from the sale of tangible assets
(Cash payments to acquire intangible assets)
Cash receipts from the sale of intangible assets
(Cash payments for the investment in associates, subsidiaries, joint ventures, net of cash acquired)
Cash receipts from the disposal of associates, subsidiaries, joint ventures, net of cash disposed
(Cash outflow to non-current assets or liabilities held for sale)
Cash inflow from the non-current assets or liabilities held for sale
(Cash payments to acquire held-to-maturity investments)
Cash receipts from the sale of held-to-maturity investments
(Other cash payments related to investing activities)
Other cash receipts related to investing activities
Net cash flow from investing activities

FINANCING ACTIVITIES
(Dividends paid)
Cash proceeds from the issuance of subordinated liabilities
(Cash repayments of subordinated liabilities)
(Cash payments to redeem shares or other equity instruments)
Cash proceeds from issuing shares or other equity instruments

(Cash payments to acquire treasury shares)
Cash proceeds from the sale of treasury shares
Other cash proceeds related to financing activities
(Other cash payments related to financing activities)
Net cash flow from financing activities

Effect of exchange rate changes on cash and cash equivalents
NET INCREASE IN CASH AND CASH EQUIVALENTS
CASH AND CASH EQUIVALENTS AT BEGINNING OF THE PERIOD
CASH AND CASH EQUIVALENTS AT END OF THE PERIOD

Components of cash and cash equivalents:
On hand (cash)
Cash balances with central banks
Financial assets held for trading
Financial assets designated at fair value through profit or loss
Available-for-sale financial assets
Loans and receivables (including finance leases)
Held-to-maturity investments
Other short term, highly liquid investments
(Bank overdrafts which are repayable on demand, if integral part of cash management)
Total cash and cash equivalents at end of the period
Of which: amount of cash and cash equivalents held by the enterprise, but not available for use by group
Undrawn borrowing facilities (with breakdown if material)

Supplemental disclosures of operating cash flow information:
Interest income received
Dividend income received
Interest expense paid

Supplemental disclosures of acquisitions/disposals of subsidiaries
Total purchase or disposal consideration
Portion of purchase or disposal consideration discharged by means of cash or cash equivalents

Amount of cash and cash equivalents in the subsidiaries acquired or disposed
Amount of assets and liabilities other than cash or cash equivalents in the subsidiaries acquired or disposed of

Non-cash financing and investing activities
Acquisition of assets by assuming directly related liabilities or by means of a finance lease
Acquisition of an enterprise by means of an equity issue
Conversion of debt to equity

Appendix 2
Specification example of the statement of cash flows according to IFRS requirements[9]

Operating activities

Profit for the period

Adjustment for the reconciliation of the net profit against net cash from operating activities

Interest

Income tax expense

Effect of exchange differences on operating activities

Depreciation

Operating activities

Changes in operating assets

Changes in loans to financial institutions

Changes in advances (lending activity)

Changes in derivative instruments

Changes in assets other than financial instruments

Changes in operating liabilities

Changes in deposits by financial institutions

Changes in deposits and advances by other institutions

Changes in other liabilities

Cash flow in operating activities

Investing activities

Acquisition of property, plant and equipment

9 Nordea Bank Polska S.A., financial reports from the period 2006–2014.

Acquisition of intangible assets
Sale of property, plant and equipment
Change in other financial assets

Cash flow in investing activities

Financing activities
Issue of subordinated debt
Issue of debt securities
Redemption of debt securities
Discharge of long-term loans from banks
Discharge of subordinated debt
Other, including advances received

Cash flow in financing activities

Decrease in cash and cash equivalents
Opening balance of cash and cash equivalents
Closing balance of cash and cash equivalents
Balance sheet change in cash and cash equivalents

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Prospects for Development of the Market of Mortgage Bonds in Poland

Abstract: This paper concerns the system of financing housing by the banking system. The aim of the study is to analyse the role of covered bonds in the process of financing the real estate market in Poland. Based on the analysis of the development of the housing market, market of mortgages and instruments for long-term financing of mortgages, the study proposed the hypothesis that the system of financing housing supported by the effective market of covered bonds will allow to avoid the balance gap in the banks. The analysis concerned new loans in Poland and strategies of refinancing of mortgages granted by banks. The results of the analysis pointed to the need for revision of the legislation in order to improve access of banks to additional instruments for long-term financing within Basel III standards, EU ordinances and the ordinances by the Polish Financial Supervision Authority. It was demonstrated that the amendment of the act on covered bonds and mortgage banks should be conducive to the development of the market of covered bond through facilitation of refinancing of mortgages with these instruments and, consequently, minimization of the risk of losing liquidity by the lenders.
Key words: mortgage, covered bond, loan refinancing

Introduction

Since the beginning of the 21st century, Poland has seen an unprecedented development of mortgages granted to households [NBP, 2009]. The debt due to residen-

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tial loans, which were largely secured as mortgages, increased from 14 billion (as of December 2001) to over 208 billion zlotys (as of June 2009). Mortgages accounted for 61% of all the loans and credits granted to private individuals (with 70% in the Eurozone) and around 34% of all the loans and credits for the non-financial sector, including enterprises and households (as of June 2009). In December 2001, they amounted to 26% and 7%, respectively. Furthermore, 69% of mortgages were foreign currency loans (as of June 2009).

Analysis of the structure of flats to be used in Poland from 1992–2008 [Kirejczyk 2009] indicates a substantial increase in their number, especially in 2006–2008. The period of boom (2006–2007) in the real estate market and loan market was followed, from the beginning of the year 2008 in the period of disturbances in world financial markets in Poland [Lis 2011, p. 20] and changes in the domestic exchange rate, by the rapid deceleration of financing of the real estate sector through more restricted conditions of granting mortgages [NBP 2010].

After a period of global financial crises, banks in Poland are gradually easing loan requirements and increasing the number of new loans, including mortgages. If it is adopted that the upward tendency will be maintained in the future, the structural mismatch of assets and liabilities will liquidity is likely to lead to an increasing gap in liquidity in banks. Therefore, it is necessary to implement safe and long-term instruments of financing mortgages.

In order to discuss the above problems, the empirical data will be used. Additionally, an analysis of current and previously used legal regulations will be presented.

The data obtained from the databases of the Polish Bank Association (ZBP), SAFRIN and AMRON systems, the Polish Association of Business Developers (PZFD), and the reports published by the Financial Supervision Commission (KNF) and the statistical data of the Central Statistical Office of Poland (GUS) allowed for the analysis and evaluation of the new

loans after the crisis, characterization of the strategy for refinancing of mortgages in Poland and presentation of the prospects for development of additional instruments for long-term financing, such as covered bonds, which are safe instruments of refinancing.

The aim of the study is to analyse the role of covered bonds in the process of financing the real estate market in Poland and scientific verification of the hypothesis adopted in the study.

1. The housing market in Poland: Basic problems

A dynamic development of the mortgage market in Poland was observed in the period before world crisis in 2005–2008.

The first phase of the financial crisis with liquidity background and the crash in the mortgage market was observed in 2008–2009, leading immediately to weakening of the economic growth and mortgage market stagnation. The second phase of the crisis (up to 2010) is a consequence of the debt crisis, which was reflected by the increase in the interest rates for the most of government bonds (Polish Financial Supervision Authority, UKNF 2013). The cycle of implementation of a more liberal monetary policy after the crisis was manifested, especially in the loan market, by changes in interest rates in the central bank.

The results of the analysis of the approachable data suggest that the last change in interest rate [March 2015] is likely to be closing the cycle of implementation of a more liberal monetary policy i.e. new mortgages (since low interest rates means also low interest rates for mortgages).

Around 21,400 flats were sold at the end of the first half of 2013 in the real estate markets in six biggest urban complexes in Poland, which translated into the year-over-year increase by around 28%. Furthermore, the demand on flats purchased with governmental support from the program „Mieszkanie dla Młodych" (MdM, „Flat for the Young") postponed from 2013 was covered in the beginning of 2014 [ZBP 2014].

Popularity of the mortgages in the European countries as a percentage part of owners of mortgaged real estate is presented in Table 1.

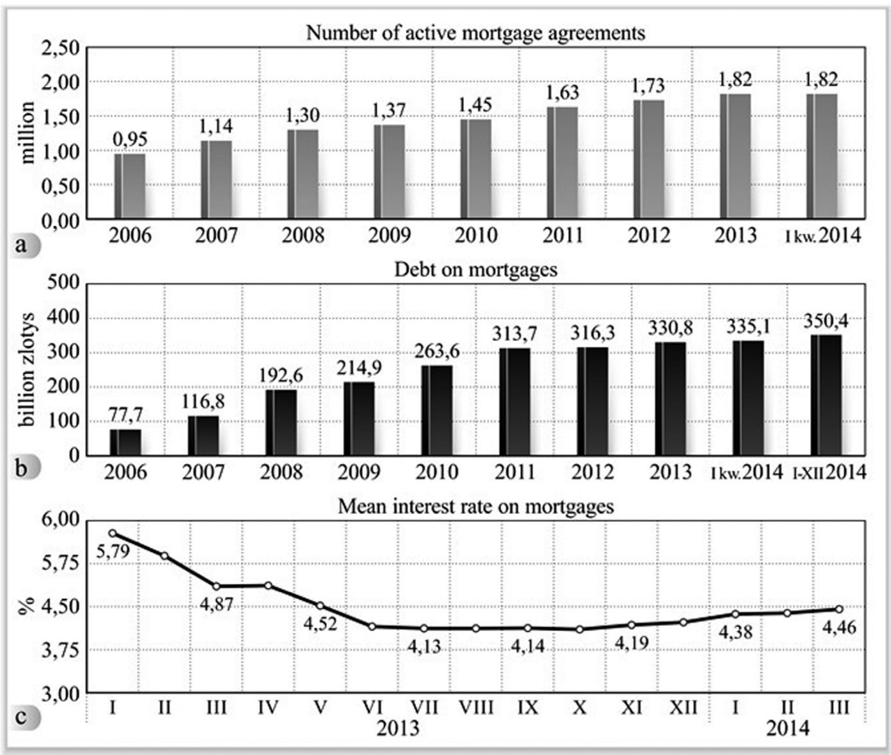
Table 1. Percentage of mortgaged real estate in the European countries (data as of 2011)

European countries	Which part of real estate owners have mortgages			
	Owners (in total)	Retired married people	Households (without children)	Households (with children)
Poland	8.3%	0.0%	4.5%	10.8%
New EU countries	9.4%	1.5%	4.7%	12.7%
the European Union	36.9%	8.3%	23.1%	49.1%
Countries of the „old" EU	46.6%	10.1%	29.0%	64.2%

Source: Eurostat; Turek/Home Broker [2011].

The data show that in 2011, Polish loan market was one of the worst developed in Europe. In 2011, 8.3% of real estate owners (in general) had mortgages, whereas this number at the end of 2013 was over 10%[1]. Furthermore, in 2014, Poland occupied the 26th place (of 28) among the countries examined in terms of popularity of mortgages (Turek 2011). Even in new EU countries, the mean level of 9.4% shows that their mortgage market was better developed than in Poland.

Figure 1. Characterization of new loans in Poland until 2014



Source: Fundacja na Rzecz Kredytu Hipotecznego; NBP; ZBP-SARFIN; ZBP-Raport AMRON-SARFIN 4/2014.

1 Mortgage debt of Poles was around 20 billion zlotys at the end of 2001, 100 billion zlotys in August 2007 [Bankier 2007]. According to Expander, this number was 200 billion zlotys until the end of the first half of 2009, 214 billion zlotys at the end of 2009 [ZBP 2010], whereas in 2014, this value was over 340 billion zlotys.

Table 2. Changes in the number and value of new mortgages in 2008–2014

No.	Year	Number of loans granted	Change in the number of loans granted compared to 2008 as 100%	Value of loans granted (billion zlotys)	Change in the value of loans granted compared to 200 as 100%)
1	2008	286,762	100.00%	57.129	100.00%
2	2009	188,186	65.62% (65.62-100)%=-34.38%	38.592	67.55% (67.55-100)%=-32.45%
3	2010	230,361	80.33%	48.660	85.18%
4	2011	231,159	80.61%	49.210	86.14%
5	2012	196,557	68.54%	39.108	68.46%
6	2013	176,866	61.68%	36.475	63.85%
7	2014	174,087	60.71% (60.71-100)%=-39.27%	36.824	64.46%

Source: elaboration based on the data from NBP, Centrum AMRON [2014].

Figure 1 presents a characterization of the new loans in Poland before 2014, number of active mortgage agreements in Poland in the period of 2006–2014, debt due to mortgages and mean interest rate of mortgages in the period of 2006–2014. The changes in the number and value of new mortgages in 2008–2014 are presented in Table 2.

Figure 1 shows that, in the first quarter of 2014, no increase in the number of active mortgage agreements was observed compared to 2013 (Figure 1a). The increase in debt by around 1% was observed in this period (Figure 1b).

The data presented in Table 2 suggest that the period of the first phase of the financial crisis (2008–2009) is a period of economic downturn and stagnation in the market of mortgages. This period was characterized by a noticeable change in the value of mortgages compared to 2008 (-32.45%) and the number of mortgages granted (-34.38%).

Annual change in the number of new loans in 2014 compared to I-XII 2013 was -1.57% (column 2, 2014/2013). Furthermore, the total value of mortgages for the same period shows an increase by 0.96% (column 5, 2014/2013) [NBP 2014].

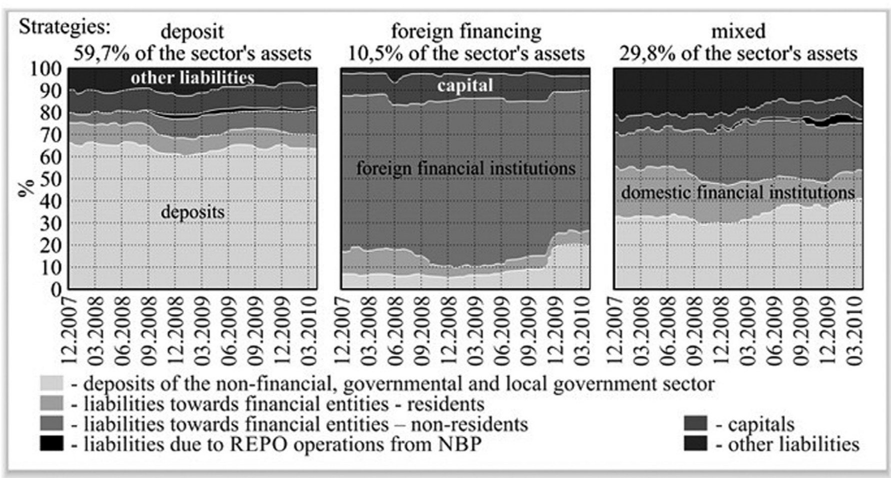
Comparison of the data presented in Figure 1 and Table 2 shows that, in 2014, banks granted around 174.000 mortgages, for which the increase in total debt compared to 2013 was around 6.00%. This low level of mortgages has not been observed since at least 2008.

2. Strategies of financing housing investments

A gradual departure from deposits was observed in Europe in the area of mortgage funding towards covered bonds and other instruments of the financial market. Refinancing in Poland was rested upon universal banks, with a marginal role of specialized mortgage banks.

The banks financed the increase in mortgages with unstable liabilities, adopting various strategies of refinancing the loans granted. The three fundamental models of refinancing mortgages should be emphasized: deposit model, foreign financing model and mixed mode. The diagram for the strategies of refinancing of loans granted is presented in Figure 2.

Figure 2. Strategies for refinancing of the mortgages granted



Source: data from NBP [in:] Piotr Cyburt, Polski list zastawny-Bilans po 10 latach, Finansowanie Nieruchomości, September 2010, pp. 4–14; Piotr Lis, Mechanizmy finansowania inwestycji mieszkaniowych w fazie rozkwitu i kryzysu gospodarczego – wnioski dla Polski, Finansowanie Nieruchomości, December 2011, pp. 14–28.

In the deposit model, banks support their development first and foremost on acquisition of the deposits of the non-financial sector, governmental sector and local government sector. In the foreign financing model, the resources were obtained from foreign owners of Polish banks.

Furthermore, in the mixed model, no dominant source of financing can be indicated.

Banks, in order to implement the deposit strategy and partially the mixed strategy, started competing for the deposits of the population, whereas implementation of the mixed model involved obtaining exclusively the necessary financial support from the western owners.

Figure 3 presents loans and deposits in 2013–2014 and the excess of loans over the deposits in the period from 2010 to the 3rd quarter of 2014 [Baranowska-Skimina 2014].

Analysis of the data shows a noticeable excess of loans over deposits in the non-financial sector, sector of governmental and local-government institutions and in the banking sector in total. This excess (Figure 3c) decreased in general in the (2014/2013) (y/y), arrangement. Only in the sector of governmental and local government institutions, it increased to the level of 9.9 billion zlotys compared to 1.1 billion zlotys in the previous year. According to the data published by KNF [2014], GUS [2014] and ISB NEWS [2014], the value of loans in the banking sector in total increased at the end of 2014 to 995.954 billion zlotys, including:

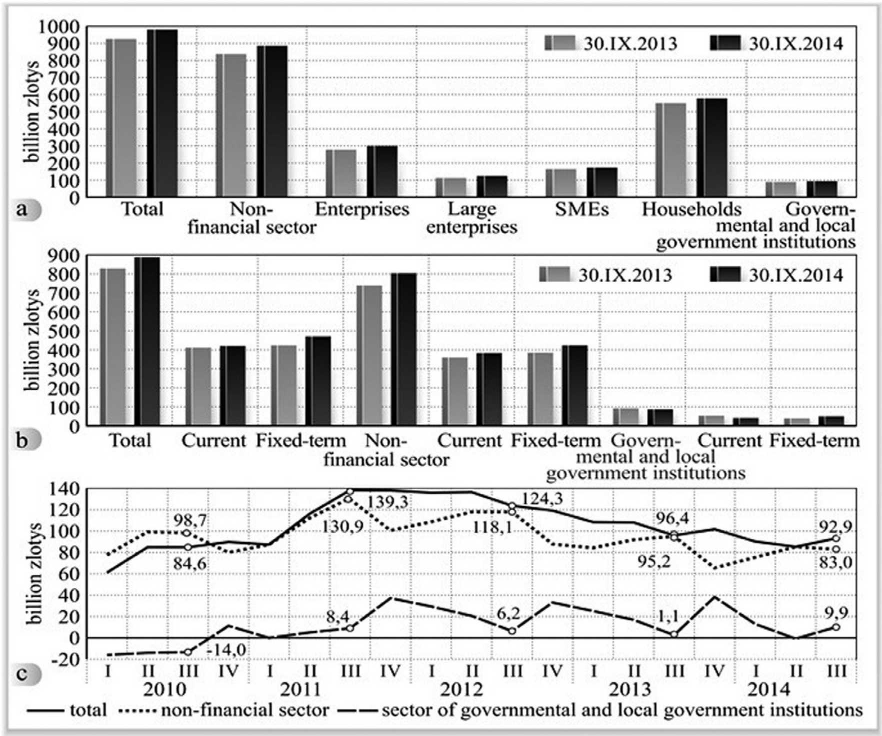
- for the enterprises, it rose to 304.16 billion zlotys,
- for the households, it increased to 587.72 billion zlotys,
- mortgages for households increased to 350.35 billion zlotys,
- consumer credits for private individuals increased to 130.98 billion zlotys.

The value of the deposits in this period rose to 823.695 billion zlotys, including:

- - deposits of the enterprises rose to 216.93 billion zlotys,
- - deposits of the households increased to 585.30 billion zlotys.

It should be emphasized that a noticeable tendency in the excess of credits over the deposits (71,359.13 billion zlotys at the end of 2014) leads to the development of substantial disproportion of maturity deadlines for loans and liabilities, which increases the risk connected with mismatch of loans and the sources of their financing.

Figure 3. Loans (a), deposits (b) and the excess of the value of loans granted over deposits (c) excess according to sectors in the period of 2010–2014



Source: Baranowska-Skimina [2014]; Wyniki finansowe banków I - IX 2014, e-Gospodarka.

3. Covered bonds as an instrument of refinancing of mortgages: the future for mortgage banking

Analysis of the strategy of refinancing of new loans by Polish banks, including mortgages, revealed the need for development of long-term debt instruments, caused by insufficient level of long-term liquidity in Poland. New Basel regulations and the CRD IV[2] package forced implementation of the principle of refinancing of long-term assets: loans secured with mortgages with long-term money. They are conducive in

2 Since January 1, 2014, CRD IV package replaced the directive of the European Parliament and the Council on starting the activity by credit institutions and the European Parliament and Council in terms of capital adequacy of the investment enterprises and credit institutions; https://www.knf.gov.pl/pakiet_crd4.html.

terms of risk weights and calculation of short LCR liquidity and long-term NSFR liquidity for covered bonds [Cyburt 2010, pp. 4–14].

Following the changes in security requirements in European banks (Basel III and CRD IV directive), the Polish legislature amended the act on covered bonds and mortgage banks. The previous act on covered bonds and mortgage banks was prepared based on Polish pre-war regulations on mortgage banks and legislation of Western European countries, especially Germany. The act called into being specialized mortgage banks, which were aimed at granting loans based on the conditions defined in the act on covered bonds and mortgage banks and issuing covered bonds. The resources obtained in this manner are used by banks to finance other loans[3]. It is important that, for potential investors, the covered bond is a financial instrument with low investment risk that results from statutory security requirements.

From the early beginnings, the model of crediting offered by mortgage banks was uncompetitive. The LTV value was used to limit the level of loans that could be granted by specialized institutions, whereas the services of universal banks included loans up to 120% of the value. Since 1997, the act on covered bonds and mortgage banks has been unchanged, except for little corrections.

The security of covered bonds issued by mortgage banks is also stimulated by the conservative policy of valuation of real estate that represents hedging (principles for valuation were defined in the Recommendation F).

Covered bonds should be considered by banks as perfect instruments for long-term financing, but the market of covered bonds in Poland has not developed yet because the mortgage banks lost in competition with universal banks and thus they did not grant loans at a larger scale and did not have to refinance them through substantial issuing of covered bonds.

Furthermore, one of classic instruments of refinancing of loans in banks in Germany is covered bonds, with the total value in circulation exceeding 1.4 trillion euro. German banks are authorised to issue public covered bonds and mortgage covered bonds which are considered as bearer securities or securities to a named person. The dominant importance, however, is from public covered bonds, whose level in circulation exceeded 1 trillion euro in 2003.

3 The investments in covered bonds are oriented at institutional entities, with the main purchasers including investment funds, open pension funds, insurance companies, banks and banking corporations.

According to the data by EBCB for the year 2010, the value of the market of covered bonds in Germany (in million euro) was 639,842, whereas in Poland, this number was only 636, which means 0.09% of this level [UKNF 2013, p. 10].

In 2004, there were 36 institutions in Germany with rights to issue covered bonds, including:

- 21 mortgage banks,
- 2 sea banks (Schiffsbanken),
- 10 national banks (Landesbanken),
- 3 public banks.

Following the year 2004, all the universal banks were authorised to issue covered bonds after meeting very strict criteria [UKNF 2013, p. 9][4].

In 2003, mortgage banks in Germany were the issuers of 55% of covered bonds secured by mortgages. Contribution of commercial banks in these terms is 30%. This results from the fact that the national banks, which are non-specialized banks, offer, apart from covered bonds, other products e.g. deposits or securities.

The number of active mortgage banks in Poland has been maintained at a level of two to three since 1997. As of 5 December 2016, Polish banking system had merely three institutions of this type, operating in the form of specialized mortgage banks [Sitek 2010, pp. 64–120]. These include:

- mBank Hipoteczny,
- Pekao Bank Hipoteczny,

and, the youngest, established recently

- PKO Bank Hipoteczny.

The contribution of covered bonds issued by these banks remains to be insignificant, not higher than one per cent of the values of mortgages granted in Poland. In the most developed real estate markets in the European Union countries, this contribution is several tens percent (Slovakia: 27.7%, Czech Republic: 41.7%, Norway: 39.0%; France 23.8%; Germany 18.2%).

4 According to the information from the Chancellery of the Senate, Bureau of Analyses and Documentation [2012] as of 14 December 2012, German mortgage banks are one of the best operating entities in terms of mortgages and covered bonds. Verband Deutscher Pfandbriefbanken e.V. [2015] is one of 6 organizations that operate within the German banking system Der Zentrale Kreditausschuss (ZKA), a virtual union of all the associations of the Mortgage Bank Association– Verband deutscher Hypotekenbankem. http://docplayer.pl/2402523-Niemiecki-system-bankowy-organizacje-zrzeszajace-banki-funkcjonowanie-federalnego-zwiazku-bankow-niemieckich. html.

In Poland, the assets of the banking sector with the maturity dates of over 1 year at the level of 1.3 trillion zlotys correspond to merely 0.4 trillion zlotys of liabilities [Dżuryk 2014]. This fact shows the necessity of taking effective measures aimed at finding steady long-term sources of financing. The need for increasing the contribution of long-term sources of financing is also caused by the necessity to meet the requirements concerning structural liquidity of CRD IV.

Therefore, the Government started certain measures to promote development of the market of covered bonds by adopting on 26 August 2014 the project of amendment to the act of covered bonds and mortgage banks. These changes were supposed to concern mainly the increasing of the statutory protection of the rights of creditors from covered bonds (new regulations have been in force since 1 January 2016). Through amendment of the regulations, the legislator wants to encourage a broader use of covered bonds [CIR 2014].

The situation of mortgage banks on the mortgage market was the focus of the questionnaire survey oriented at respondents, including universal and mortgage banks [Sitek 2010, pp. 208–214]. The main cause of insignificant contribution of mortgage banks to the market of mortgages was cost of credit, whereas universal banks emphasized the obsolete model of mortgage banking, underdeveloped capital market in Poland and the resulting high cost of financing, competition of universal banks and attitude of customers towards short-term solutions. The particularly interesting responses of universal and mortgage banks concerning the valuation of real estate according to the BHWN value (banking-mortgage value of real estate). Universal banks answered that the BHWN valuation in universal banks would be desirable as it takes into account the tendencies in the real estate markets and determines its value from the long-term perspective. However, the BHWN value should reflect the market price to maximally large extent. Concerning the questions concerning the development tendencies in mortgage banking, with particular focus on the opinion about alternative sources of credit financing, universal banks were also for lifting the exclusiveness of issuing of covered bonds by mortgage banks, since this would lead to greater availability of mortgaged loans.

As early as in 2007, the report by the Mortgage Credit Foundation concerning the instruments for refinancing of mortgage credits postulated the extension of issuing of covered bonds for universal bonds, similar to Germany [Tułodziecka (ed) 2007, p. 25].

Furthermore, according to A. Jakubiak, the Chairman in the KNF, since mortgage banks did not develop in the Polish market to the level assumed by creators of the act in

1997, it would be essential to provide legal conditions for issuing, by commercial banks, of the covered bonds and bonds for uniform assets (mortgage bonds) [Jakubiak 2011].

The securities issued by universal banks would deteriorate stability and security of participants of pension funds. Furthermore, this would become an unclear signal for the market suggesting the attempt to liquidate mortgage banks.

According to the Polish Financial Supervision Authority (KNF), issuing of covered bonds by universal banks creates a worse portfolio of covered bonds. This would lead to a reduction in their quality. Eventually, pension funds would have better (mortgage banks) and worse (universal banks) covered bonds. Their quality is important from the standpoint of issuing rating. The worse quality translates into lower rating, higher cost of financing and, consequently, higher loan costs.

Taking into account all the deficiencies of financing of the market of mortgages, fiscal solutions that stimulate economic benefits, legal solutions that affect safety and opportunities to shift liabilities from universal banks to mortgage banks, a governmental project implemented changes in the market of covered bonds to respond institutionally to new capital and liquidity requirements imposed on banks by the CRD IV directive, mainly limiting financing of long-term credits with short-term deposits [Co zmieni nowa ustawa… 2015]. The proposed changes are aimed at lifting barriers to issuing covered bonds and making covered bonds attractive through adding it a legal form that would ensure popularization of this form of investment. Therefore, covered bonds should be characterized by security of transactions (changes in the bankruptcy and reorganization law).

Amendment of the act of 29 August 1997 on covered bonds and mortgage banks concerns in particular:

- increasing the limit of refinancing loans for housing purposes secured by a mortgage using the resources acquired from issuing covered bonds from 60% to 80% of the BHWN value;
- implementation of the obligation for regular tests of balance between covering and liquidity by mortgage banks;
- specification of the threshold: nominal amount of liabilities not lower than 110% of total nominal amount in the circulation of public covered bonds;
- the increase in opportunities for investing by open investment funds and co-operative savings and credit unions in covered bonds;
- the increase in statutory protection of rights of creditors from covered bonds as a result of the amendment of the act on bankruptcy and reorganization

law, with inclusion of the institution that privileges the creditors (investors) from covered bonds (Dz.U. z 2015 r. poz. 1259).

The changes introduced by the Government to the act are aimed at lifting barriers to issuing covered bonds and making covered bonds attractive through adding it a legal form that would ensure popularization of this form of investment.

Conclusion

Analysis of the role of covered bonds in the process of financing of the real estate market and analysis of new loans and strategy of refinancing of mortgage loans revealed that:

- covered bonds are much better instruments of refinancing mortgages compared to short-term deposits due to their long-term nature (they are mainly issued for 5 years but this period can be longer), which allows for better adjustment of maturity of assets and liabilities in the bank from the standpoint of refinancing of long-term mortgages,
- from the viewpoint of an investor, covered bonds will be an interesting instrument due to legal changes that enhance security of the creditors (issuing covered bonds before the amendment of the act would attract much interest from investors),
- covered bonds are instruments which are cheaper compared to straight securities issued by banks,
- using covered bonds for refinancing mortgages is partially forced by the regulations of the CRD IV directive that oblige loan institutions to improve safety of their functioning,
- no opportunities for issuing covered bonds by universal banks would prevent the emergence of two categories of covered bonds (better and worse), which will contribute to improved security of the financial market,
- large-scale refinancing of mortgage loans with covered bonds may lead to reduction in mortgage costs,
- it can be expected that new mortgage banks will be established in Poland, with the most recent example being PKO Bank Hipoteczny.

As results from the above conclusions, the hypothesis that the system of financing of housing based on the effective market of covered bonds should help avoid the balance gap in banks seems to be verified. Furthermore, a dynamic development of these instruments can be predicted, which should stimulate the revival in the real estate market in Poland.

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The Efficiency Analysis of Pioneer and Aviva Investment Funds

Abstract: Investment funds are an important element of financial market in Poland. Since 1992 they have been present as financial agents. Investors entrust their savings to them to locate profitably in financial instruments. Proper funds management by Investment Fund Management Company (in Polish – TFI) is a very important factor.
The main purpose of the paper is to analyse Pioneer and Aviva funds' management efficiency in the years 2011–2014. The financial ratios have been used. Their construction is based on the data from funds' annual financial reports. Information included in balance sheet and profit and loss statements has been used for the analysis.
The research hypotheses have been formulated, according to which the level of efficiency of the management of funds in the years 2011–2014 has been increasing, despite the uncertainty on the financial market in Poland, and that the investment risk of funds had an impact on the efficiency of funds.
Key words: Investment funds, Financial statement, Financial ratios, Efficiency and profitability management
JEL Codes: G 11, G 21, G 23.

1. Introduction

Investment funds have been present on the Polish financial market since 1992, when the first company "TFP Pioneer" launched its operations on the 28th February. By

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1997, they operated in the form of trust funds. The implementation of the Act of 28 August 1997 on Investment Funds, which was then amended in April 2004, introduced to Polish legislation the terms "Investment Fund Management Company" and "Investment Fund". The goal of the company is to manage the funds in the most efficient way, both in terms of benefits to the customers (satisfactory rates of return), and in relation to the company (while its objective is to generate profit).

The aim of the paper is to analyse the efficiency of the management of the Pioneer and Aviva funds in years 2011–2014. The analysis covered money market funds, bond funds, stable growth funds, balanced funds and equity funds. These types of funds have different composition of investment portfolios, the level of risk and goals of investment policy.

The research hypotheses state that the level of efficiency of the management of funds in the years 2011–2014 increased, despite relatively high uncertainty on the financial market in Poland, and that the investment risk of the funds had an impact on the funds' efficiency.

2. The nature of investment funds' operation

The financial market, in which the matching of supply and demand for financial resources takes place, plays a special role in the transformation of savings into investment. Supply side of the financial market is represented by actors with financial surpluses. The financial market enables them to multiply the money they have. These actors are named as capital donors or investors. They are mainly households and businesses [Nacewski J., Zabielski K., 2000, pp. 15–16].

The functions of financial intermediaries (including investment funds), that use mainly external capital, can be described as [Dobosiewicz 2009, pp. 44–45.]:

- mediation between the owners of surplus funds and those demonstrating a need for cash,
- moving the time of consumption,
- concentrating capital and the transformation of money over time, reducing the financial risk.

Financial intermediary is a company, which provides services for entities which have money surplus at their disposal, and entities seeking capital to implement their plans related to consumption and investments. The role of financial intermediaries is to enable the flow of funds from entities with financial surplus to the entities facing deficit [Wawiernia, Jonek-Kowalska 2009, pp. 14–20].

Compared to banks, investment funds offer entities willing to save more diverse financial instruments in terms of the risk, resulting in the further differentiation of yields. It is important that a wider range of financial deposits provide greater flexibility to the financial market and investment funds, which has a major impact on facilitating and streamlining the process of transformation of savings into capital, followed by a physical investment in the economy at the macro scale [Owsiak 2002, pp. 227–228].

In accordance with the contents of the Act, an investment fund is „a legal person, whose sole business consists in investing funds raised by offering units or investment certificates to the public in securities, money market instruments and other property rights defined in the Act”[1].

Investment funds are institutions that most clearly reflect the idea of collective investing. Unlike other financial intermediaries, investing on the financial markets defines a key goal of their business. Individuals who, for various reasons, are not interested in investing their savings on their own, but recognise the importance of financial market, are the main clients of investment funds [Dawidowicz 2009, p. 11].

Also other entities (e.g. banks, insurance companies, open pension funds) cooperate with investment funds, because they offer diverse allocation opportunities, connected with professional money management. It is worth mentioning that in addition to „standard” savings offer within a selected fund, investment funds provide a number of additional options – these encompass regular saving plans tailored to individual needs and financial possibilities of the client, rentier investment programmes that enable the redemption of units at fixed intervals, or the ability to convert and transfer resources between funds (within the same investment fund management company) [Proniewski, Niedźwiedzki 2001, p. 88].

To quote Article 3 of the Act, the governing body of the investment fund is a „Investment Fund Management Company (in Polish – TFI). It creates investment funds, manage them and represent them in relations with third parties.

The only investment objectives of the fund are to protect the real value of the fund's assets, generating revenues from the assets investments, and an increase in the value of assets entrusted to the company for management. The fund management

1 The Act of May 27, 2004 on Investment Funds, Journal of Laws of 2004 No 146, item 1546, with subsequent amendments

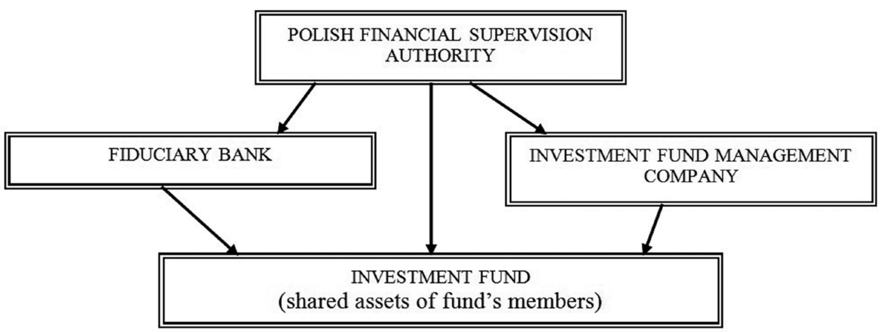
company is obliged to clearly state that it cannot guarantee it will achieve its investment objectives.

From the point of view of funds' customers, the important regulation is the amendment introduced in the Act of 23 November 2012 amending the Act on Investment Funds and the Act on the Supervision of Financial Market. The most important feature of the amendment is the introduction of an obligation to publish information in the form of KIID (Key Investor Information Document) which will replace the information prospects[2].

The most important issue is to determine the profit and risk profile of the selected fund. This indicator is presented on a numerical scale from 1 to 7, and the methodology of its calculation is based on the average fluctuations in pricing in annual perspective, that occurred in the past five years.

The mechanism of supervision of the investment fund and the participating institutions is shown in Figure 1.

Figure 1. Supervision of the investment fund



Source: Banaszczyk-Soroka 2008, p. 58.

To achieve good results within the investment policy, the investors on the financial market must meet three conditions: have an adequately large capital, have enough time and have quick access to important information about the money and capital markets [Jajuga K. Jajuga T. 2006, p. 394].

2 The Act of November 23, 2012 on amendment of the Act on Investment Funds and the Act on Financial Market Supervision, Journal of Laws of 2013 No 70.

Most individual investors do not meet the above requirements and, therefore, they entrust their financial resources to specialized financial institutions, including investment funds. These institutions may take advantages, which are not available to individual investors. The most important are [Kościelniak 1998, pp. 22–34]:

- professional management,
- diversification of the portfolio,
- liquidity of the investment,
- deposit security,
- monitoring of the investment,
- the cost of investing,
- the choice of strategy corresponding to the propensity to take risk

Professional management – due to the capital contributions collected from the fund members, the fund may hire highly qualified specialists trained in professional financial investments. These specialists have several years of experience in asset management and are controlled by the Polish Financial Supervision Authority (in Polish – KNF). They work with teams of analysts who deal with the analysis and interpretation of data flowing from financial markets.

Diversification of the portfolio – it consists of such selection of financial instruments, which would reduce the risk while maintaining or slightly declining expected rate of profit. Some securities are not available to individual investors due to their high nominal value or the way in which they are being sold (transactions in large packages). This includes such instruments as treasury bills, commercial bills, certificates of deposit.

Liquidity – one of the greatest advantage of the investment funds – is the ability to redeem the units at any time (it gives an opportunity to close the investment without any consequences). As a rule, the waiting period for payment of money owed by the fund does not exceed 7 days.

Security of deposits – activities of funds are precisely regulated by law and are subject to ongoing supervision by the Polish Financial Supervision Authority. The fund assets are held by the depository – it may be the Central Securities Depository of Poland or a bank with high equity capital. The depository also takes care of the legitimacy of the operations carried out by the fund.

Monitoring of investments – funds are obliged to regularly publish financial statements so that investors can monitor their investment portfolio and financial condition. They are also required to publish a daily pricing of the units, so that clients can, on a regular basis, assess the profitability of investments made by the fund.

Investment costs – investment funds, due to the low cost of operation, apply a small processing fees and commissions. As a result, a large part of money entrusted by the client to the fund is invested (around 96–98%) [Miziołek 2004, vol. 1, pp. 501–502].

According to the criteria describing the way the fund investment operates, funds can be divided into [Czekaj (ed) 2008, p. 56]:

- open-ended funds,
- closed-ended funds.

Open-ended funds – their characteristic features are: changing number of unit-holders, and the changing value of the units, which represent the property rights of the fund unit-holders. Capital contributed by clients constitutes the fund assets, which are converted into units proportionally to the unit-holders' participation in the fund. Constant changes in the number of fund unit-holders, and the inflow and outflow of capital are forcing the open-ended funds to retain a high degree of liquidity, i.e. readiness to immediate payment in cash the value of units to unit-holders.

Closed-ended funds have a fixed, unchanging number of unit-holders and units – they are called investment certificates and cannot be canceled. They are to be redeemed from the certificate-holders within the deadline set by the fund. A certificate-holder may sell them on the secondary market – transactions are made at the stock exchange or on a special (OTC) market.

3. Methods of evaluation of management efficiency of investment funds

The character of investment fund operations, as well as the principles of formulation and the structure of financial statements make the efficiency analysis related to the area of investment activities of the investment funds. This area is the only type of activities undertaken by such institutions.

To evaluate the management efficiency of the investment fund the following indicators were used:

- Total asset turnover,
- Cost performance index,
- Cost/assets ratio,
- Management fee rate.

Total asset turnover is calculated on the basis of the following formula [Marcinkowska M., 2007, p. 445]:

$$TAT = \frac{RIF}{Assets} x100$$

where:

RIF – revenues on fund's investment.

It informs how many cents from investment fund revenue were generated from one dollar of the fund assets. The higher this value is, the more efficient the use of assets is.

To calculate the cost performance index the following formula is used [Marcinkowska M., 2007, pp. 446 – 447]:

$$CPI = \frac{OC}{RIF} x100$$

where:

OC – operating costs of the fund,

It reports what the share of revenues from investments in operating costs of the fund is. The lower this ratio is, the better the management of the fund by the company is.

Another indicator is the cost/assets ratio. It is calculated using the following formula [Marcinkowska M., 2007, pp. 447–448]:

$$CA = \frac{OC}{Assets} x100$$

It shows what percentage of the fund's net assets are its operating costs. This ratio is desired to be as low as possible.

The last indicator used for analysing the management efficiency is the rate of management fees. It is calculated using the following formula [Marcinkowska M., 2007, p. 448]:

$$MFR = \frac{MC}{Assets} x100$$

where:

MC – managing costs incurred by the investment fund management company.

It informs how many cents per 1 dollar of fund assets are spent on the company management fees. The lower value of this ratio, the lower the share of company compensation in its assets is.

4. Pioneer and Aviva funds efficiency management in 2011–2014

The analysis covered the following funds, managed by both Pioneer and Aviva Investment Fund Management Companies:

- money market fund,
- bonds fund,
- stable growth fund,
- balanced fund,
- equity fund.

These funds have different directions and goals of the investment policy, thus the risk of their investment portfolios is also differentiated.

The analysis is based on data from annual financial reports published by the Investment Fund Management Companies, balance sheets, and profit and loss statements.

Assessment of the management efficiency, including comparison of the Pioneer and Aviva Investment Fund Management Companies, covers the years 2011–2014. The results are presented in the following tables and figures.

Table 1. Total asset turnover ratio

Fund/ Year	2011		2012		2013		2014		Average	
	Pioneer	**Aviva**	**Pioneer**	**Aviva**	**Pioneer**	**Aviva**	**Pioneer**	**Aviva**	**Pioneer**	**Aviva**
Money market	4.0%	2.3%	4.9%	4.7%	3.3%	3.4%	3.0%	2.7%	**3.8%**	3.3%
Bonds	5.8%	3.7%	4.8%	4.1%	3.8%	5.7%	3.4%	2.7%	**4.5%**	4.1%
Stable growth	5.7%	4.1%	5.6%	5.5%	5.0%	3.7%	4.0%	3.7%	**5.1%**	4.3%
Balanced	5.4%	3.8%	4.8%	5.7%	4.2%	3.1%	4.6%	3.3%	**4.8%**	4.0%
Equity	4.2%	4.1%	4.3%	4.6%	4.1%	4.1%	3.5%	3.4%	4.0%	**4.1%**
Average	**5.0%**	3.6%	4.9%	4.9%	**4.1%**	4.0%	**3.7%**	3.2%	**4.4%**	4.0%

Source: own calculations based on http://www.pioneer.com.pl/pioneer/arts.sfr and www.aviva.pl/inwestycje/pobierz-dokumenty-fundusze-inwestycyjne.html – accessed 03.01.2016.

In the analysed period, except 2012, Pioneer TFI achieved better total asset turnover. However, it should be emphasised that within 3 years this ratio declined in case of both analysed funds from 5% to 3.7% and, importantly, there has been a regular downward trend recorded. A similar issue occurs with regard to Aviva TFI.

The best results, as for total asset turnover, were observed for funds with a medium to high level of risk, and lowest – in case of both TFIs – in money market funds, which are the safest ones.

Table 2. Cost performance index

Fund/Year	2011		2012		2013		2014		Average	
	Pioneer	Aviva	Pioneer	Aviva	Pioneer	Aviva	Pioneer	Aviva	Pioneer	Aviva
Money market	21.7%	3.3%	17.7%	2.2%	27.7%	2.8%	28.2%	3.4%	23.8%	2.9%
Bonds	32.4%	42.0%	30.3%	42.6%	41.7%	57.7%	45.9%	52.0%	37.6%	48.6%
Stable growth	90.9%	95.2%	64.3%	54.1%	72.4%	71.8%	84.6%	84.6%	78.1%	76.4%
Balanced	121.6%	135.0%	83.1%	68.6%	94.6%	92.7%	106.6%	120.8%	101.5%	104.3%
Equity	160.7%	14.8%	89.6%	5.9%	103.5%	7.2%	126.6%	8.9%	120.1%	9.2%
Average	85.5%	**58.1%**	57.0%	**34.7%**	68.0%	**46.4%**	78.4%	**53.9%**	72.2%	**48.3%**

Source: own calculations based on http://www.pioneer.com.pl/pioneer/arts.sfr and www.aviva.pl/inwestycje/pobierz-dokumenty-fundusze-inwestycyjne.html – accessed 03.01.2016.

Large disparity in the cost performance index between Pioneer and Aviva TFIs is clearly seen in data. In all the surveyed years, the difference was more than 20 percentage points in favour of Aviva TFI, which means that revenues from investments covered operating costs in a much more efficient way. It should also be noted that in both TFIs level of this indicator declined in 2013 and 2014.

The level of investment risk, in this case, had a direct impact on the cost performance index. High-risk funds have much higher cost performance index than the low-risk funds (the only exception is the Aviva equity fund).

While assessing the cost/assets ratio, its regular improvement (reduction) in both Investment Fund Management Companies can be observed. The Pioneer TFI managed to cut cost/assets ratio by 1.4 cents on zloty of assets in 3 years, and Aviva TFI – by 0.7 cents on zloty. Nevertheless, the better efficiency in this area was recorded by the Aviva TFI.

As in the case of the cost performance index, cost/assets ratio values are dependent on the funds' risk level. The increase of risk reduces, at the same time, efficiency (the only exception is again the Aviva equity fund).

Table 3. Cost/assets ratio

Fund/Year	2011		2012		2013		2014		Average	
	Pioneer	Aviva	Pioneer	Aviva	Pioneer	Aviva	Pioneer	Aviva	Pioneer	Aviva
Money market	0.9%	0.1%	0.9%	0.1%	0.9%	0.1%	0.8%	0.1%	0.9%	**0.1%**
Bonds	1.9%	2.7%	1.4%	1.8%	1.6%	3.3%	1.5%	1.4%	**1.6%**	2.3%
Stable growth	5.2%	3.9%	3.6%	3.0%	3.6%	2.7%	2.3%	3.2%	**2.9%**	3.2%
Balanced	6.5%	5.2%	4.0%	3.9%	4.1%	2.9%	4.9%	4.0%	4.9%	**4.0%**
Equity	6.7%	0.6%	3.9%	0.3%	4.2%	0.3%	4.5%	0.3%	4.8%	**0.4%**
Average	4.2%	**2.5%**	2.8%	**1.8%**	2.9%	**1.9%**	2.8%	**1.8%**	3.0%	**2.0%**

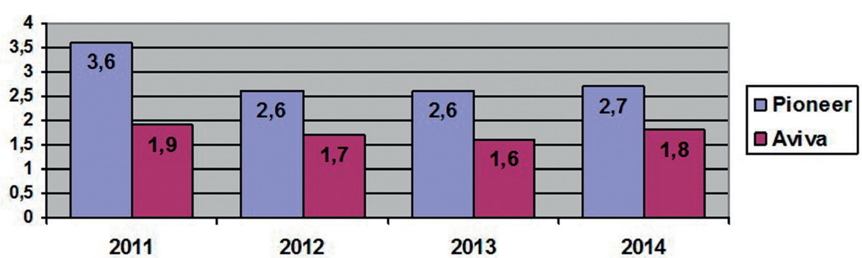
Source: own calculations based on http://www.pioneer.com.pl/pioneer/arts.sfr and www.aviva.pl/inwestycje/pobierz-dokumenty-fundusze-inwestycyjne.html – accessed 03.01.2016.

Table 4. Management fee rate

Fund/Year	2011		2012		2013		2014		Average	
	Pioneer	Aviva	Pioneer	Aviva	Pioneer	Aviva	Pioneer	Aviva	Pioneer	Aviva
Money market	0.9%	0.1%	0.9%	0.1%	0.7%	0.1%	0.8%	0.1%	0.8%	**0.1%**
Bonds	1.5%	1.3%	1.3%	1.3%	1.5%	2.3%	1.5%	1.4%	**1.5%**	1.6%
Stable growth	4.1%	3.4%	3.4%	3.0%	3.4%	2.6%	3.3%	3.1%	3.6%	**3.0%**
Balanced	5.5%	4.4%	3.8%	3.8%	3.7%	2.8%	4.1%	3.9%	4.3%	**3.7%**
Equity	5.8%	0.3%	3.7%	0.2%	3.7%	0.3%	4.0%	0.3%	4.3%	**0.3%**
Average	3.6%	**1.9%**	2.6%	**1.7%**	2.6%	**1.6%**	2.7%	**1.8%**	2.9%	**1.7%**

Source: own calculations based on http://www.pioneer.com.pl/pioneer/arts.sfr and www.aviva.pl/inwestycje/pobierz-dokumenty-fundusze-inwestycyjne.html – accessed 03.01.2016.

Figure 2. The average management fee rate in Pioneer and Aviva TFIs (in%)



Source: own calculations based on Table 4.

The analysis of the rate of management fee showed that declining trend (improvement) of this index, which started in 2012, was not maintained in 2014, when it rose slightly in both Investment Fund Management Companies. Aviva TFI reported higher efficiency in this area – Aviva's rate of management fee was around 0.9 percentage points better than in the case of its competitor.

Conclusions regarding the relationship between efficiency of management fees rate and the investment risk for all types of funds are the same as in the case of the two previously analyses indicators. And once again, the only exception is Aviva equity fund.

5. Conclusions

Management of investment funds is a really important issue, due to the fact that investment funds management companies are institutions of public trust. Investors entrust them with their savings and pay commissions, expecting at the same time professional management of the assets.

The objective of this study was achieved – a comparative analysis was conducted for the Pioneer and Aviva TFIs in terms of management efficiency. The analysis covered four areas.

In the area of assets turnover efficiency a downward trend was observed, which is a negative aspect, because revenues from investments cover the fund assets to a lesser extent.

As far as the covering costs by investment revenues generated by both investment fund management companies is taken into account, last two years brought growing tendency of the cost performance index, which is a negative phenomenon. The relationship between efficiency and investment fund risk was noticeable, with one exception. The growth of investment risk for all funds of Pioneer TFI and 4 out of 5 Aviva TFI funds meant a decrease in management efficiency.

Conclusions with regard to areas of cost/assets ratio and management fee rates are similar. Investment fund management companies were able to reduce significantly these indicators in the analysed period, which translated into improvement of management efficiency. With regard to the relationship between efficiency and risk, findings are identical as in the case of cost performance index.

The research hypotheses were verified mostly negatively, which means that fund management has failed to counteract against the influence of uncertainty on the financial markets. The assumption that an increase of management efficiency is associated with decreasing levels of investment risk was not confirmed by any measure used in the analysis – the highest efficiency of asset turnover took place in funds with average risk level, while in the case of cost indicators only Aviva equity fund was not in line with assumed tendency.

The hypothesis that efficiency of the funds will grow in the analysed period was rejected. In case of total asset turnover ratio a downward trend was recorded, while changes in cost indicators in 2013 and 2014 meant either a slowdown in the upward trend or deterioration in the effectiveness of cost management by the funds.

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The Day of Costs Deduction in PIT in the Light of Research

Abstract: The paper concentrates on the on the day of costs deduction in the tax law. The tax provisions concerning the day of costs deduction in PIT were described. The provisions for taxpayers keeping accounting books or the Tax Book of Revenues and Expenditures were analysed in respect of existing differences in interpretation of the date of costs deduction. The administrative court rulings on the day of costs deduction in PIT were analysed. The general tax interpretation referring to the day of expenses deduction, definitions of direct and indirect costs should be issued. The amendments to the tax law were proposed.
Key-words: income tax, tax expenses, the day of costs deduction

1. Introduction

An important feature of the free market is the amount of taxes the small enterprises must pay. An important component of tax systems is income tax. The Personal Income Tax belongs to one of the most complicated tax in the Polish tax system. For the taxpayers one of the most important element of their business are expenses. The regulations define the expenses for tax purposes. Moreover, they describe the day of costs deduction for business. There are separate rules for taxpayers keeping accounting books and for taxpayers keeping the Tax Book of Revenues and Expenditures. According to the tax

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administration for taxpayers keeping accounting books the provisions allow to use the accountancy principle. Such a rule is also foreseen for the taxpayers keeping the Tax Book of Revenues and Expenditures. However, the provisions were not precisely formulated. There are contradicting interpretations of the provisions on the day of costs deduction. The aim of this article is to assess the tax provisions on the day of costs deduction for business in PIT with the regard of the administrative court rulings.

2. The day of costs deduction in PIT

The provisions in Personal Income Tax concerning the data of costs deduction were changed in 2007. After the changes in the law the day of costs deduction is regulated separately for [Chudzik 2007]:

- taxpayers keeping accounting books,
- taxpayers keeping the Tax Book of Revenues and Expenditures.

2.1. The day of costs deduction in Personal Income Tax for taxpayers keeping accounting books

The day of costs deduction in Personal Income Tax for taxpayers keeping accounting books is formulated in a rather complicated way.

Generally, tax deductible expenses are deducted only in the tax year in which they are incurred. The day of costs deduction in PIT for taxpayers keeping accounting books depends on kinds of cost. In my opinion, the following division of expenses in analysed issue should be discussed in more detail:

- direct expenses,
- indirect expenses,
- special rules for some expenses.

For taxpayers keeping accounting books, tax deductible expenses directly related to revenue, incurred in the years preceding a tax year and in a tax year are deductible in the tax year in which the revenue corresponding to them was earned.

Moreover, as the provisions states: *Tax deductible expenses directly related to revenue, referring to revenue in a tax year and incurred after the end of that year before:*

1. *the preparing of financial statements pursuant to separate regulations, no later than until the expiry of a deadline for the submission of a tax return, if taxpayers are obliged to prepare those financial statements, or*

2. *the submitting of a tax return, no later than until the expiry of the deadline for the submission of the return if taxpayers, pursuant to separate regulations, are not obliged to prepare financial statements*

- *are deductible in the tax year in which the corresponding revenue was earned* [PIT Art 22 it 5a].

Tax deductible expenses directly related to revenue, referring to revenue in a given tax year, and incurred after the day referred to the situation described above should be deductible in a tax year following the year for which the financial statements are prepared or a tax return is submitted [Bartosiewicz Kubacki 2015].

Generally, the expenses directly related to revenue should be matched to the corresponding revenues. The accrual basis and matching accountancy principles were implemented in fact. However, the tax law does not explain what kinds of costs should be treated as direct (or indirect) expenses.

The provisions on the day of costs deduction in Personal Income Tax for taxpayers keeping accounting books for indirect expenses was formulated in following way: *Tax deductible expenses, other than the tax deductible expenses directly related to revenue, shall be deducted after the date of they were incurred. If the expenses regard a period that exceeds a tax year and it is not possible to determine what part of expenses refers to a given tax year, tax deductible expenses shall constitute tax deductible expenses proportionally to the length of the period they refer to* [PIT Art 22 it. 5c]. Moreover, the day of incurring tax was defined in the tax law. *The day of incurring tax deductible expenses, shall be the day on which the expenses are recognised in accounting books (posted) on the basis of an invoice received or the day on which the expenses are recognised based on some other receipt, if no invoice is issued, except for situations when it would concern provisions or accrued expenses recognized as expenses* [PIT Art 22 it. 5d].

The analysed provisions are much more complicated than those on direct expenses. Following this two different interpretation of the day of incurring are presented:

- tax costs are deducted as expenses for the accountancy purposes,
- tax costs may be deducted on another day as expenses for the accountancy purposes.

One possible interpretation assumes that tax costs are deducted as expenses for the accountancy purposes. According to the opinion of Ministry of Finance (and tax administration as well) the recognition of cost in the accounting books determines the date and method of recognition of expense as a tax cost [Koleśnik 2007b]. In other words the accountancy rules have been implemented in the tax law [Pogroszewska 2015]. In fact, it is the accountancy that influences the tax law.

When we analyse the first approach we have to take into consideration following accountancy principles which are applied for the day of cost incurring [Gronos 2015]:

- accrual basis,
- matching,
- conservatism,
- materiality.

According to accrual basis principle revenues are recognised as soon as a product has been sold or a service has been performed regardless of when the money is received. The costs are reported as the expenses are run irrespective of the time of their payment. The transaction has to be recorded even if the invoice has not been issued but its value has been reliably estimated [Walińska 2013, Helin 2014, Świderska Więcław 2012, p. 58]. As the provisions states *all income generated by a reporting entity and all related expenses incurred by that reporting entity, in respect of a given financial year, should be recognised in its account books irrespective of their payment date* [Accountancy act Art 6].

One of the most important accountancy principles is matching principle. The accountancy act defines this principle in following way *in order to match income and related expenses, expenses or income relating to future periods, as well as expenses of the current period not yet incurred, should be recognised in assets or liabilities of that reporting period* [Accountancy act Art. 6]. Simply explaining expenses should be matched with revenues. The principle states that the expense is occurring as the sale is occurring. So if the sale occurs in the future period at least the direct costs should be reported in the future period. If we are not able to measure the future economic benefit of some expenses we charge such amounts to expenses in the period that the expenses are run. So the costs are reported as an expense in the period when the income is earned but not in the period when the costs are paid [Walińska 2013, Gmytrasiewicz Karmańska 2002, p. 23].

Another accounting principle is conservatism principle. The revenues and assets should be not overestimated and the expenses and liabilities should be not underestimated [Olchowicz 2009, p. 30]. Under this principle for the purpose of the financial profit/loss, should be taken into account [Helin 2009, p. 96]:

- decreases in the value-in-use or commercial value of assets, including in the form of depreciation or amortization charges;

- only those other operating income and extraordinary gains that are certain;
- all other operating expenses and extraordinary losses incurred;
- provisions for the risks that are known to the reporting entity, potential losses, and consequences of other events.

The next accountancy principle which may influence the day of costs deduction is materiality principle. This principle allows simplifying the recording, valuation if an amount is insignificant. The literature data proposes indicators to decide whether an amount is insignificant [Sołtysiński et. al. 2015]. The provisions describe the materiality principle in following way *when defining the accepted accounting principles (policy), all events relevant to the assessment of the financial position and profit/loss report of the entity should be identified separately* [Accountancy act Art. 8]. Within the scope of the accepted accounting principles (policy), a reporting entity may apply a simplified approach, unless it materially affects the performance of the obligation for applying the accepted accounting principles (policy) in order to give a true and fair view of their financial position and profit/loss report [Gronos 2015].

So the accountancy act influences the tax law. It means the accounting policy decides on the day of costs incurrence for tax purposes. The accountancy policy adopted in the company may allow recording insignificant amounts of costs in one reporting period even if they are related to incomes earned in another period. The entity decides in fact on the level of insignificant amounts.

The question arises if the tax authority is allowed to audit the accountancy policy adopted in the company if it is complied with accountancy law and principles. On one side the accountancy policy influences the tax liabilities. So the tax authority should be right to audit the accountancy policy and should be entitled to correct the tax expenses if the accountancy policy would breach the accountancy law or principles. On the other side, the accountancy policy may differ very much due to not strict rules of accountancy law. The accountancy law uses very often different assessment methods for valuation or establishing the level of insignificant amounts. Companies may implement to their accountancy policy spectrum of different solutions. It would be very difficult for tax authorities to prove that the concrete element of accountancy policy is not complied with the accountancy law or principles. It may encourage the taxpayers to avoid the tax. The company is able to manipulate the level of deductible expenses in one reported period due to their accountancy policy.

For the taxpayers, this interpretation makes the recording costs simpler. There are no differences in day deduction of costs in accountancy and tax books. Some interpretation problem may concern the following part of tax law. *If the expenses regard a period that exceeds a tax year and it is not possible to determine what part of expenses refers to a given tax year, tax deductible expenses shall constitute tax deductible expenses proportionally to the length of the period they refer to*. It means that such expenses should be deducted proportionally to the length of the period they refer to even if they are deducted in another way for tax purposes and financial statement [Koleśnik 2007b].

However, another interpretation on the day of costs deduction is also presented. Tax costs may be deducted on another day as expenses for the accountancy purposes. The legislator tried to implement the accountancy principles but it was not successful [Czajkowska 2014]. The recognition of expenses in books cannot change the qualifications of the expense for tax records. According to this opinion, there is no basis to interpret the term „deductible" as „cost recognized in the accounts of" using in this respect the Accounting Act. On the date of incurrence of the expense may not decide the accountancy law without direct expressing it in tax law [Daszuta 2014].

When we use this approach there are differences between income calculation and profit calculation. It requires a proper recording in books and evidences.

The next issue on the day of costs deduction to be analysed are special rules for some expenses. The Personal Income Tax foresees special rules for deduction of some expenses. The provisions decide sometimes on the day of the costs' deduction in another way and independently than it is described for direct and indirect expenses [Chudzik 2007]. For example special rules concern the wages, social security premiums, development costs, interests.

2.2. The day of costs deduction in Personal Income Tax for taxpayers keeping Tax Book of Revenues and Expenditures

In the case of the day of costs deduction separate provisions in Personal Income Tax concerns taxpayers keeping Tax Book of Revenues and Expenditures. The tax law should be analysed for taxpayers [Koleśnik 2007a]:

- keeping Tax Book of Revenues and Expenditures as the rules for taxpayers keeping accounting books,
- keeping Tax Book of Revenues and Expenditures in the simplified way.

The taxpayers keeping Tax Book of Revenues and Expenditures may use the rules for taxpayers keeping accounting books provided that the evidences are continuously kept in a tax year in such a way that it is possible to distinguish tax deductible expenses referring to that tax year only [Chudzik 2007]. So the taxpayers have to distinguish between the direct and indirect expenses and use the rules for taxpayers keeping accounting books. However, the provisions indicate that the day of incurring tax deductible expenses for taxpayers keeping Tax Book of Revenues and Expenditures is the day of issuing an invoice or another receipt which is the basis for recognising the expenses. The distinction between the direct and indirect expenses suggests however that if we have the direct expenses they should be matched to the revenues irrespectively the day of issuing an invoice (or another document). Also, the issues discussed for taxpayers keeping accounting books can be repeated like the distinction between the direct expenses and indirect expenses.

The next possible approach for taxpayers keeping Tax Book of Revenues and Expenditures is deduction in simplified way. According to the law, the day of incurring tax deductible expenses for taxpayers is the day of issuing an invoice or another receipt which is the basis for posting (recognising) the expenses. So the date of issuing an accounting document is the day of incurring tax deductible expenses [Koleśnik 2007a].

By the way, the name controversy on deduction in simplified way should be explained. Some authors [Zwolenik 2011] use the name "keeping the Tax Book of Revenues and Expenditures on cash basis" instead. Till the year 2006, the date of incurring the expenditure (cash basis) was one of possible ways of cost deduction for taxpayers keeping the Tax Book of Revenues and Expenditures. Although the provisions have changed and cash basis is no more used as deduction rule for expenses, the formula "keeping cash basis the Tax Book of Revenues and Expenditures" is still in use. In my opinion, such name is a misunderstanding. According to the law, the date of issuing an accounting document is the day of incurring tax deductible expenses. That is why the name "keeping accounting books in simplified way" is much more proper.

3. The date of costs deduction for personal income tax purposes – research findings

The empirical part of this article is based on the analysis of case studies derived from the rulings of the Administrative Court. Taxpayers challenging decisions of tax authorities may lodge a complaint with the Voivodeship Administrative Court (VAC), which is competent to verify whether the decision has been issued according to the law in force. A complainant who disagrees with the ruling issued by the Voivodeship Administrative Court may lodge a cassation appeal to the Supreme Administrative Court. An analysis of court rulings concerning the date of costs deduction allows identifying the proper interpretation of provisions. For the purposes of this article, the analysis covered all Administrative Court's rulings issued in 2015 that were available in the Legalis database on 31 December 2015. A total of 67 rulings made in connection with provisions on the date of costs deduction were analysed. The rulings concerning the date of costs deduction after 2006 were made in the minority of cases (see table 1).

Table 1. Types and numbers of analysed rulings from Legalis data basis

Kind of case	Rulings on the day of deduction after 2006	The rulings on the day of deduction after 2006 as a share of all rulings	Other cases than the rulings on the day of deduction after 2006	Other cases as a proportion of all rulings
No. of cases	18	27 %	49	73%

Source: developed by the author.

Almost 27% of the analysed rulings (see table above) were issued in connection with provisions on the day of deduction after 2006. As many as 49 cases dealt with other issues like the day of deduction before 2007 or the deduction of costs at all. A more detailed analysis was applied to 18 rulings made in cases where the provisions on the day of deduction after 2007 were interpreted. Most of them concerned the advance rental of operating leases (see tab. 2).

Table 2. Numbers of rulings concerning estimation methods and other matters related to income taxes

No. of analysed rulings	No. of rulings on advance rental of operating leases	Rulings on advance rental of operating leases as a share of analysed rulings	No. of rulings in cases concerning matters other than the advance rental of operating leases	Rulings on other matters as a share of analysed rulings
18	10	55%	8	15%

Source: developed by the author.

The data in table 2 show that most of the rulings concerned the advance rental in operating leases. The tax authorities demanded the advance rental of operating leases to be accrued proportionally to the length of the period of the lease agreement. The administrative courts explained that such a rental is an indirect expense and is not related to the other rentals. So it may be deducted as an expense at the beginning of the lease agreement. Other cases concerned different issues. As many as

3 rulings determined the distinction between the direct and indirect expenses. The administrative courts were in favour of indirect costs in analysed rulings. In one ruling the administrative court explained that keeping Tax Book of Revenues and Expenditures in simplified way does not mean the cash method of deductible costs. In another case according to the court the expenses directly related to revenue should be matched to the corresponding revenues. One ruling concerned the way of issuing the documents that are the basis to deduct the cost in simplified way of expenses deduction for Tax Book of Revenues and Expenditures. The administrative court allowed using the description of purchased goods as the accountancy. In the next ruling, the administrative court maintained that only taxpayers keeping Tax Book of Revenues and Expenditures as the rules for taxpayers keeping accounting books have to match the expenses to the adequate period (tax year). In the last analysed case, the administrative court stated that in keeping Tax Book of Revenues and Expenditures as the rules for taxpayers keeping accounting books the provisions on the calculation of income taking into account the inventories (at the beginning and the end of the tax year) should be also used.

Conclusions

The PIT determines the day of costs deduction. The day of costs deduction is regulated separately for taxpayers keeping accounting books and taxpayers keeping the Tax Book of Revenues and Expenditures. However, the provisions for taxpayers keeping accounting books are not only complicated but also unclear. Different interpretations are possible on the using accountancy rules for tax provisions. The analyses of rulings show that the opinion of tax administration is not always supported by the administrative courts. If the taxpayer would like to use accountancy rules for tax provisions he/she is recommended to apply for an individual interpretation. The issuing of the positive interpretation by the tax administration for the taxpayer is very probable and it would allow him/her to use the accountancy principles in the tax law without fear of the change of the tax administration opinion in the future. Thus, it causes the tax law interpretation problems, the general tax interpretation referring to the day of expenses, definitions of direct and indirect costs should be issued.

The provisions for taxpayers keeping accounting books require amendments. If the approach that tax costs are deducted as expenses for the accountancy purposes is to be maintained it should be directly written in the tax law. However, it makes avoiding tax easier.

The provisions for taxpayers using simplified method of cost deduction are clear and do not cause such problems with the interpretation. I would recommend to implement them also for the taxpayers keeping accounting books especially for indirect costs. The precise definition of direct and indirect expenses should be also given.

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Value Migration In Companies Paying High Dividends

Abstract: Controversial research threads in the theory of corporate finance which have not been conclusively resolved yet include, among others, the issue of profit distribution considered in the context of the valuation of the shares stock of exchange listed companies. The article puts forward a hypothesis that companies sharing their profits with shareholders increase capital contributed to them by investors to a larger extent than those not doing so. That would mean that dividend payment positively affects a rise in the company market value. In order to verify the hypothesis, the phenomenon of value migration was used reflecting the effects of company valuation by the capital market. The empirical analysis covered a set of 32 companies selected on the basis of the WIGdiv index portfolio composition. The primary criterion for including companies in that index is the payment of relatively high dividends. The analysis of the "market value / equity capital" ratios in companies paying high dividends in comparison to all companies seems to confirm the put forward hypothesis. In 2014 the surplus of market value over equity capital was shown by as many as 81.2% of high-dividend companies, whereas that percentage was only 44.6% for all listed companies. Moreover, shareholders of high-dividend companies might count on higher profits from dividends. In 2014 dividend yield for companies paying high dividends was 5.7% compared to 3.1% for the other companies.
Key words: Value migration, dividend, listed company

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Introduction

Controversial research threads in the theory of corporate finance which have still not been conclusively resolved include, among others, the issue of profit distribution considered in the context of the valuation of shares of stock exchange listed companies. That specifically concerns dividend payments by companies. Although allotting generated profits to dividends means an outflow of cash from the company, which to some extent limits its ability to produce income, the payment of dividends is generally regarded as a positive phenomenon by investors and exerts a rather positive impact on the company market valuation. That especially concerns companies regularly paying rather high dividends. Thus, a hypothesis can be put forward that companies sharing their profits with shareholders increase capital contributed to the company by the investor to a larger extent than those that do not do so. Then, along with the dividend, the shareholder may expect a rise in the share prices. At the same time, for the company, that means an increase in the market value of its equity capital. One of the methods to verify the formulated hypothesis is to use the phenomenon of value migration, which reflects the results of the company's valuation by the capital market.

The aim of the article is to analyse and evaluate the process of value migration in companies paying high dividends in relation to their stock market valuation. The study covers a selected group of companies listed on the Warsaw Stock Exchange. The selection was based on the WIGdiv index portfolio composition. The analysis concerned 32 companies which were included at least twice in that portfolio in the years 2012–2014. Along with the market value of companies, the study on capital migration also applied the "price to book value" (P/BV) ratio which, as suggested by its name, reflects the market valuation of equity capital.

Essence and Measurement of Value Migration Phenomenon

Economic literature most commonly associates the value migration phenomenon with capital flows. They ultimately translate into the market value of enterprises. The term "value migration" was first proposed in the mid-1990s by A. Slywotzky who interpreted it as follows "*...value leaves economically obsolete business designs and flows* *to new business designs that more effectively create utility for the customer and capture value for the producer*" [Slywotzky 1996, p. 21]. Out of several other definitions offered by the literature, the one formulated by M. Siudak has been chosen for the purposes of this study: "*Value migration consists in the outflow of value from one enterprise or sector to another as a result of looking for opportunities of effective capital allocation*" [Siudak 2001, p. 155]. The most in-depth analysis of the phenomenon on the Polish capital market for the years 2002–2006 was carried out by D. Siudak [2013].

Value migration should also be perceived in the context of the key objective of the enterprise, which is nowadays considered to be maximising value for customers and owners. If the firm is able to ensure a sustainable, long-lasting rise in value for owners, exceeding the average rate of return, it stands a chance of becoming an entity which more quickly and effectively attracts capital [Herman, Szablewski 1999, p. 35]. Therefore, when formulating development strategies, a model ensuring solely an increase in sales, profit and market share is more and more often abandoned to be replaced by solutions guaranteeing a sustainable rise in the company's share in value migration. Only part of value creating activities is controlled by the enterprise, while others depend on other entities the enterprise is linked with (suppliers, customers, distributors). As value is subjectively perceived by specific interest groups, it is difficult to measure value and value migration. In such a case, the most objective indicator of value and value migration seems to be the company market value [Szablewski 2009, p. 294].

The company market value is subject to valuation by the capital market on a daily basis. It is where expectations of investors about the efficacy of allocation of capital entrusted to the company are confronted. Based on the appraisal of the company value by investors on the capital market, the price of the share is set, hence leading to value migration among companies.

Value migration is most commonly described and evaluated based on the three-phase model expounded by A. Slywotzky [Slywotzky 1996, p. 50]:

- value inflow (value is taken over by the company),
- stability (relative market position stability),
- value outflow (loss of value of some companies to the benefit of others).

In order to be able to utilise that model, it is essential to assume a particular manner of measuring the value migration process. Certainly, the easiest way to measure that is to express migration in absolute values. That manner of measurement, however, does not take into account differences in the size of companies. Thus, a more appropriate formula is the ratio of the price (market value) to the book value – P/BV. [Slywotzky, Morrison, Andelman 2000, p. 11]. It is one of the key capital market multipliers as the effect of proper enterprise value management is a surplus of the market value over the book value of capital invested in it by owners (shareholders). The essence of creating value added is the situation where the market value of capital historically invested by owners rises over its book value. The book value represents the actual amount of capital transferred by investors to the firm. If the enterprise uses the capital effectively, it achieves the rate of return on the capital which exceeds the cost of acquiring the capital. That means that it follows a development strategy ensuring the positive net present value (NPV) from undertaken investment projects, thus creating value added [Michalski 2001, p. 95].

It is only at the time of setting up the company that its net book value, resulting from the opening balance sheet, equals its market value. In the course of conducting business, the market value begins to differ from the book value as both the company market and book values change. Hence, the P/BV ratio describes the status at a given time. When comparing P/BV values over a particular period, it can be determined whether value creation in its relative aspect is observed. Taking the above into account and referring to the objective of the study, the analysis of the capital migration process will use, along with the market value, the P/BV metric.

Capital migration can be analysed both for a particular company and within a selected system making up a set of companies (companies paying high dividends in our case). As value migration may have its source outside the analysed system, comparisons with mean P/BV values for stock market indices enable to thoroughly analyse the value migration phenomenon in comparison to the stock market or its selected segments. At this point it should be emphasised that, although migration determinants in relation to individual enterprises are mainly the level of competitors' development, the enterprise market share and profitability, merger and acquisition processes, the drivers of value migration also include factors independent of the enterprise, such as macroeconomic conditions of carrying out business activity, situation on international financial markets or access to attractive investment projects [Marcinkowska 2000, p. 13].

WIGdiv Index as a Basis to Identify Companies Paying High Dividends

Dividends as a criterion for choosing investment in shares have long been of interest to researchers. Despite numerous attempts to clarify the importance of dividend for stock market investors, there are still different opinions on that issue. In general, they can be classified into two main currents, i.e.:

- The dividend irrelevance theory whose precursors were M. Miller and F. Modigliani [Miller, Modigliani 1961]. They tried to prove that profit distribution and dividend payment do not significantly affect decisions concerning the purchase of shares as the decisions mainly depend on profit generated by the company.
- The dividend preference theory initiated by M. Gordon, E. Shapiro and J. Lintner [Gordon, Shapiro 1956] [Lintner 1956]. It assumes that investors attach more weight to dividend incomes than to earnings on rising share prices as the latter carry more risk.

From the point of view of our interest, we are inclined to accept the assumptions of the latter theory. For analytical purposes, it is essential to assume particular criteria based on which the company may be classified as one paying high dividends. As there are no objective solutions in that respect, it was arbitrarily decided that the basis for the selection of dividend companies would be the fact that a company is included in the WIGdiv stock market index portfolio. As indicated by results of numerous studies, one of the regularities of the capital market development is that investors demand higher return on investment in shares of companies regularly paying dividends and characterised by high dividend yield [Wypych 2003, p. 380] [Kowerski 2011, p. 90] [Konieczka, Szyszka 2013, p. 185]. And it is the regularity of dividend payments and, especially, the dividend yield that is a basis for including companies in the WIGdiv index. Thus, the assumption of dividend yield, which reflects the relation of the dividend amount per share to the share price, as a criterion for selecting companies which pay high dividends should not raise doubts.

The WIGdiv Warsaw Stock Exchange Dividend Index has been published since the first session in January 2011. The updated rules of its construction were specified in Resolution No. 656/2014 of the Warsaw Stock Exchange Management Board dated 3 June 2014. Pursuant to its provisions the index participants are shares offering the highest dividend yield in the current year, which in the last 5 financial years have regularly paid dividend (the criterion for regularity is to pay dividend at least 3 times in the last 5 financial years). That means that the composition of the index may change every year, which is actually the case. The WIGdiv index portfolio may include shares of 30 companies which in the index ranking built after the last trading session in October took up a position not lower than 150th, which means that, in practice, WIGdiv index participants are mainly companies of WIG20, mWIG40 and MiS80 indices. The said Resolution allows, in specially justified cases, more or fewer than 30 companies to participate in the index.

As the WIGdiv portfolio composition changes and the analysis covers dividend payments for the years 2012–2014, an additional selection criterion was assumed, namely participating in the index at least twice in the years 2012–2014. That condition was met by the total of 32 companies. Their list, considering their participation in the main stock market indices, is shown in Table 1.

Table 1. Companies paying high dividends by inclusion in WIG20, mWIG40 and sWIG80 stock market indices

Index	Companies
WIG20	**ASSECOPOL**, **BOGDANKA**, EUROCASH, **FORTE**, **KGHM**, **ORANGE**, **PEKAO**, PGE, PGNIG, **PZU**, SYNTHOS, TAURONPE
mWIG40	AMICA, **BUDIMEX**, EMPERIA, FORTE, **GPW**, **HANDLOWY**, **KĘTY**, ORBIS, **SANOK**
sWIG80	ABCDATA, ACTION, ASSECOBS, BENEFIT, DĘBICA, DOMDEV, MENNICA, PELION, **ŚNIEŻKA**
Not included in the above-mentioned indices	CEZ, RADPOL, WIELTON

Source: Own work based on the analysis of WIGdiv index portfolio composition.

There is the greatest number of the WIG20 companies (11), which means that entities of the highest market value play an important role in the structure of dividend companies. Three companies do not participate in any of the mentioned stock market indices. Names of companies which were included in the WIGdiv index every year from 2012 to 2014 were boldfaced. There are 14 of them, out of which a half participates in the WIG20 index. Sometimes a company participates in the current year portfolio although it does not pay dividend that year because the selection of companies to be included in the portfolio is based on the data for the previous year – such a situation occurred in 2012 for three companies: AMICA, MENNICA and PGNIG.

Dividends and Value Migration – Empirical Study

Companies paying high dividends play an important role on the stock market. In the years 2011–2012 their share in the market value of domestic companies (only the Czech CEZ company participates in the WIGdiv index) exceeded 49% and in the years 2013–2014, due to the rise in the number of listed companies, it fell to about 41%. That confirms the earlier formulated conclusion that WIGdiv companies are relatively big ones.

Overall information concerning market value migration in companies paying high dividends is shown in Table 2. It is clearly visible that the market value fluctuated while the book value steadily rose to level off in the last period. The comparison of data for the end of December 2011 and 2014 indicates almost no increase in the market value over the whole analysed period (a rise of 0.4%), while the book value went up by 8.7%.

Table 2. Market value migration in companies paying high dividends in absolute terms

Specification		31 Dec 2011	31 Dec 2012	31 Dec 2013	31 Dec 2014	2011–2014 change
Market value in bn PLN		293.4	317.1	290.5	294.5	1.1
Book value in bn PLN		214.5	222.7	234.7	233.1	18.6
Change in a given period (%)						
Market value		x	8.1	-8.4	1.4	0.4
Book value		x	3.7	5.5	-0.7	8.7
Number of companies which reported:						
value inflow	bn PLN (number of companies)	x	51.4 (24)	11.8 (24)	17.9 (14)	43.8 (23)
value outflow		x	27.7 (8)	39.9 (8)	13.9 (18)	42.7 (9)
balance		x	23.7	-28.1	4.0	1.1
Number of companies which reported a rise in book value		x	26	24	24	25

Source: Own work based on Stock Market Yearbooks 2012–2015.

In 2012 there was a positive market value migration balance amounting to PLN 23.7 bn, which accounted for 7.4% of the market value of companies. Value inflow was reported by as many as 24 companies. A year later the situation dramatically changed. Although value inflow was again observed for 24 companies, the value migration balance was negative: – PLN 28.1 bn. The principal reason behind that situation was a fall in the market value of companies of the energy and raw materials sectors. In 2013 the stock market capitalisation of CEZ, PGE, TAURONPE and KGHM decreased by over 25%: from PLN 139.6 bn to PLN 104.2 bn. In 2014 most companies (18) showed a fall in value but the migration balance for all the companies was positive. It was significantly affected by an increase in the value of energy companies CEZ, PGE and TAURONPE of PLN 12.3 bn.

Taking into account the whole analysed period, over 70% of companies had a higher value in 2014 compared to 2011 (23 companies). The largest decreases in market value characterised CEZ (a fall of PLN 24.7 m, i.e. of 33.7%) and ORANGE (a fall of PLN 12.1 m, i.e. of 52.6%), whereas the largest increases in value occurred for financial sector companies: PZU (57.3%), Handlowy (56.9%) and PEKAO (26.7%) – the market value of those three companies went up from PLN 72.6 bn in 2011 to PLN 102.8 bn in 2014. Therefore, market value migration in companies paying high dividends should be positively evaluated.

Even more advantageous was the situation concerning changes in book value. A vast majority of companies paying large dividends (above ¾) reported rises in book values both in specific years and in the whole analysed period. That resulted, among others, from a relatively good financial condition, reflected in the generation of profit, which increased equity capital.

In order to perform a more in-depth analysis of the migration process based on changes in market value, the P/BV metric can be studied. Although the absolute market value characterises the migration process on the part of the company, the P/BV applying valuation enables to assess the process from the point of view of the company's owner. Relevant information describing that aspect is shown in Table 3. In that case, companies paying high dividends are also compared to all the stock market companies.

Table 3. Value migration in companies paying high dividends based on P/BV ratio

Specification	31 Dec 2011	31 Dec 2012	31 Dec 2003	31 Dec 2014
P/BV ratio (mean value)				
High-dividend companies	1.37	1.43	1.24	1.26
All listed companies	1.06	0.89	0.96	1.09
Percentage of companies with P/BV above 1				
High-dividend companies	65.6	71.8	84.4	81.2
All listed companies	52.8	43.0	49.6	44.6
Dividend yield (%)				
High-dividend companies	6.0	6.9	6.2	5.7
All listed companies	2.9	3.9	3.6	3.1

Source: As for Table 2.

As a result of fluctuations in the market values of companies and the rise in their book values, the P/BV metric fell from 1.43 in 2012 to 1.26 in 2014. Nevertheless, a majority of the companies (20) showed a higher P/BV value at the end of 2014 than three years before.

It should, however, be clearly emphasised that the value of that metric for the studied companies was significantly higher than for the whole body of companies listed on the stock exchange and exceeded 1 every year. The share of companies with the P/BV value above 1 in the studied population rose from 65.6% in 2011 to 81.2% in 2014. That percentage for the whole body of stock exchange companies was considerably lower and did not exceed 50% in the years 2012–2014. Thus, it can be stated that companies paying high dividends created value for their owners to a larger degree than the whole body of the companies. Dividends were also a notable benefit for shareholders. The mean dividend yield for companies paying high dividends was almost twice as high as for the other stock exchange companies.

Conclusion

The initially put forward research hypothesis has not been fully positively verified. Due to turbulence on financial markets, the values of analysed companies fluctuated and thus at the end of 2014 they only slightly exceeded the values at the end of 2011. On the other hand, a positive phenomenon was a noticeable rise in the equity capital value, which reflected the good financial condition of companies paying high dividends. None of the companies reported a loss over the study period. The more in-depth analysis of the market value / equity capital ratios in companies paying high dividends as compared to all companies confirms, however, the put forward hypothesis. Companies paying high dividends look much better. In 2014 the surplus of market value over equity capital was shown by as many as 81.2% of high-dividend companies, whereas that percentage was only 44.6% for all listed companies. Moreover, shareholders of high-dividend companies could count on higher profits from dividends. In 2014, the dividend yield for companies paying high dividends was 5.7% compared to 3.1% in the other companies.

The received results should be treated with due caution. A three-year study period is too short to draw definitive, general conclusions. It is also possible to take different methodological approaches to studying the value migration process. Although the article expands the knowledge of the impact of dividend payments on share prices, it ought to be regarded as an inspiration for further research and analysis of those issues.

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What is Missing to Compare the Effectiveness of Health Care Financing Systems from the Quality of Life Perspective? Poland versus Spain Example

Abstract: It is expected that health care systems affect the level of health in a society which in turn is a basic component of the quality of life. However, it is less clear how to assess such influence. In this short article we focus on Poland and Spain. We outline their health systems and the level of their financing. This is followed by a comparison of some health indicators from Eurostat cross cutting topic: *Quality of Life – Health*. An argumentation is given that the "self-reported unmet needs for medical examination" could be an unbiased handle to assess an important aspect of the influence of health care systems on the quality of life. Unfortunately, in authors' opinion, information available under this cross cutting topic is not detailed enough for this purpose.
Key words: quality of life, financing, indicators
JEL: H51, I14, I31

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Introduction

Improvement of the quality of life (QoL) has long been a direct and indirect goal of individuals, communities, nations and the entire humanity [Constanza et al. 2007]. According to [Schuessler and Fisher 1985], understanding QoL has huge potential implications, since improving it is a major policy objective. Defining QoL, and especially measuring progress in this respect, is still seen as an important challenge for researchers in various fields and for policy makers. There exist many reasons for this, including, e.g., the multidisciplinary nature of QoL. QoL is examined within multiple fields and in many ways [Zalewska 2012]. Selected definitions were reviewed in [Łuszczyk, pp. 104–106], and the history and main conceptual approaches can be found in [Vesan and Bizzotto, pp. 4–8]. One of the broadest QoL definitions is an outcome of the WHO works (WHOQOL, standing for WHO Quality of Life group). "*Quality of life is an individual's perception of his/her position in life in the context of the culture and value systems in which he/she lives, and in relation to his/her goals, expectations, standards and concerns. It is a broad-ranging concept, incorporating in a complex way the person's physical health, psychological state, level of independence, social relationships, and their relationship to salient features of their environment*" [Kuyken 1995].

In this article, we deal with only one aspect of the QoL: the level of health of a society. We put the following question.

Whether health indicators from Eurostat cross cutting topic: Quality of Life – Health are sufficient to assess the impact of a health care system on this aspect of the QoL?

For this purpose we compare health systems and QoL indicators (in the health sector) of Poland and Spain. Such comparison could be justified as follows. These are countries with a comparable area and a similar population. One can also say that both are *just out of the core of the EU*. Poland in the east and Spain to the south.

On the other hand, the societies and the socio-political systems of these countries are significantly different. In particular, from comprehensive analysis of the effectiveness of health care systems of the 29 OECD countries presented in the article [Joumard et al. 2010] it follows that they belong to different groups of countries of the six featured in this article as groups with similar health care systems. If it comes to democratization and European integration after World War II, Spain is ahead of Poland by almost two decades (democratization: 1975 versus 1989, accession to NATO:

1982 versus 1999, European integration: 1986 versus 2004). Similar "delay" could be observed in the level of GDP.

1. Ways to measure quality of life

Within studies on measuring QoL, two directions may be distinguished. The first one, termed "subjective well-being" (SWB) [Diener et al. 1999], is based on an individual's declaring their level of happiness, pleasure, self-fulfilment, etc. The second one, using the so-called objective measurements of QoL (OMQoL) [UNDP 1998, p. 119], relies on measurable social, economic and health indicators reflecting the extent to which human needs are or may be satisfied. Objective indicators are individual or aggregate (e.g. UN's Human Development Index – HDI).

Note, however, that the QoL concept is too general to be able to be precisely defined. Therefore proxy type HDI are often simply equated with the QoL. But in wealthier systems of indicators (Table 1) both objective and subjective measures are presented and complement themselves.

2. Indicators of quality of life

Countries and international organisations undertake a range of initiatives to develop methods to measure QoL. In Europe, almost every country has established its own formal system for measuring it. Since 2014, the Central Statistical Office of Poland (GUS) [GUS 2014, GUS 2015] has published yearly compilations of indicators that allow for assessing nine different areas of QoL. The indicators include both objective and subjective living conditions. The initiative by French President N. Sarkozy to set up the Commission on the Measurement of Economic Performance and Social Progress [Stiglitz et al. 2009] to prepare a report containing thirty recommendations for improvement of QoL measurements was an important step in developing research in this area.

In accordance with the decision by the European Statistical System Committee (ESSC), works were commenced in 2011 to establish a set of QoL indicators for the European Union countries. That set includes 9 dimensions of life, and the first Eurostat set of such indicators was published in 2013 [Eurostat 2013]. The QoL dimensions used by Eurostat and GUS comprise: material living conditions; productive or main activity; health; education; leisure and social interactions; economic and physical safety; governance and basic rights; natural and living environment; overall experience of life.

One Eurostat dimension of QoL is *health*. Table 1 shows *health indicators* developed following the Eurostat classification.

Table 1. QoL indicators in the health dimension according to the Eurostat classification

Topic/subtopic		**Indicator**
Outcomes	*Life expectancy*	Life expectancy at birth
	Morbidity & health status	Healthy life years
		Self-perceived health: - by sex, age and educational level - by sex, age and income quintile
		Self-reported mental health
		Psychological distress during the past 4 weeks
Determinants: healthy and unhealthy behaviours		Body Mass Index: - by sex, age and educational level - by sex, age and income quintile
		Daily smokers of cigarettes by sex, age and educational level
		Daily smokers of cigarettes by sex, age and income quintile
		Hazardous alcohol consumption
		Regular practice of physical activity
		Consumption of fruits and vegetables
Access to healthcare		Self-reported unmet needs for medical examination

Source: http://ec.europa.eu/eurostat/web/gdp-and-beyond/quality-of-life/data/health, accessed on:14.05.2015.

3. Characteristics of Polish and Spanish health systems

This section compares the characteristics of healthcare (HC) systems in Poland and Spain, with a particular focus on financial aspects of HC operation. The table below presents general characteristics of Polish and Spanish health systems. Subsequently, health expenditure is described as expenditure per capita, percentage of GDP, public (government) and private expenditure, and out-of-pocket payments.

Table 2 reports selected characteristics of Polish and Spanish health systems. Spain and Poland have adopted different models of their health sectors, which consequently vary in institutional structure, level of State involvement in the process of using medical services and scope of income redistribution [Suchecka 2010, pp. 46–52.].

Table 2. Selected characteristics of Polish and Spanish health care (HC) systems

Characteristic	Spain	Poland
HC model	Beveridge's model – national health service	Bismarck's model
Entities responsible for HC	HC is the responsibility of the State.	Health system is managed, financed, supervised and controlled by the National Health Fund (NFZ), the Ministry of Health and regional and local authorities.
Source of financing	The system is financed from taxes paid to the State's and regional and local authorities' budgets [Łuniewska 2014, p. 70].	Funds are collected from public health insurance contributions. This is the responsibility of the NFZ, the Ministry of Health and regional and local authorities.
Health security	Health security is guaranteed for all; general and broad health services are provided free of charge irrespective of material status, through providing citizens with access to the basic basket of services.	Patients have the right to freely choose service providers from among those who have signed relevant contracts. Following the amendment of the 2009 Act, the Ministry of Health defined baskets of publicly funded services (positive baskets).

Source: Own compilation based on [Suchecka 2010, pp. 46–52].

3.1. Health expenditure

In 1995–2009, health expenditure as a percentage of GDP increased by a relatively small amount in Poland (Table 3), though the structure and level of healthcare financing changed dramatically in that period. Total nominal health spending grew more than fivefold between 1995 and 2009 – from 18.5 billion PLN to 99.0 billion PLN [NFZ 2012, p. 81]. Since an increase in GDP was also noted in that period, total health expenditure as a percentage of GDP rose by only 1.7 percentage points, i.e. from 5.5% to 7.2%. As regards health expenditure per capita expressed in PPP, there was a three-and-a-half-fold increase from US $ 406 in 1995 to US $ 1369 in 2009. Examining the structure of public expenditure, it can be found that the public sector accounted for about 72% of expenditure. Private health expenditure consisted mostly of out-of-pocket payments (OOP), with small but growing expenditure on voluntary health insurance [NFZ 2012, p. 81].

From 2009 onwards, health spending as a percentage of GDP tended to decline – a decrease from 7.2% to 6.8% between 2009 and 2012. This means that, by the end of 2009, the GDP growth rate was higher than the increase in health expenditure [GUS 2014A].

In the period studied, i.e. 1995–2013, total health expenditure as a percentage of GDP increased by 21.8%. Public spending shrank and private expenditure went up by 4.5% and 12% respectively. Out-of-pocket payments fell by 15.9% (Table 3).

Table 3. Health expenditure in Poland in 1995–2013

	1995	2000	2005	2008	2009	2010	2011	2012	2013	growth (in %) (1995 = 100%)
Total health expenditure per capita (expressed in purchasing power parity of the US $)	406	584	856	1241	1369	1432	1495	1509	1551	282.02
Total health expenditure as % of GDP	5.5	5.5	6.2	6.9	7.2	7.0	6.9	6.8	6.7	21.82
Public (government) health expenditure as % of total health expenditure	72.9	70.0	69.3	71.8	71.6	71.2	70.3	69.2	69.6	-4.53
Private health expenditure as % of total health expenditure	27.1	30.0	30.6	28.2	28.2	28.3	29.2	30.3	30.4	12.18
Out-of-pocket (OOP) payments as % of total health expenditure	27.1	30.0	26.1	22.8	22.7	22.1	22.3	22.7	22.8	-15.87

Source: Own compilation based on data on: http://apps.who.int/gho/data/view.main.HEALTHEXPCAPPOL?lang=en, accessed on: 07.08.2015.

Table 4. Health expenditure in Spain in 1995–2013

	1995	2000	2005	2008	2009	2010	2011	2012	2013	growth (in %) (1995 = 100%)
Total health expenditure per capita (expressed in purchasing power parity of the US $)	1190	1548	2276	2952	3075	3026	3002	2925	2846	139.16
Total health expenditure as % of GDP	7.4	7.2	8.3	8.9	9.6	9.6	9.4	9.3	8.9	20.27
Public (government) health expenditure as % of total health expenditure	72.2	71.6	70.9	73.0	75.0	74.4	73.4	71.7	70.4	-2.49
Private health expenditure as % of total health expenditure	27.8	28.4	29.1	27.0	25.0	25.6	26.6	28.3	29.6	6.47
Out-of-pocket (OOP) payments as % of total health expenditure	23.5	23.6	22.1	20.3	18.6	19.9	20.2	21.8	22.8	-2.98

Source: Own compilation based on data on: http://apps.who.int/gho/data/view.main.HEALTHEXPRATIOESP?lang=en, accessed on: 15.08.2015.

In 1995–2009, health expenditure in Spain, both per capita and as a percentage of GDP, revealed an upward trend (Table 4.). The greatest share was covered by the public sector, and that percentage decreased steadily from 1995 to 2000, remaining above 70%. An opposite trend was observed for out-of-pocket payments as a share of total health expenditure – a decrease from 23.5% to 18.6%.

The above trend changed radically in 2009. According to official document *Advancement of the Economic and Financial Performance of Public Administrations 2013* [IGAE 2013, p. 87], public expenditure on healthcare fell by 13.6% in 2009–2013. In terms of GDP, this means a reduction of 0.7 percentage point in 2013 compared to 2009 [ibidem]. This may be explained by a decline in GDP of 2.8%. Official data sources allow for defining the impact of areas such as pharmaceuticals, staff or investment expenditure on the health system. In 2009–2013, total public spending on prescriptions decreased by 2934 million EUR (21.8%), resulting from a fall in the number of prescriptions of about 8% (74 million fewer prescriptions) and a reduction in the average price of a prescription of approximately 20%.

4. Health outcomes

The next step involved analysing selected QoL indicators directly linked to the health status of populations. Those were chosen based on the classification of QoL indicators for the European Union set out on the Eurostat website (Table 1.).

4.1. Life expectancy

The life expectancy (LE) indicator is the mean number of years that a newborn child can expect to live if subjected throughout his life to the current mortality conditions (age specific probabilities of dying).[1]

According to Ryć and Skrzypczak [2011], life expectancy is an indicator of the population health status that does not allow, however, for assessment of the quality of life. Its main limitation is that it is based on only one category of data, namely those related to mortality. Thus, characterisation of life and health of the population studied is limited. What is always observed is the difference in life expectancy between men and women in favour of women, which stems from the so-called "excess male mortality" [ibidem].

On the basis of Eurostat data, it may be concluded that life expectancy for males in 2004–2013 continued to rise in both Spain and Poland. In each analysed year, that figure is higher by about 6 years for Spain than for Poland. As regards average male life expectancy in the European Union, that figure is higher by about 5 years and lower by over 2 years compared to Poland and Spain respectively (Table 5). Life expectancy for females reveals a growing trend in 2004–2013 in both countries concerned. As in the case of male life expectancy, life expectancy for females is higher in Spain than in Poland. This difference is smaller for men, with an average of 4.5–5 years depending on the year.

1 http://ec.europa.eu/eurostat/web/products-datasets/-/tps00025, accessed on 25.08.2015.

In relation to the average life expectancy for females in the European Union, the figure is lower by about 2 years for Poland and higher by more than 2 years for Spain (Table 6).

Table 5. Life expectancy for males in Poland and Spain and in the European Union in 2004–2013

Country/Years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	growth in 2004–2013
Poland	70.6	70.8	70.9	71.0	71.3	71.6b	72.2	72.5	72.6	73.0	2.4
Spain	77.0	77.0	77.8	77.9	78.3	78.8	79.2	79.5	79.5	80.2	3.2
EU 28	75.2	75.4	75.8	76.0	76.3	76.6b	76.9	77.3b	77.4b	77.8	2.6
b – break in time series											

Source: http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tps00025&plugin=1, accessed on 25.08.2015.

Table 6. Life expectancy for females in Poland and Spain and in the European Union in 2004–2013

Country/Years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	growth in 2004–2013
Poland	79.2	79.3	79.7	79.8	80.0	80.1b	80.7	81.1	81.1	81.2	2.0
Spain	83.7	83.6	84.4	84.4	84.6	85.0	85.5	85.6	85.5	86.1	2.4
EU 28	81.5	81.5	82.0	82.2	82.3	82.6b	82.8	83.1b	83.1b	83.3	1.8
b – break in time series											

Source: http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tps00025&plugin=1, accessed on 25.08.2015.

4.2. Self-perceived health

Self-perceived health expresses subjective assessment by the respondent of his/her health. Indicators based on this concept can be used to evaluate the general health status, health inequalities and health care needs at the population level. Below there is an example of an operational definition used within the European Statistical System.

One question instrument assessing the general perceived health: "How is your health in general?" Possible answers include: Very good / Good / Fair / Bad / Very bad.

It is a standardised question recommended by the World Health Organisation (WHO). It is used in the European Health Interview Survey (EHIS) (HS1 variable) and EU statistics on income and living conditions (EU-SILC) (PH010 variable).[2]

2 Website: http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Self-perceived_health, accessed on: 03.09.2015.

In 2013, 73.8% of the Spanish population assessed their health as very good or good. This figure is higher by 15.3 percentage points than in Poland. As regards negative opinions, up to 14.3% of Poles and 8.4% of Spaniards evaluate their health as bad or very bad (the rest of populations perceive).

The EU-28 average of those satisfied with their health (67.8% of good and very good responses) is higher by 9.3 percentage points than in Poland and lower by 6 percentage points than in Spain.

5. Determinants: healthy and unhealthy behaviours

BMI[3] was chosen as an example of *determinants of healthy and unhealthy behaviours*.

Both in Poland and in Spain, the level of educational attainment and obesity are strongly correlated, i.e. the higher the educational attainment level, the lower the obesity rate (Table 7).

In 2008, there were 16.4% of people suffering from obesity in Poland. Spain was similar in this respect, with the rate of 15.7%. Similar figures were noted for Poland and Spain in populations with the lowest (0–2) and highest (5–6) levels of education: 21.3% and 21.1%, and 10.4% and 9.4% respectively. A significant difference can be seen for populations with upper secondary and post-secondary non-tertiary education (levels 3–4): 16.7% in Poland and 10.6% in Spain.

Table 7. Percentage of obese people (BMI over 30) in a given population by educational attainment level in selected EU countries in 2008

country	International Standard Classification of Education (ISCED97)			
	All education levels	Pre-primary, primary and lower secondary education (levels 0–2)	Upper secondary, post-secondary non-tertiary education (levels 3–4)	First and second stage of tertiary education (levels 5–6)
Spain	15.7	21.1	10.6	9.4
Poland	16.4	21.3	16.7	10.4

Source: hlth_ehis_de1, accessed on 26.08.2015.

3 BMI is accepted as the most useful indicator of obesity in adults if only weight and height data are available. BMI is calculated by dividing body weight (in kg) by squared height (in meters). BMI-based classifications use four categories: BMI lower than 18.5 – underweight, between 18.5 and 25 – normal weight, between 25 and 30 – overweight, higher than 30 – obesity. BMI is not calculated for children.

6. Access to healthcare

Above presented "healthy and unhealthy behaviours" (Sec. 5) are not directly related to or depend on the health care system (however, prophylaxis can make a difference). Also "health outcomes" (Sec. 4) are very weakly sensitive to short term changes of the health care system. What does matter for individual perception of the QoL is health care system availability.

Table 8. Percentage of population (above the age of 16) self-reporting unmet needs for medical examination for reasons related to the health care system in 2013

country	reasons related to the health care system			
	total	too expensive	too far	waiting list
Spain	0.8	0.6	0.1	0.1
Poland	8.8	3.6	0.4	4.8
EU 28	3.6	2.4	0.2	1.1

Source: http://ec.europa.eu/eurostat/statisticsexplained/index.php/Unmet_health_care_needs_statistics, accessed on 05.09.2015.

Table 9. Percentage of population (above the age of 16) self-reporting unmet needs for medical examination for reasons not related to the health care system in 2013

country	reasons unrelated to the health care system					
	total	lack of time	lack of information	fear	hope for a spontaneous recovery	other
Spain	5.9	1.9	0.1	0.4	2.6	1.0
Poland	5.2	1.8	0.1	0.8	1.7	0.6
EU 28	3.3	0.9	0.1	0.3	1.2	0.8

Source:http://ec.europa.eu/eurostat/statisticsexplained/index.php/Unmet_health_care_needs_statistics, accessed on 05.09.2015.

Table 10. Some indicators related to ease of access to the health care system

country	physicians per 1000 thousands inhabitants		hospital beds per 1000 inhabitants	
	2007	2012	2007	2012
Spain	365	369	3.3	3.0
Poland	219	221	6.4	6.5

Source: OECD (2016), "Health care resources", OECD Health Statistics (database). DOI: http://dx.doi.org/10.1787/data-00541-en, accessed on 11.04.2016.

Self reported unmet needs for medical examination are taken by Eurostat as an appropriate indicator. It is presented in the Table 8 (9) for reasons related (unrelated) to the health care system. We add also information about number of physicians per 1000 thousands of inhabitants and number of hospital beds per 1000 inhabitants (Table 10). From data presented in the last table, it appears that the number of doctors per capita did not changed significantly over time and remained nearly two times higher in Spain than in Poland. In turn, the number of hospital beds per capita is about two times higher in Poland than in Spain. This proves significantly different organization of the health sector in the two countries concerned.

Regarding *self-reported unmet needs for medical examination for reasons unrelated to health care system*, one can say that the situation is in both countries is similar, but much worse than the EU28 average (Table 9). The differences between Spain and Poland, however, are clearly visible in the Table 8. Presented there *self-reported unmet needs for medical examination for reasons related to health care system* are presented practically does not exist in Spain compared to the average of the EU 28. However, they are very high in Poland, especially when it comes to those due to waiting list.

This Eurostat information is available by age, gender, and either educational attainment level, or income quintile, or labour status, or degree of urbanisation. Unfortunately, no information is available about the relation of unmet needs to the needs in total. This makes it difficult e.g. distinguish the effect of inefficient health care system from the impact of differences arising from settled in a given society approach to health problems.

Summary and conclusions

Firstly, the Polish and Spanish health systems were characterised. Since 1998, the health system in Poland has been based on Bismarck's model. It was then that a compulsory health insurance scheme with its own insurance fund (currently the National Health Fund) was implemented. The Spanish health system is based on Beveridge's model where the State is responsible for the health of its citizens. It is financed from taxes paid to the State's and regional and local authorities' budgets. According to World Health Organisation data, from 2009, health expenditure as a percentage of GDP fell from 7.2% in 2009 to 6.7% in 2013 in Poland. That period saw a similar trend in Spain, where that figure dropped from 9.6% to 8.9% in 2009–2013. One of the main reasons for this was a reduction in public spending on prescriptions as a result of modifications made to pharmaceutical services in 2012. Nevertheless, it should be highlighted that, despite the changes adopted, Spanish health expenditure as a percentage of GDP reached a value higher by up to 2.1 percentage points compared to Poland in 2013. On top of that GDP per capita in PPS in Poland (in 2013) is only 3/4 of that of Spain.

The next sections assess selected health outcomes and health determinants.

Both countries witnessed an upward trend of life expectancy but Poland's figures are lower than the EU average by 5 years for men and 2 years for women, whereas higher by 2 years for Spain for both sexes.

As regards self-perceived health, nearly 3/4 of the Spanish population assessed their health as very good or good in 2013. This figure is higher by 15 percentage points than in Poland and by 6 percentage points than the EU average.

Finally, the correlation between obesity rate and educational attainment level was analysed as one of determinants of the level of health, concluding that a strong link exists between education and obesity both in Poland and in Spain. There is a difference in the obesity rate in the population with secondary education – 16.7% for Poland and 10.6% for Spain.

It can be argued that the level of health measured by life expectancy and self-perceived health is significantly higher in Spain than in Poland. Nonetheless, it is difficult to link this fact directly to the health system organisation or the level of health expenditure. Cultural factors may be important determinants, as evidenced, for example, by a much smaller obesity rate noted in the population of persons with secondary or post-secondary non-tertiary education.

In the last part of the article selected indicators related to access to medical services are presented, because it could be expected that with their use the impact of the health care system (including its financing) on perceived health aspect of the quality of life is able to be captured.

Firstly, it should be noted the number of doctors per capita in Spain is much higher than in Poland, whereas, in turn, much higher than in Spain is the number of hospital beds per capita. This shows significant structural differences in the health systems of these countries.

As far as the *self-reported unmet needs for medical examination* are concerned, their level is much higher in Poland than in Spain, particularly in the case of waiting list as a reason for dissatisfaction.

Unfortunately, the lack of information about the demand for medical services in both countries concerned prevents from drawing definitive conclusions. The assumption that this level is similar in both countries (the only attitude in the absence of information) can lead to the conclusion confounding effects with causes. Information on the similar topic (e.g. the average number of medical consultations in the last four weeks) can be found in Eurostat under theme Health (identifier: hlth), but these indicators are not included in the cross-cutting topic of Quality of Life – Health (qol_hlt).

Finally it should be emphasized that the apparent differences in indicators taken into consideration do not need to point to any superiority among considered systems. One can cite once again the report [Joumard et al. 2010], which states *inter alia* that there is no type of health care system that consistently produces better results in terms of cost effectiveness. Recommendation [ibidem] is the following. Instead of radically changing given system, it is better to improve it by adopting the most effective policies used in similar systems.

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Identity of a Polish Accountant – an Accounting Manager of the 21st Century

Abstract: The article describes who should be the modern accountant, especially during specific changes, which do not necessarily imply a guarantee of economic turnover quality. There are following questions in the article: How do you determine the identity of the modern accountants? Should they only be „artisans" automatically entering business operations? Should they have the qualities of competent managers in the face of a large variety of legal articles? Research questions were posed to achieve the objective of the article, which is to define the concept of identity of Polish accountants of the 21st century.
Key words: accountants, accounting managers, identity

Introduction

What would the economic turnover be without professionally, fairly and honestly working accountants? Could we then talk about business security, security of the state and even the world? These questions, in spite of appearances, are not characterized by excessive naivety. They concern possible, truly realistic scenarios that may arise in the economic space.From the point of view of the business safety, the quality of the staff involved in accounting is very important. Its significance increases especially at a time when the accounting profession (unfortunately) is slowly being deprecia-

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ted, which is reflected for example by the deregulation of the accounting profession [Act of 9 May 2014 on facilitation of access..., pos. 768].

This process, or rather practice, took place in 2014 – the second decade of the twenty-first century, after 26 years since the initiation of free market reforms in Poland. These dates are quoted intentionally, since in recent years, despite many positive changes that have taken place in the global world, a lot of pathology has accumulated in social, economic or political life.

Modern times create a lot of opportunities to obtain or purchase material goods, and thus – possess, and when the opportunity arises – fast (sometimes even uncontrolled) development in various areas of life. Unfortunately, the present time also raises many temptations, related for example to uncompromising, sometimes even unfair money earning, rapid promotions, etc. These times create many opportunities for achieving relative benefits that serve individuals, and not necessarily serve the public.

All that (though very briefly sketched) shows that there occurs a slow move away from previously existing norms, principles, values, or ethics. There are somewhat not enough authorities, moral standards and masters. In the postmodern world, lots of elements shaping our life become relative. The behaviours shown above are transferring to almost every sphere of human activity. So it happens with the area of the economy, finance, economics, accounting, social and family life. In case of the accounting system it manifests in all sorts of pathological behaviours that violate legal articles including the balance and the tax ones. The results of such actions are (unfortunately) scandals involving persons responsible for finances and accounting in companies.

In the face of these facts, it becomes legitimate to ask the question about the identity of modern people, and going beyond this line: entrepreneurs, managers, accountants, etc. By narrowing the area of interest to the environment of professional accountants one may ask: What role should they play in the economy? Whom and what should they serve? Can and should the accounting managers be told to be reliable, ethical and professional accountants in the field of accounting? What can accounting draw from management science which defines and describes the profile and silhouette managers? These are the specific research questions that were posed in the article.

Research questions posed to achieve the objective of the article, which is to define the concept of identity of Polish accountants of the XXI century defined by the author as the accounting managers. Accounting managers can be treated as a new concept in the science of accounting, which was presented in the article. The paper analyzes the literature on management, accounting, and also trade publications related to the accounting profession.

1. Identity from a definitional perspective

Can the issue of identity be determined in a simple and understandable way? What comes to a reader's mind in the first place can be described as typical perception of a particular person or even a group of people on account of the specific, distinct and unique characteristics concerning the appearance, the way of thinking, mentality, behaviour etc., which do not appear in other human communities. So this term has perceptible dimension in people's ordinary, daily life, but like the entire surrounding reality, it also takes on the scientific form.

According to the online PWN dictionary, identity is: 1) sameness, 2) in relation to a single man: self-awareness, 3) the facts, features, personal data allowing to identify a person, 4) in relation to the community: awareness of the common features and a sense of unity, 5) equality of two expressions, which holds for all values of variables occurring in it [sjp.pwn.pl/szukaj/Tożsamość.html].

According to M. Golka the term „identity" is derived from the Latin word idem meaning identity and continuity. This concept began to be used in widespread use not until the mid-twentieth century. People of merit in this regard are among others: W. James –an American philosopher, psychologist and psychophysiologist, as well as E.H. Erikson –an American psychologist, psychoanalyst and psychologist of human development. The British sociologist A. Giddens observed in turn, that the issue of identity is one of the fundamental human existential problems [Golka 2010].

In sociological sciences the concept of identity, although extremely popular, arouses a lot of controversy today. Identity is a very ambiguous category, defined according to the scientific mainstream or subject of study. In the general sense, it is defined as showing identification to other individuals and to oneself. This concerns identifying oneself with some elements of social reality, as well as enabling others to determine the object by certain features, particularly characteristic for it [Olechnicki, Załęcki 1997, p. 228].

Sociology makes a distinction between the identity of an individual, which is understood as a set of ideas, judgments, opinions and beliefs of a social individual about themselves and the so called social identity [*Encyclopedia of Sociology* 2002, p. 252].

The latter is described as the identity of an individual, of a social group or collectivity, through which and thanks to which it locates itself in a particular area of social reality, or is itself embedded in this reality by an external observer, which is another individual, a group, or a collectivity [Olechnicki, Załęcki 1997, p. 228].

According to online Wikipedia, identity, as previously cited M. Golka considers, is a vision of self that a human being has, and concerning: the characteristics of appearance, psyche and behaviour from the point of view of their individuality and uniqueness in other people.

Summing up the above subject, it is stated that the concept of identity occurs in the context of two important human relationships including: attitudes to themselves and relation to other people, and so among others to both culture and tradition. This issue points to a particular type of dependence which connects the subject with itself, that is – on the one hand, with its own psycho-physical and moral condition, on the other hand – the relationship with other people. This compound is based on a more or less conscious attitudes towards these values, characteristic for both the subject and other people, communities, groups, cultures, etc.

2. An accountant as an accounting manager

The title of this publication refers to the identity of modern accountants as the accounting managers. How then one can determine the identity of accountants of XXI century, especially at a time when the profession can be performed in the business space virtually with no special requirements? That is why this question should be aimed at the following direction: Who is an accountant, or whom should they be in a light of the requirements, principles, trends created by the modern world? Who, in the face of these questions, are accounting managers, then?

An accountant – in the colloquial sense of the word – is the person who (trivially saying) does the company accounts. It is obviously commonly held, since in a professional language we would say that bookkeeping is only a part of the broad system, which is accounting. Accounting is undoubtedly one of the most important elements responsible for the effective functioning of business organizations. In a complex sense, an accounting system is responsible for collecting, processing and presenting economic information that enables management of enterprises. According to A. Kamela-Sowińska [2006, p. 135] accounting is a component of the culture and as a specific kind of the language, shows all conditions that occur in it.

According to the doyen of Polish accounting school – S. Skrzywan it is a special kind of records showing economic activity and the financial situation of a household unit. It has a clearly defined subject and an object, and it is a closed system of continuous records (at the time). It is a specific system of methods, rules and principles of recognition, grouping, presentation and interpretation of numerical data and object matter of the record expressed in money [Skrzywan 1971, p. 13–14].

Let us return to the title of the subsection, which leads to a question about the meaning of the term – an accounting manager. From a formal point of view, this kind of term does not exist in the legal space. Therefore, it is rather an area of scientific and academic inquiries. How can a modern accounting manager be defined, then? Is it just an accountant, who limits their work to schematic tax and accounting records only?

By analyzing this term, even if only briefly, it can be concluded that the accounting manager is the person who manages the broadly defined accounting system. Referring to the concept of „management" it is stated that it is an action that lies in the planning, organizing, motivating and controlling through other people for achieving the specific objectives of the organization [Korzeniowski 2011, p. 13].

In the third edition of the literary position entitled "Management" R.W. Griffin [1990, p. 6] defines management in much the same way, as a set of actions directed to the resources of the organization, carried out with the intention of achieving its objectives in an efficient manner.It appears that one can manage people who have information and money, so they change the material world, as well as the world of human values. This means all the possible resources are managed by managing people. The terms such as „product management", „project management", „costs management", „financial management", „assets management", „management of changes" are shorts for managing people in order to the rational and effective planning the activities in a given period of time, proper investment of financial capital, costs and revenues analysis of the business [Šmid 2000, pp. 413–415].

According to P. Drucker [2002, p. 29] management concerns specific actions and the results achieved, for example financial achievements, are their test. According to the thinker it concerns primarily (which has already been emphasized above) people, their values, development, which gives this system the characteristics of humanism.

Therefore, management is undoubtedly closely related to moral issues – the nature of a human being, the good and evil.

Turning to the concept of „manager" it should be noted that by the encyclopaedic definition, he or she is a person managing the company or its marked off area [Pomykało1995, p. 53]. The manager is the subject that professionally deals with the management of the organization or just a part of it, using expertise (professional knowledge), as well as management methods and techniques. According to Z. Dowgiałło [1999, p. 89] a director-manager is the person that makes decisions (as in the management process is not an easy thing) and delineating targets for using market opportunities, ensuring the success of the company, improving its profitability and competitiveness. The manager responsible for directing the activities leading to the achievement of the objectives of the organization, has a vocation to the conscious and continuous development of the organization [Gilbert, Freeman, Stoner 2001, p. 20].

While reading carefully the above-mentioned definitions it can be concluded that the accounting manager is a professional and honest accountant, such a person in the company, a clerk in a public institution, who deals with accounting understood in a systemic way. Let the thought by L. Sułkowski [2005, p. 35], who states that management science is a good illustration of the thesis of the process of deepening specialization, be the confirmation of this opinion. That is why the contemporary accountant cannot be the imitator of established technical procedures only. He or she cannot be the so called „artisan". Part of his or her competence will be financial management skills, interpretation of accounting law, tax law, as well as an intention to conduct according to the norms of professional ethics applicable in the environment. A person with these competencies should be able to influence and adequately motivate their colleagues, subordinates, and superiors.

3. Modern accounting managers

An accountant of the XXI century should be a competent specialist, an expert in the field of accounting. There is no doubt that he or she should give a guarantee of professional and ethical financial statements. Let us consider what kind of people, with what kind of qualifications, and performing what kind of actions, from the point of view of the applicable law, could be described as accounting managers.

Using a detailed analysis of qualifications in accountancy, made in the monograph edited by W. Baran [2014, p. 314–323], presenting the qualifications required to keep accounts on the Polish territory, taking into account the requirements imposed by international corporations, operating economically in the area of our country, the following can be said:

Certified auditor

This profession is a kind of coping stone of the work related to accounting. A statutory auditor is a specialist in the field of accounting, finances, economics, business law, management and organization. Having a title of a statutory auditor is a great prestige. This title is one of the most respected certifications in the field of accounting and finance in Poland. This is undoubtedly the profession of public trust. The superior auditor's duties should be statutory control of the financial statements, or the effects of accountants` work. In order to get the qualifications in this profession, one must pass 10 written exams and an oral diploma examination. There is the possibility of exemption from 5 exams after meeting certain criteria. An annual practice in accounting and two years of applications required. One must take the oath before the president of the National Council of Certified Auditors (NCCA) or other authorized member of NCCA and submit an application for an entry to the register of certified auditors. The above qualifications are required for the following posts: a certified auditor in an auditing company conducting independent activity, the financial director in enterprises, an accountant in units of public finance, financial controller, a manager of internal and external audit.

Chartered accountant

It is a person of proven and updated knowledge and skills in organizing business and budgetary units accounting, bookkeeping and preparation of financial statements according to Polish and international accounting standards, and also in financial management, including tax matters of the unit. Title chartered accountant promoted by the Association of Accountants in Poland could be obtained by a person who:

Graduated from higher education in Poland or foreign higher studies recognized in Poland as equivalent. The one, who has a good command of Polish in speech and writing and had a three-year practice in the field of accounting, including at least two years in an independent position or has a degree obtained in Poland or abroad, which grants access to higher education and has a good command of Polish in speech and writing and had a six-year practice in the field of accounting, including at least three years in an independent position.

- Uses public rights in full and has full legal capacity.
- Has an impeccable reputation, and in particular has not been sentenced with effective judgement for an intentional offense: against property or against economic turnover, against the activities of state institutions and local government, against the credibility of documents or fiscal offense.
- Is a member of the Association of Accountants in Poland.
- Passed exams for a chartered accountant.
- Made a pledge.

Tax advisor

It is a profession of public trust. Having a title of a tax adviser can be used in the following areas: running one's own business, working in consulting companies or at the post of the chief accountant. Candidates who successfully passed the exam for the tax advisor, serves a two-year apprenticeship in the following order: in the tax office (2 months), treasury office (2 months), tax inspection office (2 months) and at the tax advisor or in the tax advice company (18 months). Higher education is required.

CF (Corporate Finance), ACCA (Association of Chartered Certified Accountants)

CF permissions are granted by the Institute of Chartered Accountants in England and Wales – an organization of accountants, experts from around the world, specializing in the field of investment advisory services and capital markets. Posts that take into account the qualifications of CF are: a business risk analyst, a business development manager, a corporate centre director, a financial controller and the financial director. To obtain the qualifications 4 exams in the field of corporate finance in English are required. A 3-years of experience in the area of corporate finance and a documented employment in the area of corporate finance are needed at the moment of applying for CF qualifications.

Association of Chartered Certified Accountants is an organization of over 330 thousand of members and students from over 170 countries. These qualifications are directed to people who are only going to get high qualifications in the field of accounting. At the beginning no knowledge or experience in this area is required. The following posts with ACCA qualifications can be listed: the financial director, the financial controller, the chief accountant, the process manager in such centres as: Business Process Offshoring and Student Service Centrum, the manager in an inside and outside audit, the supervisor.

4. Perfect or professional accounting manager?

Analysis of the previous deliberations induce to the following reflection: an accountant is a specialist who, in a company, does accounting in its broadest sense. He or she is responsible for preparing documentation concerning the rules of bookkeeping policy of an economic subject (an institution), and apart from that: keeps a record of economic events on the basis of accounting documents, keeps the accounts and sets and through the inventory checks the actual condition of assets and liabilities, makes their valuation, determines the profit or loss, in other words examines the effects of economic activity. This person also collects and stores accounting evidence, prepares financial reports, cooperates with the chartered auditor, and also has a unit's company account on his or her disposal.

It can be said that an accountant has great authority in the enterprise. People place their trust in him or her, after all he or she is the one who knows almost everything about the company where he/she works.

Because of such features accountants very often have to establish closer relations with the management, they often become the so called "right hand of their superiors". In many enterprises, depending on the nature and the size of the business, the position of the chief accountant is created. In some of them, it is combined with the post of the financial director or the financial controller, who makes a financial audit, checks the correctness and reliability of basic indicators presented in the financial reports.

The post of the financial director or the chief accountant is most often understood in terms of managerial functions. The chief accountant is the most often "the first counsellor" of the board on economic matters. His or her competence, knowledge of the market and the industry in which the unit operates can certainly turn into the success or failure of the company. All that often makes him or her a target of the pressure of the board, which attempts to convince them to its financial targets, solutions and ideas of the business in the interests of the company. Such activities may be consistent with applicable law, but may not always be consistent with the principles of professional ethics.

Therefore it can be said that the chief accountant is, through their knowledge, responsibilities and rights, the so-called object of "expectations" of the board, which thanks to them would like not only to pursue, but also improve the company's financial results, often even avoid the revenue office and plan the assumed earlier financial investment plan [Żuraw 2011a, pp. 514–515].

It can be concluded then, that being a professional accountant is a very difficult task. An accountant as the accounting manager is somewhat dependent on their superiors. Such an accountant is fully aware that several other candidates, who can make an offer complete loyalty and devotion to the manager of the unit, are waiting for his/her position. Nowadays, such an attitude is most expected.

Literature on accounting, particularly ethics in accounting devotes much attention to the attitudes of accountants who need to adhere to certain standards at work. The Code of Professional Ethics in Accounting [2012], which sets out certain ways of conduct for persons engaged in accounting has been in effect since 2007. The Code proposes ethical approach to the profession. This approach is often referred to as idealistic. The malicious say that idealism in this profession does not exist. According to them life, that writes its own scripts, eliminates idealism from private and professional life.

Is it possible to agree with such an assumption? Is the rejection of ethics and desire for an honest and fair approach to private and professional life is not too far-reaching simplification? After all, the pursuit of the ideal state is the process of acquiring the level of professionalism. You do not have to be a perfect man, but you could want to become one. This is undoubtedly a direct path to professionalism.

The guidelines of the Code of Professional Ethics in Accounting are the result of the requirements under accounting (balance) law. What is connected with these requirements is the occurrence of risk and uncertainty, the assessment of which by the accounting managers is difficult and opens the area of "bad accounting practices".

The introductory part of the Code of Professional Ethics in Accounting it is clearly emphasized that it makes a set of guidelines of everyday professional conduct, which are to serve all those who have decided to tie their future to the profession in the field of accounting. The idea of it is also to inform the world of economy about the fact that the profession related to accounting has developed specific rules providing solid, responsible, objective and fair way of doing the work.

The Code represents 8 rules of conduct. Out of the described ethical standards it results that accuracy and honesty of the person in charge of accounting means adherence to ethical professional standards. Norms of accountants` conduct are associated with the desire to fulfil the overriding principles of accounting (which are reflected in the law) with particular emphasis on the principle of an honest and accurate picture. It is also worth mentioning that presented principles of ethics in accounting are also guidelines for the management of the enterprise (institution), what attitude can they expect from his subordinate (accountant) [Żuraw 2011, p. 87].

Accounting manager will never be a perfect employee. Why? Because he/she is only a human being who has the right to make mistakes. However, he/she may be professional. Why? Since a professional is a person having the right motivation to be not necessarily very good, but good in his/her professional activity.

Ending

Persons professionally dealing with accounting as well as those who are thinking of doing this job are wondering what characterizes the profession of an accountant, what is its specificity, how this job used to be and how it looks like today. In modern times, these questions oscillate around fundamental matters, namely: Who is the Polish accountant of the XXI century? What are the prospects of this profession? Does this person really have an impact on the functioning form of companies? What is the identity of the modern accountant, then?

To sum up the content of the article, it should be said that modern accountants are not only those that deal with records of business transactions. They are not the only people recording economic events in companies and the ones that help in making economic decisions. This occupation has been clearly evolving. The nature of its execution has been changing. Many years ago an accountant used to be the so called "craftsman". His job was to save the records of everything that happened in the company. He did not hold managerial functions, because there was no such need. Management was left to the owners, heads of enterprises, business organizations and institutions. The very name "accountant" derives from the term "accounting", that is recording the past. We should note, however, that accounting is a much broader concept than booking.

Accounting is a system that in its structure includes among others: booking, financial reporting, cost accounting, financial planning of the companies. Looking back helps to understand how the accounting profession should look like in the twenty-first century. History shows us what it looked like back then, when no legal regulations applied, there were no professional business organizations, and most accounting activities were simple settlements mainly related to commercial transactions.

Looking at the episodes in history we say that even in thirteenth-century Italy, where the origins of accounting must be traced, entrepreneurs ran their own business books themselves. In the following centuries accountants were already needed for this purpose. It is commonly said that the accountants and lawyers are the oldest occupational groups known. Accounting and law were practiced jointly by scribes – which means writers. The roots of accounting profession date back to the industrial revolution in England, when its first representatives appeared. But it was a long time before this profession has grown, although no one can say that in modern times it reached full maturity. Its specificity requires permanent adaptation to the changing environmental conditions [Żuraw 2012, pp. 175–176].

Accountants who work in the second decade of the twenty-first century have to deal with various problems. These are not only accounting or tax problems. They are often consultants, business consultants, board members. Contemporary accountants are professional economists. In principle they should be the people who, colloquially speaking, feel the company intuitively. Modern accountant must be able to offer the company the path of development. The owners or employees of accounting offices are such advisors currently. They are advisors of modern entrepreneurs who entrust their accounts to professional advisers. The owners of accounting offices or people employed there are referred to as accountants. This is a very traditional approach, which has little in common with the tasks that accounting offices perform.

In *Encyclopaedia of management* author [Penc 2008, p. 1156] says that every organization leads an extensive, diverse activity requiring combination of economic reason and the criteria of praxeological, ethical, and humanist nature towards its environment. This activity must be appropriately organized and coordinated, and its development is controlled and stimulated in such a way as to be able to reconcile the reasonable demands of economic calculus with ethical and ecological sensitivity of the society. Analyzing the words of the author it can be said that this ethical sensitivity, identifying with the applicable law, professional culture, and factual (professional) professionalism prove the identity of contemporary accounting managers.

The concept of the identity of Polish accountants was presented in the article. It is based on a long-lived tradition, established principles of the profession and the professional ethos. Polish accountants know their professional value, and this is related to the degree of responsibility for duties performed. This work is difficult, sometimes underestimated by the superiors. Accountants are often subjected to pressure, which is oriented towards the performance of functions that are not always consistent with applicable law. These are often issues of moral dilemmas difficult to answer in a rational way.

Status of an accounting manager, the person responsible for the economic system in the company and not just a part of it, allows to create greater legal protection for the profession, increase the degree of autonomy, and thus increase its prestige.

This is of course a voice in the discussion. One can disagree with such a proposal, one can argue with it, but it is worth discussing. The proposal of constituting the term "accounting manager" is the result of a multithreaded reflection. It is not just about changing the name of the profession or function performed in the company.

The case concerns a change of mentality about accountants who have to carry out limited operations, mainly registration ones, and who must strictly subordinate to their superiors. Accounting managers are autonomous economists in enterprises whose voice in important matters of organizational units should be decisive. They should not be the only specialists in accounting, but they should be people with managerial competence. These competencies should be very important.

The author not necessarily invites to evaluate the presented proposal, but rather to discuss it in a constructive way.

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