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Financial aspects of management

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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 2014.

This scientific book is unique due to the fact that he is full English – language release in the "Entrepreneurship and Management" series.

University of Social Sciences' publishing house is planning 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 (8 points according to the list B of academic journals of the Ministry of Science and Higher Education as of 31.12.2013).

The prestige of this issue improved the fact that all articles contained will be included in a global resource base of scientific publications, Walter De Gruyter, GMBH.

It is the third largest in the world online database, which has in its resources researches and analyzes of worldwide scientists that are available on the website: www.degruyter.com.

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 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 the financial aspects, associated with it. It is difficult, therefore, to imagine the management of a household budget, enterprise, institution or even the state, without considering financial aspects of management.

For this reason, interest in finance, both theoreticians and people constantly facing financial issues in their professional work is still up to date and is the inspiration for the exchange of experiences, the presentation of research results and proposing the solutions' applications to improve management decision – making. One of the methods to attain this goal are scientific publications.

The current issue of the "Entrepreneurship and Management", entitled "Financial aspects of management" contains both theoretical considerations and practical analysis is based on the assumption that every managerial decision has got a financial dimension.

The issue contains 12 articles representing following thematic areas:

- analysis of the financial situation of enterprises and financial institutions,
- the use of accounting tools in management in companies,
- public funds management,
- the consequences of the financial crisis.

The analysis of the articles shows that finance can be considered depending on the place where there are or object to which they relate. Looking at finances form 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 economical 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 economical decisions.

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

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

It means that articles are characterized by appropriate level of scientific maturity and depth of the research and are 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 want to thank to the reviewers, whose valuable comments in the process of reviewing contributed a lot to give the definitive form of this issue.

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Paweł Trippner

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The post-crisis strategies of exchange banks in Poland in the context of their operating effectiveness

Abstract: The global financial crisis changed the customers' approach to the banking sector. Nowadays, banks are often perceived not as public trust institutions, but enterprises operating with a huge risk on a highly competitive market and set on a short-term profit. Such an approach and the financial results of the global financial crisis influence the banking sector in a direct and indirect way. As a result, banks in the post-crisis period had to adopt such operating strategies, which allowed them to rebuild the trust and successfully and effectively function on the financial service market. The aim of the article is the analysis of the management strategy adopted by banks and the evaluation of their effectiveness in the post-crisis period. The author presents a thesis that the change in the strategies of managing a bank after the crisis in 2008 resulted in limiting the risk and increasing the effectiveness of bank operating. In order to verify the thesis, the available materials on the strategies adopted by the exchange banks were compared and their effectiveness in the years 2009-2012 was analyzed.
Key-words: banking sector, bank's strategy.

Banking sector after the financial crisis

The investment bank, Lehman Brothers, went busted five years ago. The date of its collapse, 15th September 2008, became a symbolic beginning of the global financial crisis, the result of which was the global economic crisis. Since then the image of the world's banking has significantly changed. Five years ago the world was dominated by European and American banks. In terms of fund, HSBC, Citigroup or Royal bank of Scotland were the biggest. Nowadays, the Chinese ICBC is the greatest bank, followed by American giants JP Morgan Chase and Bank of America. ["The Banker" 2013]. In the EU banking sector, due to the great engagement of the banks from highly-developed EU countries in toxic securitized papers and financing the debt of the peripheral countries of the eurozone, banks incurred a great loss and their banking sectors found themselves deep in a crisis. Among the economies creating the Eurozone one can enumerate two groups of countries which were distressed

the most by the disorders caused by the financial markets crisis. The first group includes the economies where before the crisis the number of banks grew on the real estate markets (mainly Spain, Ireland, France). On the other hand, the second group includes the economies which were characterized by a great measure of dependence between the growth and the external demand (mainly Germany). [NBP report 2009, p. 9]

Analyzing the influence of the crisis phenomena on the Polish banking sector we can observe a few factors determining its condition after the global financial crisis. One of the factors are the macroeconomic phenomena. The economic recession among the leading world economies, at the same time being the major Polish trade partners, caused the reduction of GDP and the increase of unemployment. As a result of this, the entrepreneurs limited their investing processes and rationalized expenses. It had a vital influence on the quality of the credit portfolio of both individual and institutional customers. Another important factor influencing the banking sector was the trust on the interbank market and the trust of customers to the financial sector blamed for causing the crisis. The lack of trust had an impact on the interferences in the functioning of the interbank market. Banks narrowed down their credit limits causing the rapid drop of fluctuation in the sector. The situation was heightened by the bank customers' uncertainty especially towards the financial institutions with the majority of foreign equity. The threat of transferring the financial problems of the original companies on their branch offices in the countries hosting the equity was real and noticed by the customers who partially withdrew their financial contribution. The origin of the equity was another factor influencing the Polish banking sector. Under the conditions of the global financial crisis, the banks with the majority of Polish equity have a greater tendency to finance the home economy. It constitutes a specific manifestation of the phenomenon known on the financial markets as *home bias*. The speed of the domestic economic growth in the analyzed period slowed down visibly, and the essential factor that could contribute to this was a radical reduction of loans given by the banks with foreign equity. The contrary behaviour of the domestic banks redounded to the retaining of the economic growth and reducing the negative economic effects of the global financial crisis in Poland. First of all, the offering of loans created by the domestic banks ensured such financing of the home economy which allowed keeping a positive pace of changes in GDP [Włodarczyk 2012, p. 148].

In some countries, particularly in emerging markets, the foreign-owned bank shares in local activity grew to dominate shares by domestically-owned banks. The volume of credit issuance originating from foreign-owned banks within local markets also grew rapidly, although not homogeneously, across countries [Goldberg 2013, p. 5].

The Polish banking sector turned out to be resistant to both the American crisis as well as the debt crisis in the eurozone. The domestic banking operates according to the traditional model of banking mainly based on the deposit and credit activity. The level of financial leverage is relatively low in comparison to the banks of the developed countries. [Lepczyński, Penczar 2012, p. 407].

Countries which depended more heavily on resources from parent banks going into the crisis (i.e., a higher ratio) saw a greater contraction in their total foreign funding during the crisis [Cerutti, Claessens, McGuire 2012, p. 12].

The good condition and financial effectiveness of the banking sector in Poland after the global financial crisis is well-known. It is characterized by a high solvency ratio, low operating costs and a high return on equity. Changing and deteriorating conditions of business in the time of crisis and shortly after it did not influence all the banks to the same extent. Among other things, it results from the fact that the underlying most modern studies of the impact of financial development and banking markets on economic growth is an assumption that each country consists of a single national banking market. That assumption may be reasonable for countries whose banking markets are dominated by a few large banks with national branching networks, but probably is not reasonable for countries with geographically segmented banking systems [Mitchener, Wheelock 2010, p. 20]. In order to verify the thesis, the analysis of the operating effectiveness of all the banks listed in the Stock Exchange Market in Warsaw were enumerated. Fourteen exchange banks constituted 67% of assets of the banking sector in 2009 and 2012 (Table 1). In terms of assets the biggest are PKO Bank Polski and Pekao S.A., the smallest Alior Bank and BOŚ. It ought to be mentioned that at the end of 2012 the number of commercial banks was 45, cooperative 572 and credit institutions 25.

Table 1. Total assets of the banking sector and exchange banks in the year 2009 and 2012

Banks	2009	2012
PKO BP	156	193
Pekao	131	151
BRE BANK	81	102
ING BANK SLASKI	60	78
BZ WBK	52	60
GETIN NOBLE BANK	33	59
BANK MILLENNIUM	44	53
Bank Handlowy	36	44
BGŻ	25	37
BPH	34	34
Nordea Bank Polska	20	33
ALIOR BANK	6	21
BNP Paribas	20	21
BOŚ	12	17
Other banks	349	449
BANKING SECTOR	**1 060**	**1 353**

Source: own case study basing on the data from Polish Financial Supervision Authority and banks' financial reports.

Analyzing the net financial result of the banking sector (Table 2), it is seen that the ratio of the exchange banks' participation in the result of the whole sector are even more visible and amount to 85,6% in the year 2009 and 82,3% in the year 2012. The result of PKO Bank Polski only in the result of the sector was 24,2%.

Table 2. The net financial result of the banking sector and the exchange banks in the years 2009 and 2012

Banks	2009	2012
PKO BP	2 305	3 749
Pekao	2 421	2 956
BRE BANK	129	1 203
ING BANK SLASKI	582	832
BZ WBK	986	1 434
GETIN NOBLE BANK	437	371
BANK MILLENNIUM	84	472
Bank Handlowy	525	970
BGŻ	101	130
BPH	56	261
Nordea Bank Polska	145	151
ALIOR BANK	-271	172
BNP Paribas	-429	31
BOŚ	14	37
Other banks	1 192	2 752
BANKING SECTOR	**8 278**	**15 521**

Source: own case study basing on the data from Polish Financial Supervision Authority and banks' financial reports.

Similarly huge scale in the proportions is represented by the analysed banks in terms of employing the workers in the sector (Table 3). Fourteen out of 643 banks in the year 2009 were the employers of 63% of the workers of the sector. In 2012 they employed 63,4% of the workers of the sector. Despite the decrease in employment in the analyzed period, PKO BP is still the biggest employer in the sector and it employs 31 100 people in 2009 and 28 600 in 2012.

Table 3. Employment in the banking sector and exchange banks in the years 2009 and 2012

Banks	2009	2012
PKO BP	31,1	28,6
Pekao	20,9	19,8
BRE BANK	5,6	6,1
ING BANK SLASKI	8,1	8,7
BZ WBK	8,8	8,3
GETIN NOBLE BANK	3,0	6,4
BANK MILLENNIUM	5,9	6,0
Bank Handlowy	5,2	4,8
BGŻ	5,0	5,6
BPH	7,6	5,6
Nordea Bank Polska	1,9	2,0
ALIOR BANK	2,3	4,9
BNP Paribas	2,7	2,8
BOŚ	1,7	1,7
Other banks	65	64
BANKING SECTOR	**175,0**	**175,1**

Source: own case study basing on the data from Polish Financial Supervision Authority and banks' financial reports.

The banks chosen for analysis in this article constitute a highly representative specimen, which enables a reliable verification of the presented thesis. It can be assumed that macroeconomic factor and the crisis influencing the banks differently, had an impact on the whole banking sector. The functioning strategies adopted after the crisis by the banks concentrated on different elements. Referring to the analysed fourteen strategies one may enumerate three blocks of strategic actions: strategic/financial leverages, the sphere of bank value and financial effects.

Strategic leverages

Milind Lele came to a conclusion that certain enterprises differ when it comes to flexibility of operating in five dimensions: the target market, the product, the distribution place, the promotion and the price. The enterprises which render the highest profitability are named a strategic leverage [Lele 1991, p. 358]. In the case of the exchange banks' strategy it is vital to assess by them the expected operating effects in the above-mentioned dimensions. Analyzing the banks' strategies after the crisis in the area of strategic leverages (Table 4), we can observe certain repeated elements: client, workers, local society and technology.

In banks' strategic leverages the clients is mentioned in several contexts: customer's satisfaction, taking care of the client or the relationship with customers. In all the cases, the customer is in the centre of attention. Banks offer products shaped to the customers' needs, communicates with them in a clear way, but first of all, listens to them. Taking care of the customers' business is a supreme principle of operation. Banks want to be a „first-choice bank" for them. They empower their trust by the constant increase in the quality of services offered, clearness of operation, respect in mutual relations, protection of the privacy of information. They use the full value potential of the biggest base of current customers by an offer of products which is matched to the segments' needs. Bank Zachodni WBK S.A. stands out on the market with the fact of possessing the Customer's Spokesman. It acts as an appealing institution and participates in the creation of the standards of customer service by the realization of the following tasks: setting the standards and rules regarding receiving and handling complaints, supporting the bank employers in the area of especially difficult complaints, recurrent results of the complaint analysis presented to the bank managers, making arrangements aiming at eliminating the reasons for customer's dissatisfaction, co-operation with the Bank Arbitrator operating at the Polish Banks Association.

In the strategies described, banks create for their employees a friendly and safe workplace enabling the employees on any steppingstone to keep the balance between work and personal life. The aim of banks is building a culture based on trust, responsibility for the given tasks and skillfully giving the feedback. It is strengthening the organizational culture, basing on common values and human resources, oriented on cooperation, engagement and skills' development. Bank invests in a constant development of their workers by creating the possibility of education or the access to various educational forms. The key educational activities concentrate on trainings and introducing the culture of feedback among workers and managerial cadre. The bank supports building the long-term career in the organization, giving the workers, apart from various forms of access to knowledge and competence development, also the possibility of promotion. Some strategies also refer to the incentive systems. In banks there function incentive and bonus systems, being a connection of three elements: targets – referring to the priorities resulting from bank strategies and financial plans, results – meaning the effects of bank workers' work and the amount of bonus.

Local society seen in the strategic leverages is based on the engagement towards the society. It can be noticed in the actions for a balanced development through environment protection and also in supporting culture and socially important events. Banks act for education and the development of enterprises, eg. among secondary school students. Another interesting example of the cooperation with the local society is civic responsibility – it means help in combating social exclusions and promoting education and culture. Bank is actively present in the society, taking the role that falls outside the typical obligations: special support for neighbourhoods and areas in a bad socio-economic condition, supporting the charities and safeguard job establishments.

Nowadays, technology is one of the major strategic leverages of financial institutions. In spite of the fact that not all banks placed it in their publicly presented strategies, it is certain that the development of technology and modern communication with customers is one of the basic challenges the banks are facing. In the technological assumptions revealed by banks is present the use of the huge potential of innovation and enterpreneurship in order to develop banking that is based on strong and stable relations with customers. Innovation and technology – two new solutions introduced by Bank BPH in 2012 – Finger Vein and Financial Assistant – obtained the title: The Innovation of the Year 2012 awarded in the competition realized under the patronage of the Faculty of Technical Studies of the Polish Academy of Sciences. The service of mobile banking for individual customers was modernized – as the first bank in Poland we offered the Augmented Reality application for searching bank divisions and cash points. Through technology and funds declared to its development, banks want to possess a modern infrastructure of multichannel access.

In the strategic leverages enumerated by most of the banks described above, there appear such related issues as: quality of customer service, corporation culture or charity activity. Despite the ones mentioned, activities for environment protection and safety in bank functioning are also worth a thought.

Analyzing the strategic leverages presented by exchange banks one should pay attention to the fact that a part of the actions declared by them have a shape of marketing activities used in order to creating a positive image of the bank in the customers and workers' consciousness. In the post-crisis time the common care of costs and protection of the financial result limited or stopped the declared activity for rationalizing expenses and gathering reserve funds.

Table 4. Bank strategic leverages

1. PKO Bank Polski	**2. Pekao S.A.**	**3. BRE BANK**	**4. ING BANK ŚLĄSKI**	**5. BZ WBK**	**6. GETIN NOBLE BANK**	**7. BANK MILLENNIUM**
* Customer satisfaction * Distributional perfection * Innovation and technologies * Effectiveness of organisation	* Taking care of customers * Social engagement * Training and occupational development	* Taking care of customers * Capital * Competence * Culture * Costs	* Relations with customers * Relations with workers * Actions for society * Actions for environment	* Actions of social type * Incentive programmes * The institution of customer spokesman	* Customers * Investing in innovations	* Relations with customers * Relations with workers * Clear actions * Safe actions * Modern infrastructure

*development of competence *Revitalisation and alliance	* Protection of Polish bisons			* Customer satisfaction * Quality		
8. Bank Handlowy * Customer satisfaction * Quality and innovation * Efectiveness	**9. BGŻ** * Incentive systems * Actions for environment * Innovation and technologies	**10 BPH** * Training and occupational development * Strategia Fair Play * Innovation and technologies	**11. Nordea Bank Polska** * Wide and innovative distribution net * Relations with customers	**12. ALIOR BANK** * Relations with customers * Charity activity * Development of new products and distribution channels	**13. BNP Paribas** * Environmental responsibility * Citizen responsibility * Employer responsibilty	**14. BOŚ** * Actions supporting environment protection * Relations with customers * Qualified personnel

Source: Own case-study basing on the date from banks' internet sites.

The sphere of bank values

Many economists and market analysts claim that the financial institutions, especially banks, are responsible for the global financial crisis. Analyzing the reasons of the crisis we deal with a new dimension of systemic risk, whose basis is the „moral gambling". It is defined in the light of ethics as immoral behavior, in the light of economic as disturbances in the effective market operation and restricting fear by greed. As a consequence the systemic risk is increased [Pawłowicz 2010].

On canvas of the negative opinions in the image strategies of bank activities in the post-crisis period, in fact banks expanded the sphere of values and moral rules (Table 5). As far as values are concerned banks concentrate on such issues as: credibility, trust, justice, freedom and respect.

Credibility is perceived as building credibility towards internal and external customers, taking full responsibility for decisions and actions. It is keeping the obligations. It is going by the highest quality standards. It also is honesty towards themselves and others, actions coherent with the bank image and values. Reliability named as an equivalent of credibility is offering services and products together with a clear and understandable manner of showing the details of the offer to customers, explaining and pointing out the best solutions.

Trust is shown by banks as:

- Trust in the relations with friends means credibility based on keeping the given word and the ability to admit to be wrong. Such inner relations should determine our organization's style of action.
- Trust in the relation with customers and suppliers should be earned exclusively by means of constant proofs of our good reputation gained thanks to consistent behaviour, reliability of our products and services, especially in the long term, the ability to admit to be wrong and the change of behaviour and previously made decisions.
- Trust in the relations with investors means creating long-standing, long-term bonds with financial environments, with keeping the consequences and credibility of action, and also simultaneous acceptance of opinions expressed by the market.

Respect is the activity aiming at the customers' well-being. It is approaching each of them individually, with appropriate respect and smile. Respect also means understanding the various needs and opinions of all clients and workers. It is treating every one in every situation as someone the most important for us at the moment.

One of the most interesting values was presented by Alior Bank. It was the value of passion – taking care of the capital market because it gives happiness, mobilization and makes life fuller. It adds to a better understanding of the financial market and being into customer's shoes.

The sphere of exchange banks' values is an ABC of enterprises' ethical behavior. The lack of observing the rules caused severe losses not only in the economic dimension, but also social one. Today the lack of trust to the market caused the introduction of precautions (eg. the recommendations of financial inspection) and regulations protecting the customers (eg.MiFID, Consumer Credit Regulation) to banks' activities.

Table 5. Banks' values

1. **PKO Bank Polski**	2. **Pekao S.A.**	3. **BRE BANK**	4. **ING BANK ŚLĄSKI**	5. **BZ WBK**	6. **GETIN NOBLE BANK**	7. **BANK MILLENNIUM**
* Creditability * Customer satisfaction * Constant training * Enterpreneurship	* Trust * Freedom * Reciprocity * Respect * Clearness * Equality	* Looking in the future * Professionalism * Simplification * Thinking * Engagement	* Honesty * Respect * Openness * Common sense	* Trust * Innovation * Customer satisfaction	* Innovation * Effectiveness	* Development * Innovation * Customer's satisfaction
8. Bank Handlowy	**9. BGŻ**	**10 BPH**	**11. Nordea Bank Polska**	**12. ALIOR BANK**	**13. BNP Paribas**	**14. BOŚ**
* Common goal * Responsible business * Innovation * Development of talent	* Responsibility * Engagement * Social responsibility	* Market orientation * Clear and precise thinking * Imagination and bravery * Cooperation * Knowledge and experience	* Professionalism * Customer satisfaction * Justice * Trust	* Respect * Professionalism * Innovation * Passion	* Engagement * Ambition * Creativity	* Durability * Reliability * Environment protection * Client * Activity

Source: Own case-study basing on the date from banks' internet sites.

The analysis of the exchange banks' effectiveness of operation in the years 2009-2012

In order to verify the presented thesis, five parameters – three economic indicators ROE, ROA and C/I , the security indicator – capital adequacy ratio – and the sector valuation index WIG-Banki were adopted for the analysis of the effectiveness of operation.

The effectiveness of equities in the period from 2009 to 2012 (Table 6) for the banking sector was from 8% to 13%. The best period was the year 2011 when Getin Nobel bank reached a very high ROE on the level of 31%. In the analyzed time the most capital effective banks were: BZ WBK, Getin Nobel Bank and PKO Bank Polski. The stability of high capital effectiveness was shown by: BZ WBK, ING Bank Śląski and Pekao S.A.

Table 6. ROE of the banking sector and exchange banks in the years 2009 – 2012

Banks	2009	2010	2011	2012
PKO BP	15%	15%	17%	16%
Pekao	14%	13%	14%	13%
BRE BANK	2%	12%	15%	14%
ING BANK SLASKI	13%	14%	15%	11%
BZ WBK	22%	16%	17%	18%
GETIN NOBLE BANK	13%	16%	31%	8%
BANK MILLENNIUM	0%	10%	11%	10%
Bank Handlowy	9%	12%	11%	14%
BGŻ	4%	5%	5%	4%
BPH	2%	-3%	5%	6%
Nordea Bank Polska	15%	17%	15%	7%
ALIOR BANK	x	-10%	15%	10%
BNP Paribas	-34%	3%	3%	2%
BOŚ	2%	6%	6%	3%
BANKING SECTOR	**8%**	**10%**	**13%**	**11%**

Source: own case study basing on the data from Polish Financial Supervision Authority and banks' financial reports.

The rate of return from the exchange banks' assets in the period from 2009 to 2012 (Table 7) for the whole banking sector formed at the range from 0,8% in the year 2009 to 1,3% in the year 2011. The most stable and effective in the profitability of assets were BZ WBK, Pekao S.A. and PKO Bank Polski. These banks reached almost twice more effectiveness than the banking sector.

Table 7. ROE of the banking sector and exchange banks in the years 2009 – 2012

Banks	2009	2010	2011	2012
PKO BP	1,6%	2,0%	2,1%	2,0%
Pekao	1,8%	1,9%	2,1%	2,0%
BRE BANK	0,1%	0,8%	1,2%	1,2%
ING BANK SLASKI	0,9%	1,2%	1,3%	1,1%
BZ WBK	1,9%	1,8%	2,1%	2,4%
GETIN NOBLE BANK	1,0%	1,2%	2,0%	0,7%
BANK MILLENNIUM	x	0,7%	1,0%	0,9%
Bank Handlowy	1,3%	2,0%	1,8%	2,3%
BGŻ	0,4%	0,4%	0,4%	0,4%
BPH	0,2%	-0,4%	0,6%	0,7%
Nordea Bank Polska	0,8%	1,1%	1,0%	0,4%
ALIOR BANK	x	-1,3%	1,2%	0,9%
BNP Paribas	-2,1%	0,2%	0,2%	0,1%
BOŚ	0,1%	0,5%	0,4%	0,2%
BANKING SECTOR	**0,8%**	**1,0%**	**1,3%**	**1,2%**

Source: own case study basing on the data from Polish Financial Supervision Authority and banks' financial reports.

The cost/income ratio (Table 8) is a measure of care of the internal costs of bank functioning. The ratio became especially important in the time of crisis. Banks, in the event of limited income drastically reduced coast and kept down expenses. In the analyzed period the biggest dynamics of the cost-income ratio decrease was shown by: PKO Bank Polski and BRE Bank. The decrease accounted for 85 and the tendency to reduce costs was permanent. Other banks, although periodically showing a greater dynamic, consequently in the year 2012 did not permanently reduce the indicator. In the analysis a really high C/I indicator in BOŚ Banku, BPH and BGŻ were noted, and they amounted to 80%, 74% and 70% respectively. These banks significantly differ from the banking sector's average, which is 51%. Keeping such a high cost position with decreased interest rates, margins and bank fees in the long term will negatively influence their financial result and other indicators.

Table 8. C/I of the banking sector and exchange banks in the years 2009–2012

Banks	2009	2010	2011	2012
PKO BP	48%	42%	40%	40%
Pekao	52%	51%	48%	48%
BRE BANK	54%	50%	45%	46%
ING BANK SLASKI	59%	58%	56%	57%
BZ WBK	48%	51%	50%	44%
GETIN NOBLE BANK	36%	33%	27%	37%
BANK MILLENNIUM	x	63%	60%	57%
Bank Handlowy	53%	54%	59%	52%
BGŻ	77%	75%	x	70%
BPH	69%	69%	66%	74%
Nordea Bank Polska	65%	56%	55%	58%
ALIOR BANK		97%	64%	64%
BNP Paribas	x	x	x	x
BOŚ	85%	76%	74%	80%
BANKING SSECTOR	**54%**	**52%**	**51%**	**51%**

Source: own case study basing on the data from Polish Financial Supervision Authority and banks' financial reports.

The solvency ratio expressing the proportion of equity and the sum of assets and the off-balance sheet items measured by the risk is the security benchmark of the bank and banking sector's functioning. The ability to protect against the risk born by the banks by means of equities is gauged on its basis. The minimal value of this ration determined by World Bank's Inspection Panel is 8%. The Polish banking sector in the years 2009–2012 noted a high ratio in the range of 13 to 15% (Table 9). In terms of security from the exchange banks Bank Handlowy, Pekao S.A. and Alior Bank stand out. These banks' indicator in the whole post-crisis period were stable and much higher than the banking sector's ones.

Table 9. Solvency ratio of the banking sector and exchange banks in the years 2009 – 2012

Banks	2009	2010	2011	2012
PKO BP	15%	13%	12%	13%
Pekao	16%	18%	17%	19%
BRE BANK	12%	16%	15%	19%
ING BANK SLASKI	11%	13%	12%	15%
BZ WBK	12%	16%	15%	17%
GETIN NOBLE BANK	11%	10%	10%	12%
BANK MILLENNIUM	10%	14%	13%	13%
Bank Handlowy	17%	19%	16%	18%
BGŻ	12%	11%	10%	12%
BPH	12%	13%	14%	14%
Nordea Bank Polska	10%	11%	10%	14%
ALIOR BANK	34%	15%	10%	17%
BNP Paribas	13%	14%	12%	14%
BOŚ	13%	12%	12%	15%
BANKING SECTOR	**13%**	**14%**	**13%**	**15%**

Source: own case study basing on the data from Polish Financial Supervision Authority and banks' financial reports.

The important element of perceiving the activity of a sector or individual exchange companies is their valuation on the stock market. The exchange index WIG-Banks[1] can be used for the evaluation of the effectiveness of the banking sector by the analysts and the market.

As results from the analysis of the index value from 31 December 2008 to 16 October 2013 r. it increased 3, 5 times form 2334,67 points to 8316,68. The current historical pitch was preceded by a four-year period of growth, which is a constant increase of trust for the banking sector and the expected growth of its results.

[1] WIG-banks index is a sector index, comprising the copartnerships participating in WIG index and simultaneously enrolled in the "banks" sector. In the subindex portfolio there are the same packets as in WIG index portfolio. The base date of the index is 31 Dec 1998, and the index value that day was 1279,56 pkt. The subindex methodology is the same as WIC index, i.e. it is a profit index and when it is calculated the prices of shares contained in it as well as the profits from dividends and subscription rights are acknowledged [www.gpw.pl access from 15.10.2013].

Drawing 1. The graph of the index of WIG-Banks in the years 2008–2013

Source: www.Bankier.pl, Access from 15 October 2013.

Polish exchange banks are often valuated by the market much better than their foreign owners. Valuation of as many as five banks: BRE, BZ WBK, ING, BSK, Alior and Getin Nobel were put on historical places. The next three: PKO Bank Polski, Pekao and Handlowy are at the doorstep of the top in the year 2007. WIG-Banks from a local fall on the stock market on 5th September gained 21%, almost 6% more than the mass market WIG [Sobolewski 2013]

Summary

An agency problem between banks and their depositors induces endogenous capital constraints for banks in obtaining funds from households. Empirically-disciplined shocks to bank net worth alter the ability of banks to borrow and to extend credit to firms. I find that these financial shocks are important not only for explaining the dynamics of financial flows but also for the dynamics of standard macroeconomic aggregates. They play a major role in driving real fluctuations due to their impact on the tightness of bank capital constraint and the credit spread. The tightness measure of credit conditions in the model tracks the index of tightening credit standards constructed by the Federal Reserve Board quite well [Mimir 2013, p. 1].

As results from the analysis, the negative effects of the global financial crisis on the exchange banks in Poland had a rather limited scope. The reasons of such a result were: relatively poorly developed level of financial service development, meagre usage of advanced bank products (financial engineering), smaller relation between the sector and the real sphere and the wide-ranging supervision of the financial market. These factors made it possible for the banking sector to effectively and safely function in the post-crisis period. The

exchange banks, also being under pressure of the investors' side, were included in the tendency, which additionally motivated to effective actions. Basing on the review of strategies and the analysis of bank operating, the thesis was positively verified. The alteration in the strategies of bank managing after the crisis in 2008 caused a limitation of risk and increase in the effectiveness of bank operating. As results from the researches according to the above measurements adopted in the years 2009–2012, the greatest financial and cost effectiveness as well as security can be allocated to Pekao S.A and PKO Bank Polski. These banks are the biggest in Poland. Their total assets' share in the banking sector was 27% in the year 2009 and 25% in the year 2012, and their net financial result 57% and 41% respectively. At the end of 2012 these two banks employed 28% of people employed in the banking sector.

Analyzing the exchange banks' strategy we can separate their common features:

- keeping the basic business segmentation in banks,
- an essential part of the ownership in strategy is to protect the capital to operation,
- an augmented stress on the sphere of values and the risk of refutation in order to build the trust for banks and the market,
- concentrating on values: credibility, trust, respect,
- concentrating on the growth factors: customer, employees, local society and technology.

The Polish banking sector, where the key role is played by 14 exchange banks (67% of the sector's total assets, 82,3% of the net financial result at the end of 2012), is stable and in good financial shape. Its operating effectiveness rises through the growing demand on products and banking services, which foster market growth and richness of the Polish society. The enumerated growth factors meticulously, however not to a similar extent, make use of the exchange banks.

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Contemporary accounting outsourcing in Polish economic reality – survey results

Abstract: The economic changes in recent years have had a significant impact on the development of modern management concepts that are being used increasingly in modern enterprises. Their aim is to improve the operations of these companies, in order to maintain a competitive edge on the market. One of these methods is outsourcing. It is of great importance in the development of today's businesses and is among the most widely used concepts. It promotes effective management of the enterprise and can be used in almost every area of the unit, which helps it to function. The area of applying outsourcing that has been raised in this article is accounting outsourcing. The study provides information on the scope of accounting services usually performed outside the enterprise, demonstrates the specificity of these services in Polish conditions, and shows the impact of outsourcing on costs generated by the company. The article concludes with a summary, which is the general analysis SWOT of Polish accounting outsourcing.
Key-words: accounting, outsourcing, co-sourcing, Polish economic reality.

Introduction

Accounting is undoubtedly one of the most important information systems of any organization that allows efficient and effective management. The accounting consists of specialized knowledge, which includes knowledge of accounting records kept by the Accounting Act. On the whole accounting system has knowledge of business law, as well as specific needs of modern organizations in modern economic life. Expert knowledge is fraught with great responsibility. Ignorance of the law is always harmful. One cannot, therefore, be surprised at the initiatives undertaken by businesses outsource conduct specialized activities to third parties. This phenomenon is called outsourcing, and is becoming more prevalent in the practice of the Polish companies' activities.

Outsourcing is one of the methods to reduce overhead costs. However, costs saving does not appear right away, sometimes you have to wait several years to notice the results in the form of its reduction.

More and more business units use outsourcing services. Outsourcing allows companies to focus on the performance of current operations. An entrepreneur can be an excellent craftsman or tradesman, but does not have to be a good accountant, because the focus on the legal and tax articles that could distract him from the essence of the tasks that are performed in the course of specific projects. Economic effectiveness, efficiency and flexibility is manifested in this, to which each organization was established [Bernais, Ingram, Kraśnicka 2010, pp. 150–156].

In the literature of management and accounting one can read that outsourcing is a modern method that streamlines the management. It is characteristic that the name "outsourcing" is rarely found in practice. You do not rather find this term in the spoken language. Sometimes happens that even if it is used by businessmen, its meaning is hardly ever understood by them. This is the result of sometimes mindless adherence to specific trends, as well as lack of management knowledge.

The purpose of this article is to present the essence of accounting outsourcing in Polish economic reality and to assess its performance in the SWOT analysis. The authors express their hope that the information contained in this report will be a helpful material, not only for financial-accounting services, but also for potential managers and entrepreneurs.

1. The basic range of accounting outsourcing

The outsourcing of accounting services are used by many Polish entrepreneurs, especially those who pursue self-employment and that it does not pay to hire the person responsible for the accounting of the firm. Accounting outsourcing market is very extensive, and therefore competitive. The Polish market for outsourcing of accounting services can be divided into three segments. The first consists of large consulting and auditing firms (it is about centers Business Process Outsourcing) operating in the international market, offering the most expensive and the highest quality services on the market where their clients are the world's largest companies. Polish companies with the participation of foreign capital are the second segment. Prices of their services are lower, but the quality is comparable to the quality of the first segment services. Customers are medium-sized, rarely large companies. The last – the third segment are accounting offices. They are characterized by low prices and varying quality (depending on the office, the quality of services is high to low), their services are aimed at small businesses [http://www.bankier.pl/wiadomosc/Outsourcing-Ksiegowosc-na-zlecenie-coraz-tansza-997667.html]. Prices for accounting services in the accounting offices will be presented in Chapter 3.

The range of services offered as part of the outsourcing accounting by accounting offices on the basis of the information contained on the website of one of Poznan's audit firms offering accounting services, inter alia, presents as follows [http://gtfr.pl/pl/9877.php].

1. **Accounting Services.** The purpose of this service is to introduce organizational changes in the customer's company, consisting in entrusting implementation of accounting function to an external company. The service consists of the acquisition of accounts and obtaining information about the client`s company. It takes place on a monthly basis and is summarized with an annual financial statement. Accounting services extend to the following modules:
   a) **accounts**. These are collections, created on the basis of the documentary evidence from the client, including the following tasks:
      – implementation of accounting documents to the accounting records in accordance with its accounting policy,
      – preparation of accounting journals, which reflect the economic operations,
      – development of registers for the purpose of tax on goods and services,
      – preparation of analytical records of fixed assets (Inventory Book) and settlements,
      – preparation of the turnovers and balances .
   b) statements. They are made on the basis of the information associated with the accounting records, these include:
      – preparing monthly information on the advance income tax or corporation in respect of its business activities by individuals,
      – preparation of VAT returns in respect of value added goods and services tax (VAT-7),
      – preparing summary information (EU VAT),
      – filling out the National Bank of Poland tax returns,
      – filling out the CSO tax returns (KZ, DG-1, F-01).
   c) **reporting**. It consists in preparing the information and reporting documents, namely:
      – preparation of the profit and loss statement and balance sheet,
      – preparation of management reports according to individual customer specifications,
      – making statements in the financial analysis, characterizing the efficiency of the criterion for the allocation of income and expenses (e.g., branches, plants, agents),
      – budgeting income and expense and balance sheet items,
      – reporting on budget execution.
   d) **the financial statement**. This includes activities related to the closing of account books and preparation of reports and other information and reporting documents. These are:
      – preparation of financial statements,
      – filling in the annual declaration of income tax of a legal entity (CIT-8),
      – preparation of documentation detailing the items of the prepared financial statement,

- carrying inventory by verifying account balances and settlement account balances result,
- entering inventory results in the books,
- preparing for the end of year reports to the Central Statistical Office (KZ, F-01) and the National Bank of Poland,
- making other annual reports.

2. **Co-sourcing – "Accounting supervision".** The purpose of this service is to provide an outsourcing company with the implementation of a part of the accounting function. The main benefit is the use of outsourcer's knowledge and experience in the making mechanisms and safety rules in the area discussed. Thanks to this service, the client may leave the accounting functions within the organizational structure of their company. The essence of the service is to create accounts together with the customer's to the extent specified individually, and depending on their needs. With the product the customer avoids the negative effects of errors in bookkeeping for the accounting and tax law. Within the scope of the service "accounting supervision" are in particular:
   - formal and accounting control of source documents,
   - correct approach assessment to business transactions in the accounts with reference to the accounting and tax law
   - preparation or verification of current declarations of income and required reports (among others CSO, National Bank of Poland),
   - consultations during tax audits,
   - supervising the preparation or making out: a balance sheet, a profit and loss account, additional information, statement of changes in equity, cash flow,
   - making out or verification of the annual corporate income tax (CIT-8),
   - consultation on inventory, as well as the method of recording the results in the accounts,
   - providing oral information regarding the accounting and tax rules.
3. **Co-sourcing – "Emergency accounting".** The purpose of this service is to help maintain continuity of the accounting department at the client's company by:
   - replacement accounting staff during the long absence of both operational staff (assistants and specialists) and managers (chief accountants, controllers),
   - solving accounting problems, including aid in the removal of irregularities.

   "Emergency accounting" includes activities such as:
   - help solve the current accounting problems,
   - assistance with replacement workers of accounting department, due to their long absence,

- extensive consultations with specialists and experts in the field of organizational and substantive aspects of the accounting department,

The tasks entrusted to the outsourcer of the service "emergency accounting" relate primarily to independent positions (e.g. chief accountant replacement during maternity leave) and are usually carried out at the customer`s seat. Thanks to the "emergency accounting" service, specialists in accounting can be periodically replaced, in case the entity has problems with absenteeism.

4. **Outsourcing of the Financial Controller and/or Chief Financial Officer competence.** The service is primarily addressed to companies that do not have in their structure any employees with relevant expertise. It consists in giving effective support among others in analyzing the effectiveness of current operations including elements of strategic management in making key decisions for the company, and in unusual situations when a company is facing new challenges, requiring specific experience and skills in the area of finance.
   Support can be provided in various ways, among others by:
   - regular meetings with senior staff,
   - assistance in strategic management,
   - consultation in the area of financial competence,
   - assistance in making financial and accounting structures,
   - conducting activities in the area of finance and controlling for the customer.
5. **Human resources and payroll.** The aim is to make the outsourcing company responsible for carrying out human resources and payroll. This service takes place in monthly cycles. However, a summary of the cycle of cooperation is preparation of annual returns and tax information and social security declarations by the outsourcing company. Human resources and payroll encompass the following modules:
   a) **the outsourcing of human resources**:
      - management and administration of employees' personal briefcases,
      - management of the employees' holiday allowance rap sheet, and also determining the holidays limits, keeping records of other absences,
      - monitoring periods of ending contracts, the validity of the periodic inspection and safety training,
      - issuing employment certificates.
   b) **the administration of wages**:
      - preparing monthly payroll,
      - implementation of salary transfers and public liabilities related to the salaries from the outsources' sub-account dedicated to the customer,

- making monthly information for the employee about accrued salaries and deductions made, as well as sending payments prints to employees,
- calculation of public liabilities related to salaries and the preparation of statements of account and Social Insurance Institution and State Fund for Rehabilitation of Persons with Disabilities (PFRON),
- preparing information for the accounts in the form of payroll,
- reporting, checking out and reporting data changes, employees, contractors and the payer in Social Security,
- issuing certificates of pay,
- annual drawing prints PIT 11, PIT 40, PIT 4R, PIT 8AR, Social Insurance Institution IWA.

6. **Co-sourcing – "Payroll supervision".** The purpose of this service is to provide the HR-payroll function for the implementation to the outsourcing company and to supplement the client's company with high factual competence through the use of the outsourcer`s substantive experience and knowledge. With this service, the client may leave the implementation of HR-payroll function within the organizational structure of their company. The essence of this service is to create, together with the client, the record of HR-payroll in the specified range and, depending on needs. The service provides the client to avoid the effects of errors in keeping wage records for labor law, tax law and regulations on social insurance. "Payroll supervision" includes mainly:
   - analysis of prepared payroll correctness, Social Insurance Institution settlements and tax returns,
   - analysis of payroll record kept correctness,
   - analysis of the accuracy of the personal documentation kept.
7. **Co-sourcing – "Wage emergency".** The purpose of this service is to help maintain the continuity of work of HR – payroll department at the client`s company provided by:
   - replacement of the HR – payroll department personnel during prolonged absences or assistance during a temporary increase in labor,
   - solving wage problem, including assistance in the removal of irregularities.

   "Wage emergency" includes:
   - assistance with replacement of the HR – payroll department workers during their long absence,
   - helping solve the current wage problems,
   - providing information by specialists and experts on organizational and substantive issues of the HR– payroll department,
   - assistance for tasks in Social Insurance Institution corrections, issuing PIT 11 and others.

With the "wage emergency" the client can periodically replace the specialists in the field of human resources and payroll, where the problems associ-

ated with absence appear in the entity. In addition to accounting and payroll services, provided office offers services in the field of audit, including **internal audit (outsourcing/co-sourcing)**, whose goal is comprehensive (outsourcing) or partial (co-sourcing) acquisition and implementation of the internal audit function by the outsourcer's staff seconded to the client with the aim of:

- current monitoring the effectiveness of the internal control system based on the analysis of the client's business risk (including the risk of fraud),
- supporting and controlling functions of the Supervisory Board and the Audit Committee,
- helping in making current and strategic decisions by the board.

The internal audit carried out include the following tasks:

- making the risk analysis of client`s activities,
- drawing up internal audit documentation (internal audit card, internal audit manual),
- developing strategic and operational plans,
- performing auditing tasks under the plans, as well as on the special order of the board,
- providing trainings in the field of internal control and risk management (including the risk of fraud),
- ongoing and special counseling (e.g. in investment projects completion).

The scope of functions that will be performed by the internal auditor assigned to the client is determined individually with each of them. Customers receive materials prepared in the course of audit work, mainly reports on the implementation of individual audit assignments.

The above scope of services, however, is offered only by the big accounting or audit firms. Smaller agencies tend to provide only services in the area referred to in paragraphs: accounting services and HR and payroll [Kuchta, Sukpen 2011, pp. 57–75].

2. Analysis of the survey on outsourcing accounting services

As mentioned earlier, outsourcing of bookkeeping services is a method popular among Polish entrepreneurs, especially those running small businesses. This is confirmed by a randomly conducted brief survey of businessmen in the Swidnica county, associated in the Sudeten Chamber of Commerce and Industry. The research shows that 25 to 29 surveyed businessmen used the outsourcing of accounting services, including one who resigned from handling the accounting office, because, as explained: *Along with the expansion of the company accounting office operating costs equaled the cost of employing an accountant, so that I have access to all documents, as they are located on site.* Entrepreneurs surveyed worked in the Swidnica county in the following industries:

- service (32% of respondents),
- trade (48% of respondents),
- trade – service (8% of respondents),
- production (12% of respondents).

This survey aimed to identify the causes of outsourcing application, its impact on the cost of the company, as well as examination of the opinions of the businessmen using outsourcing on accounting outsourcing outside the unit. The survey shown to respondents presented as follows (the layout has been modified due to the limited size of the article):

QUESTIONS ABOUT THE COMPANY

1. In what industry the company operates?
   trade, production, services, other
2. What is the organizational – legal form of the company?
   self-employment, limited liability company, partnership, stock company, other
3. How many people are employed in the company? (including contracts for work orders, directives, etc.)
   1 – 5, 6 – 10, 11 – 15, 16 – 20, 21 and more
4. How long has the company been on the market?

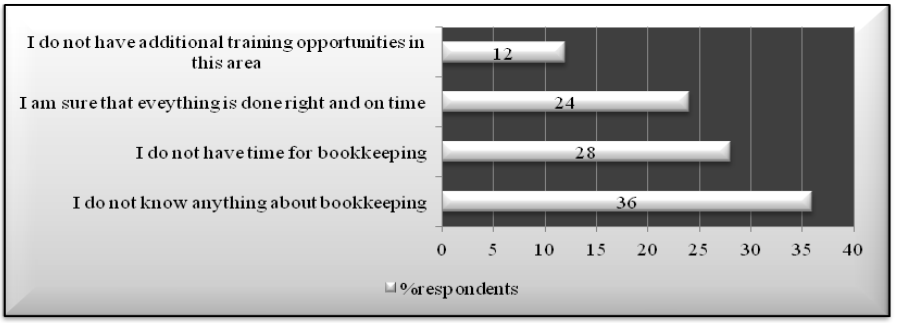
QUESTIONS ABOUT ACCOUNTING SERVICES

1. Why did you decide to use the services of an accounting office?
   - I do not know anything about bookkeeping,
   - I do not have time for bookkeeping,
   - because I am sure that everything is done right and on time,
   - I do not have additional training opportunities in this area,
   - other.
2. Are you satisfied with the service of the accounting office?
   yes, no, I have no opinion
3. Did commissioning accounting services outside the unit reduce the costs?
   yes, no, I have no opinion
4. Did commissioning accounting services outside the unit increase the revenue?
   yes, no, I have no opinion
5. What guided you in the selection of the accounting office?
6. What do you think of commissioning such services outside the company?
7. Why did you give up the accounting office services? (this question is addressed to people who in the past used the accounting office services, and now lead the accounting on their own).

Based on the answers given in the survey it is stated that all the business owners surveyed were satisfied with the service of the accounting office they used. However, the formation of the reasons of the decision to use the services of an outsourcing company is shown in Figure 1. The reasons were not af-

fected by the business sector, its organizational – legal form, number of employees, or the duration of the enterprise on the market.

Figure 1. The reasons for the decision to use the services of an outsourcing company

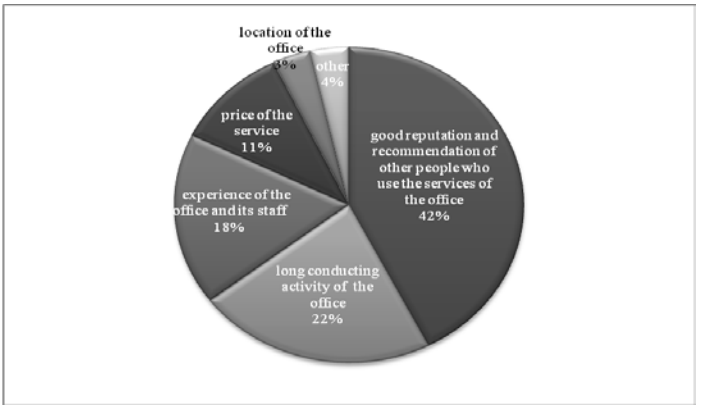


Source: own study based on the findings.

The presented figure shows that 12% of respondents do not have training opportunities in the field of accounting. This should not be a surprising phenomenon, because accounting is expert, specialist knowledge. 24% of those who responded expressed (you can call it that) their trust in the accounting offices stating that they are satisfied that all the documents are done well, correctly and on time. 28% of respondents stated that they did not have time for accounting, while 36% of respondents admitted they did not know anything about the bookkeeping, which is connected directly to the first actuated issue.

When choosing an outsourcing partner respondents were guided mainly its good reputation and command of people who have already used the services of the office, as well as a long-term business offices and experience of its employees. It was only subsequently drew attention to the price for the service. Detailed reasons for choosing an outsourcing partner are shown in Figure 2.

Figure 2. The reasons for choosing an outsourcing partner



Source: own study based on the findings.

The highest percentage of people (42%) when choosing an outsourcing partner was guided by a good reputation and recommendation of other people who had used the services of the office. For 22% of respondents long conducting activity of the accounting office was important. 18% were reliant on the experience of the office and its staff. Only 11% of respondents were guided by the price of the service, only 3% focused on the location of the office, and 4% of people focused on other arguments.

The summary of the survey are selected respondents' opinions about the outsourcing of accounting services:

- "Commissioning this kind of service allows employers to devote more time to look after the company, knowing the qualifications of people working in the accounting office one has the peace of mind and certainty that everything is done in accordance with the regulations and on time".
- "It is a very good solution, you can then – so to speak – rest assured, there is also time for more creative thinking and the ability to grow your business".
- "This is a good solution for people who do not delve into the topic of accounting, do not know anything about it and cannot devote enough time to really examine specific accounting events to make good decisions then".
- "It is a convenient solution for businessmen, because bookkeeping is time consuming and requires knowledge of current regulations and law".
- "Personally, I think it is a good solution. If there is no need to conduct full and comprehensive accounting in place, the accounting office does that for us".
- "It is a very good solution, provided that the office is really good and has a very good reputation in the market and among its employees or owners are auditors, and also has a large customer base. However, it is important to still try to control the work of the office, to discuss the situation of the

company and follow its current situation, because often people supporting company's documentation do not pass on all the information that may be important to us. In other words – the office – the most so – but with the businessman's active part in running company's account books".

– "It is a good solution for entrepreneurs who do not have time for accounting or know nothing about it. An accounting office shall ensure the timeliness and above all accuracy of the completed documents. However, the companies to which the full bookkeeping applies should not section the accounting department from their structure. They should keep an accountant in their company".

3. Impact of outsourcing the company's cost

Reducing costs is undoubtedly one of the most important benefits resulting from the implementation of outsourcing. Through costs one can also evaluate the profitability of implementation of accounting outsourcing in the company. To do it properly, in addition to the cost of maintaining the accounting department, one should also consider factors not usually associated with the process of outsourcing, such as losses due to accounting errors [Czubakowska 2007, pp. 222–223]. The structure of the costs of the accounting department in the unit are shown in Chart 1.

According to the survey presented above, 44% of entrepreneurs participating in it, noticed a reduction in costs after the introduction of accounting outsourcing for their business, of which only a third of them (16% of all respondents) noticed the increase in revenue. These were companies with many years of experience.

Chart 1. The structure of the costs of the accounting department in a unit

COSTS GROUPS	DETAILED COSTS IDENTIFICATION
ACCOUNTING DEPARTMENT MAINTENACE COSTS	
The costs of staff	– salaries and derivatives, – training and delegations – books and magazines.
The costs of infrastructure and maintenance of accounting departments and sections	– the cost of renting office space, – charges for water, electricity, telephone, Internet, cleaning, office supplies, – depreciation of computer hardware and software, and other equipment and furniture, – furniture and other equipment recorded directly as costs, – the costs of implementing software and external services of the maintenance and the administration, – the costs of repairing and upgrading hardware and software or hardware scraping.

DIRECTLY NOT IDENTIFIED COSTS	
The costs of human errors	– penalties and interest with respect to incorrectly completed tax returns and Social Security declarations, – the costs of accounting data loss by incompetent handling of financial and accounting systems, – the costs of erroneous and lost entries correction (additional working hours, employment of additional people), – the costs of wrong decisions due to lack or scarcity of information, – the costs of poor work organization and the lack of communication.
The costs of data processing	– costs of lack of integrated management systems, – costs of accounting data loss due to hardware failures, – costs of lack of access to accounting data due to hardware or software failure, – costs of lost data reconstruction, – costs of factual errors caused by information systems.
Other costs	overcompetence costs – the chief accountants often perform work that might be done by people less experienced and educated, with a much lower salary.

Source: Czubakowska 2007, p. 222.

To evaluate the cost-effectiveness of outsourcing accounting a company must determine the costs of outsourcing services, as well as the costs of their implementation. The very act of outsourcing implementation is a hidden cost, usually not included in overhead costs of introducing this method. These costs may be manifested even by the effort connected with the transition for the next phases of the outsourcing cycle, or the time that employees spend on planning, information gathering, as well as negotiations with outsourcers [Power, Desouza, Bonifazi 2010, p. 77].

During the implementation of outsourcing a change in the cost structure may occur. Then the fixed costs are replaced with variable costs, which are spread over longer periods. The costs of a permanent nature apply to monthly fees (salaries, fees for electricity, rent, etc.), while the variable costs may depend, for example, on the number of hours worked by the outsourcer's employee for the client's company [Czubakowska 2007, p. 223].

Taking into account the costs listed in chart 1 it may appear that leading accounting is more expensive than renting the accounting office for this purpose. But one has to keep in mind to make the exact calculation of the costs, as prices for services offered by some accounting offices may outweigh the costs of employing an accountant. With a large number of accounting documents,

the cost of accounting smaller companies by an accounting office may be as high as several hundred zlotys. The costs of management of workforce (calculated separately for each employee) and the cost of completing monthly declarations must also be added. Of course, large companies must deal with much higher costs, given the breadth of documentation and the bigger number of employees.

Prices for the accounting office services depend among others on the following factors:

- the type of records and forms of taxation,
- number of accounting documents
- the number of employees and contractors,
- the nature and specifics of the company,
- responsibilities.

Below there are prices formed for the major accounting services in small accounting offices:[1]

- keeping the tax book of income and expenses of 100.00 PLN,
- maintenance of the trading book (full accounting) from 400,00 PLN,
- keeping records of income (lump sum) from 80,00 PLN,
- full HR – payroll service (including social security declarations) from 25,00 PLN per employee,
- conducting HR issues from 20,00 PLN per employee,
- filling in a declaration to the Tax Office from 30 PLN,
- annual tax return testimony from 15,00 PLN.

One should not, however, imply a lower price for the accounting firms services, because the low price often goes hand in hand with low quality. So instead of saving, the customer incurs additional costs of poor handling and errors in the accounts.

4. Summary – SWOT Analysis Polish accounting outsourcing

SWOT analysis is one of the most popular methods of strategic analysis to assess the strengths, weaknesses, opportunities and threats (from the environment). SWOT is an acronym of English words: **s**trengths, **w**eaknesses, **o**pportunities, and **t**hreats, which make up the factors influencing the strategic position of the project. The purpose of the SWOT analysis is to develop the best strategies and neutralize threats [Griffin 2004, pp. 249–250].

In the case of outsourcing, SWOT analysis will relate to the statement of its strengths and weaknesses, opportunities and threats, as well as their résumé. SWOT analysis of outsourcing accounting is presented in Chart 2.

[1] The information gathered from the data provided on the websites of accounting offices – all prices are net prices and concern one month.

Chart 2. SWOT analysis of accounting outsourcing

SRENGHTS	WEAKNESSES
– focusing the company`s core business, – reducing the costs associated with the maintenance of the accounting department, – professional document management by the outsourcing company, – implementation of the outsourcing company into the *know-how* unit, – reducing risk – an outsourcer is required liability insurance for the business, – the beneficiary company does not accept accounting outsourcing maintenance costs of hardware, software purchase, books, publications, etc., – means that the company will save by implementing outsourcing may be invested in strategic areas of its business, – outsourcing company provides a higher level of services thanks to the knowledge and experience in areas such as accounting and tax law, – outsourcing companies staff continue to elevate their professional skills, as well as track changes in tax laws and regulations, – thanks to servicing a wide variety of economic units, the outsourcing company has a unique experience which reduces the risk of error in unusual situations, – partial responsibility shift for errors onto the outsourcing company.	– the company has no control over the source documents, – lack of information on demand, which used to be provided by the financial – accounting department, – lack of support from accounting departments managers in making current and strategic decisions, – dismissal of the accounting department employees, – communication problems with outsourcing partners, – the possibility of outflow of information outside the unit, – earlier investments in hardware and software.

POTENTIAL OPPORTUNITIES	POTENTIAL THREATS
– rapid development of Business Process Outsourcing centers, – development of information technologies, and thus the ability to control the accounting of own business on-line, – increasing experience of outsourcing companies**,** – increasingly growing interest in accounting outsourcing, – creation of joint ventures formed between the client and the outsourcer, – more and more highly specialized outsourcing companies (increased competition), and thus lower prices.	– bad experiences of other companies that have opted for an external accounting services, – lack of knowledge about the benefits of the outsourcing implementation, – blurring responsibility for keeping the accounts, – the possibility of the economic crisis, – legal restrictions, – fear of dependency on third-party, – poor framing of the outsourcing agreement.

Source: Zielinski 2008, pp. 198–200; Czubakowska 2007, pp. 206–208, 224;
http://gtfr.pl/pl/Outsourcing_ksiegowosci.php?artid=205&;
http://www.jaccounting.pl/outsourcing.html;
http://gtfr.q.pl/Plus4/GTF_Plus_4.pdf;
http://www.bankier.pl/wiadomosc/Rok-2010-w-polskim-outsourcingu-2265307.html.

From the above chart it can be concluded that outsourcing of accounting services is poised for rapid growth in Poland, though, it is often used already. It is proved not only by the continuous increase in the number of small accounting offices, but also large Business Process Outsourcing centers, as well as the development of information technologies, and hence more and more experience of outsourcing companies and continuous skills updating of people who work there, in order to catch up, or even be better than the competitors.

At the present stage of technology and highly qualified outsourcing companies one can easily offset the weaknesses and part of threats of which are inherent to the use of accounting outsourcing. The decision to use outsourcing in the organization should be an organized action. It is worth mentioning that what makes life easier for entrepreneurs is the fact that the legal system in Poland is flexible enough not to hamper the development of this type of service. At the same time it allows you to reach a compromise solution and reasonably protect the interests of the parties.

Accounting is one of the most important enterprise information systems. It requires a very good knowledge of records, governed by social and legal norms. The records process as well as the calculation and creation of financial

statements is both time consuming and very expensive. The company owner must take a decision (considering the nature of the business conducted) if bookkeeping in-house or outsourcing the service to an external company is more cost-effective. These companies may include accounting, audit and tax offices and also business service centers that increasingly become part of the landscape of Polish economic reality. Prices for services performed in small accounting offices are relatively high. This may be a good alternative for small companies owners who cannot carry their own accounts because they do not have the time or factual knowledge.

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Analysis of Selected Investment Fund Type Ranking Position – PROMETHEE Method Application

Abstract: We decided to use the PROMETHEE method to rank selected types of investment funds offered on the Polish market. In our deliberations, we took an interest in the investor with a certain aversion to risk who chooses from among treasury securities or stable growth funds. We took into consideration whole ranking lists made for half-yearly periods from 2010 to 2012 instead of the specific objects pointed by model.
We decided to check whether, among investment products of interest to us, there are stable relationships over time arising from their ranking positions that allow to identify regular groups of leaders and outsiders. Moreover, we checked the influence of the fund size measured by the value of its assets on its ranking position.
Key-words: PROMETHEE, ranking, investment funds, capital market.

Introduction

Polish investors have potentially at their disposal a broad spectrum of opportunities to invest their funds that satisfy various needs and preferences. Quite a considerable part of that range is products offered by Investment Fund Associations (IFAs). The great variety of proposed products is, however, becoming a problem. The choice of a future investment depends on preferences of the investor who evaluates interesting funds according to many criteria at the same time.

We decided to use the PROMETHEE method (deriving from the group of multicriteria programming tools) to rank selected types of investment funds offered on the Polish market. In our deliberations, we took an interest in the investor with a certain aversion to risk who chooses from among treasury securities or stable growth funds.

Although the PROMETHEE method serves rather to indicate a decision (the choice of a specific object) being the most beneficial from the point of view of the decision-maker's preferences, we will take into consideration whole ranking lists made for half-yearly periods from 2010 to 2012. We decided to check whether, among investment products of interest to us, there are stable relationships over time arising from their ranking positions that allow

to identify regular groups of leaders and outsiders. Moreover, we wish to answer the question about the influence of the fund size measured by the value of its assets on its ranking position.

The development of the PROMETHEE lasts since 1982 when it came to existence. It turned out to be enough flexible that it is being used not only in economics but also in chemistry, ecology, public services and many other fields. You can find a comprehensive list of bibliography on this subject on the www.promethee-gaia.net website. This list regularly is being replenished.

1. Short Description of the IFA market in 2012

We will begin with a short description of the Polish IFA market. It is based on a report prepared by the Chamber of Fund and Asset Management recapitulating operations of investment funds in 2012 [Raport 2012] but we will limit the presentation to only those parts of the report that concern two groups of funds being of interest to us.

Authors of the report drew attention, among others, to the way in which Poles' savings are used. The total value of Polish households' savings reached PLN 1,062 bn in 2012, which constituted an increase of 10.6% as compared to the preceding year. It is the record volume of funds accumulated in various types of investments. The dynamics of the increase in savings exceeded that of 2011, which was 5.2%. Poles, however, are not very willing to invest their free financial means in investment funds. In 2012 the share of domestic entities of that type in the structure of savings remained at the level similar to that of the preceding year (6.6% and 6.5% respectively).

Almost a half (48.9%) of held savings is kept by Poles in the form of PLN and foreign exchange deposits. The value is similar to that of 2011 (50.2%). The dynamics of changes measured year to year indicates a 13.2% increase in the net asset value of retail investment funds. If that is accompanied by an upturn on the stock exchange in 2012, it can be said that we witness a return of trust in capital markets whose crisis we still observed a year earlier.

In general, the value of assets accumulated in a majority of fund types was rising. The greatest beneficiaries of the increase turned out to be Open Investment Funds (a rise of 21.2% year to year) and insurance capital funds (20.5%). A slight decline in the value of assets occurred solely for state companies' shares as well as bonds and bills. As a result, the net asset value in GDP rose to 9.2% from 7.5% in 2011.

The value of means entrusted to the IFAs increased by PLN 31.2 bn (27.1%) as compared to 2011. That rise is mostly accounted for by an offer of funds addressed to individual investors. Except for May 2012, when a decline of PLN 1.9 bn was noted, the volume of assets was constantly on the rise. Throughout the year, however, an excess of purchases over re-purchases was observed, totalling PLN 14.2 bn for the whole year. The most popular were debt funds, non-public assets funds and absolute rate of return funds, which is consistent with the situation on the market of households' savings. The largest negative balance occurred for mixed funds. A considerable part of means flowed out of share funds, capital protection funds and cash funds too.

The analysis of dynamics of the net asset value (NAV) in December 2012 as compared to the corresponding period of the preceding year certainly indicates the greatest increase (of 67.2%) for debt funds. Thanks to that, they achieved the biggest, i.e. 28.3%, share in the market. Share funds, ranking second in that classification, accounted for 16.8%. Non-public assets funds ranked second as regards the year to year increase (63.9%) and third in respect of their share in the market (16%).

As for mixed funds, they recorded a 5% decline in NAV dynamics, which afforded them a 13.8% share in the market (the lowest since 2003) and the fourth position in that respect. It should be noted, however, that, in 2012, investors were willing to withdraw means from those funds; hence, the balance of payments and withdrawals amounted to PLN – 3.6 bn. The greatest declines in the dynamics of the asset value were recorded by raw material and capital protection funds – of 25.5% and 20% respectively.

As shown by the above data, the fortunes on the IFA market were declining for some types of funds. A majority of households decided to make bank deposits while investment funds were of interest to a small part of potential clients even though the value of accumulated savings was record high. Those, however, who decided to entrust their means to investment funds, chose ones characterized by a minimum risk level, mainly debt funds. That was to the biggest disadvantage of share and mixed funds that include, among others, stable growth funds.

2. PROMETHEE Method

Methods that support decision-making can be provisionally divided into single-criterion and multicriteria methods. The sheer nature of a decision-making problem often results in its multicriteria character. That is the case when decision-making requires considering at least several decision variants, each of which is affected by many factors that determine its acceptability. A review of strictly economic applications of multi-criteria methods can be found in [Zavadskas, Turksis 2011].

Multicriteria optimization is applied to indicate the best decision in an n-element, countable and finite set of decision variants based on evaluation according to k criteria [Trzaskalik 2008, p. 189]. The choice made is to correspond to preferences assumed by the decision-maker and determined by weights assigned by the decision-maker to specific criteria. Thus, the decision-making problem consists in choosing the subjectively best variant. That subjectivity refers to the importance of specific criteria as some factors are usually more important than others to the decision-maker [Ziemba, Piwowarski 2008]. Different decision-makers may of course perceive the same criteria in a different way. With pre-determined weights of criteria, specific variants are then objectively ranked as that is usually done by using a formalized algorithm.

In the algorithm, we assume that there is a certain utility function allowing to determine an order in the set of variants being considered [Kaliszewski 2008, p. 10]. The problem is solved through maximization of the above-mentioned function, i.e. finding such a variant (we will refer to “objects” fur-

ther in the text) for which the analytical form of the function has the highest value. As it has been proven in [Golderman, Schöbel 2011] and [Hajkowicz, Higgins 2008] various multicriteria programming methods are to some extent similar to each other. In our specific case, we will employ the PROMETHEE II method as the method to determine the utility function value. The abbreviation stands for *Preference Ranking Organization Method for Enrichment Evaluations*. It is a method presented by Bernard Roy in 1982 [Macharis, Springael, De Brucker, Verbeke 2004]. It allows to rank objects by going through the following steps:

1. determining the preference function value for all object pairs;
2. determining individual preference indices for all object pairs;
3. determining multicriteria preference indices for all object pairs;
4. determining negative outranking, positive outranking and net outranking flows for each object;
5. making a multicriteria ranking.

In the first step, we determine values of nondecreasing preference function ($r^{(k)}(i,j)$) which serves to compare specific pairs of objects (i,j) in the scope of consecutive k criteria.

In the second step, we determine individual preference indices (the $H^{(k)}(i,j)$ matrix) based on one of six so called generalized criteria that enable simultaneous comparison of object pair preferences for all the criteria. Their values depend on the preference functions computed in the first stage. Those criteria include:

1. usual criterion – only provides information that object i outranks object j or that they are indifferent to each other;
2. U-shape criterion – differs from the usual criterion in assuming the threshold of indifference at $q>0$ also referred to as the indifference index;
3. V-shape criterion – the value of the preference index grows linearly along with the rise in the value of the preference function until it exceeds the p level of the preference index;
4. level criterion – encompasses indifference and preference indices. The value of the function below q means that objects are indifferent to each other; when it is in the (q, p) range, object i weakly outranks object j; for the value above p, strict outranking occurs;
5. V-shape with indifference criterion – differs from the preceding criterion in the way of calculating the preference index;
6. Gauss criterion.

We will discuss the last criterion in slightly more detail due to its later application. In that criterion, the preference index is computed based on the normal distribution density function. Formula (1) illustrates how the preference index is calculated:

$$H^{(k)}(i,j) = 1 - \exp\left(-\frac{(r^{(k)}(i,j))^2}{2\sigma^2}\right) \tag{1}$$

where:

σ – standard deviation of objects in the scope of specific criteria.

Criteria one through five require earlier determination whether objects are indifferent to each other or one outranks the other. They also introduce certain thresholds of indifference or preference that can be transformed by means of the set function.

We decided to assume the Gauss criterion owing to its advantages as, first of all, it is not necessary to provide values of additional indices, which is the case for the other criteria. Moreover, preference indices are close to each other for very low or very high values of the preference function, whereas for average values the index is approximately linear, which almost proportionally reflects relationships for pairs of objects. Thus, the criterion becomes, on one hand, easier to apply and, on the other hand, gains objectivity.

In the third step of the PROMETHEE method, we calculate a multicriteria preference index for each pair of objects (*i*,*j*) according to the formula:

$$\prod(i,j) = \frac{\sum_{k=1}^{K} w_k H^{(k)}(i,j)}{\sum_{k=1}^{K} w_k} \tag{2}$$

where:

w_k – weight of the *k* criterion.

In the fourth step, we compute positive outranking flows (for rows) and negative outranking flows (for columns) for elements of the matrix provided by formula (2):

$$\Phi^{+}(i) = \frac{1}{n-1}\sum_{j=1}^{n}\prod(i,j) \tag{3}$$

$$\Phi^{-}(i) = \frac{1}{n-1}\sum_{j=1}^{n}\prod(j,i) \tag{4}$$

Afterwards, we determine net outranking flows as differences between positive and negative outranking flows for each of the objects. Net outranking provides information on the size and character of a given object's outranking of the other *n*-1 objects. If the net flow is positive – the object is in the outranking group, if it is negative – it is outranked by the other objects.

The last, fifth, step of the method is to order objects according to their decreasing net flows, which allows us to rank the objects as required. Objects that fit the decision-maker's preferences the most are at the top of the ranking.

Please note that PROMETHEE and other multicriteria methods assume that decision-maker has a perfect information. We also assume that. In practice, this condition is not always met. In [Ben Amor, Mareschal 2012] you can find a proposal to include imperfect information into PROMETHEE.

3. Ranking of Funds and Its Analysis

One of the aims of the study is to rank investment funds according to selected criteria. Financial statements supply a multitude of data and indices, out of which we decided to use values describing the investment policy and the fund as a quoted entity.

A common way to analyse the functioning of investment funds is quotations of share units (SU) and net asset value (NAV) as well as changes they undergo [Marcinkowska 2007, p. 443–444]. We compute the value of a share unit by dividing the net asset value by the number of units arising from the fund's records.

Furthermore, it is worth looking at changes concerning sold and re-purchased share units as those impact on changes in the fund's capital. The sale of units increases the capital, whereas re-purchase – decreases it. In consequence, it affects the situation of the whole entity, which justifies considering those values when ranking funds.

In the part dedicated to results of calculations, we will use the mean NAV in the period to which the statements referred and an index describing the relationship of the net asset value to the share unit quotation.

We will also take into account the efficiency of fund management and, in particular, the level of costs it generates. It so happens that a majority of management costs comprises remuneration for the fund (fee collected from each member). Hence, we will use the fund's cost level as a criterion.

The study concerned stable growth funds and bond funds or (in the case of some Investment Fund Associations) their equivalents of a similar profile of activity. Out of the open investment funds present on the market, we only excluded the offer of AXA TFI S.A. due to its incomplete financial statements for the analysed period. Data were provided by half-yearly financial statements for 2010–2012. Therefore, we established six sets of ranking lists for each of the fund groups concerned, separately for each semi-annual period.

The choice of the investor having at least partial risk aversion imposed a limit of two types of funds. On the market, however, operate many types of funds. They have a different approach to risk or are interested in specific market and financial instruments. In [Abaldvi, Charsooghi, Esfahanipour 2007] a similar problem appeared but towards listed companies. A two-time use of PROMETHEE turned out to be the solution. First time to distinguish the entire branches meeting the decision-maker's criteria and for the second time to create the ranking of specific companies.

Multicriteria optimization requires the earlier specification of weights for the applied criteria. It is the task of the decision-maker who, for example, fills in an appropriate questionnaire. In the PROMETHEE method, there is no arbitrarily imposed manner to determine weights[1], of which we will take advantage and propose our own solution, alternative to the traditional approach.

[1] It is different, among others, in the AHP method where the application of paired comparisons matrix requires verifying the consistency of weights specified by the decision-maker.

First, let us assume that weights will come from the 1 to 5 range, with 1 being the lowest importance of the criterion and 5 – the highest. The assumed range is of the continuous character. The PROMETHEE method takes into consideration the importance of criteria upon the earlier normalization of weights. Thus, using the random number generator of computing environment R, we generated 1000 values of each such normalized weight. Parameters of distribution were chosen is such a way so that, upon reversal of normalization, weights were in the [1,5] range for each criterion. The generated values are interpreted as the simulation of results of administered questionnaires.

The beta distribution is well suited to modelling variables whose values are subject to limitations and for which asymmetry is of additional importance. In our case, the asymmetry of distribution determines the scale of importance of a given criterion. Left skewness will mean higher likelihood of assuming a weight above its mean value (the criterion becomes more important), while the right skewness expresses the lower importance of the criterion.

The asymmetry was measured according to the formula:

$$As = \frac{n}{(n-1)(n-2)} \sum_{i=1}^{n} \left(\frac{x_i - \bar{x}}{\sigma} \right)^3 \qquad (5)$$

where:

As – skewness coefficient;

$\bar{x}$ – arithmetic mean;

σ – standard deviation.

For each criterion, α and β parameters of beta distribution were selected in such a way so that the coefficient provided by formula (5) equalled the assumed value expressing the criterion importance level. We considered two weight approaching scenarios. In the first scenario, weights for randomly selected *k*-1 criteria (*k* – total number of criteria) came from the [0, 1/*k*] range and were generated from beta distribution with right asymmetry. The skewness coefficient (separately generated for each of the drawn weights) was in the 0.6 to 1 range. The last weight was the complement of the sum of the other weights to one. Such a procedure reflects a situation where one of criteria is of a considerably higher importance to the decision-maker as compared to the others whose importance is at a similar, not very high level.

In the other scenario, importance, i.e. asymmetry of distribution, was arbitrarily decided for each criterion. Then, using the random number generator, we generated 1000 values from the 0 to 1 range for each weight.

We also assumed that the set weights will remain at the same level for the whole studied time period. We present below the criteria applied in ranking along with the symmetry type assigned to them for the case of the individual determination of the degree of importance in decision-making:

1. investment earnings (*As* = -0.8);
2. fund's costs (*As* = 0.5);
3. mean net asset value (*As* = -0.6);

4. number of sold share units (*As*= -0.8);
5. number of re-purchased share units (*As* = -0.8);
6. net asset value per share unit (*As* = 0.1).

Values generated based on beta distribution were averaged and the received means became weights in the PROMETHEE method. For the second scenario, additional normalization was necessary because the sum of averaged weights exceeded 1. Ranking was performed applying the Visual PROMETHEE program[2].

Having received the rankings, we decided to check whether distributions of objects' ranks for both the scenarios can be considered similar from the statistical point of view. We compared scenario pairs separately for stable growth funds and bond funds. We employed the Wilcoxon signed rank test[3] [Aczel 2009, p. 723]. The test is a non-parametric alternative to the *t* paired observations test but, unlike that, it does not require meeting the assumption of the normal distribution of observation differences. It takes into account not only the sign of paired observations but also the size of the difference between them and, to be more precise, of the ranks of those differences.

In our case, accepting the verified hypothesis means that distributions of ranks do not differ between the compared scenarios and differences in funds' ranks are not statistically significant. Thus, verification also concerns the hypothesis of the impact of changes in preferences as to specific criteria on the funds' ranking positions.

Results of the Wilcoxon signed rank test (received by means of the STATISTICA package) confirmed that distributions of ranks do not significantly differ when comparing scenarios for the groups of stable growth funds and bond funds. Certainly, one should not expect a specific fund to retain its ranking for three years. The range of changes within the specific scenarios, however, proved to be small. Therefore, due to the considerable similarity of results between the considered scenarios, we focused on the second variant where there is a differentiated approach to the assumed funds evaluation criteria.

Table 1 contains rankings of stable growth funds received for consecutive periods. The number of bond funds was higher by one because two funds offered by BPH were included in the study.

Among stable growth funds presented in Table 1, the highest ranking were: ING Stable Growth, Legg Mason Senior and PZU Stable Growth Mazurek. Over the period of three years, all three were always top ranking funds and only exchanged positions with one another. At the other end of the list were: Amplico Stable Growth (last or one but last ranking position for all the half-yearly periods), SKOK Stable of Changeable Allocation, BPH Stable Growth Subfund and Skarbiec Protection of Capital. The potential buyer of unit shares with the above described preferences should also not be interested in: Millennium Stable Growth, Idea Stable Growth and KBC Stable Subfund.

[2] The program is available at www.promethee-gaia.net.
[3] Also referred to as the Wilcoxon matched pairs test.

While looking at results contained in Table 1, it can be noticed that, in general, small changes in funds' positions prevail from one period to the next. Only the fund belonging to BPH dramatically improved its ranking in the list in the second half of 2010 to record an equally dramatic fall as early as in the following year. An interesting situation can be observed for Pioneer Stable Growth characterized by the most stable, unchanging ranking position. Over the three years a regular fall in the ranking position occurred for the earlier mentioned Idea Stable Growth (from the 8th to the 13th position). The greatest improvement in the position in the list was observed for UniStable Growth (from the 12th to the 8th place).

In the period from the beginning of 2010 to the end of 2012 half of the funds were characterized by a negative net flow, which from the point of view of the PROMETHEE method is tantamount to being excluded from the sphere of the decision-maker's interest.

Table 1. Rankings of stable growth funds for half-yearly time periods

Fund name	Jun 10	Dec 10	Jun 11	Dec 11	Jun 12	Dec 12
Allianz Stable Growth	9	12	10	7	8	10
Amplico Stable Growth	16	16	16	15	16	15
ARKA Stable Growth	6	6	6	6	7	7
AVIVA Investors Stable Invest.	7	7	8	8	6	6
BPH Stable Growth Subfund	15	8	13	16	15	16
Idea Stable Growth	8	9	9	10	12	13
ING Stable Growth	4	1	1	1	3	3
KBC Stabilny Subfund	11	11	12	12	9	9
Legg Mason Senior	2	3	2	3	1	2
Millennium Stable Growth	10	13	11	11	11	11
Pioneer Stable Growth	5	5	5	5	5	5
PKO Stable Growth	1	4	3	4	4	4
PZU Stable Growth Mazurek	3	2	4	2	2	1
Skarbiec Protection of Capital	13	14	14	13	13	14
SKOK Stable of Changeable Allocation	14	15	15	14	14	12
UniStable Growth	12	10	7	9	10	8

Source: own work.

We believe we can attempt to state that the investment policy and the way of stable growth funds' management guarantee a kind of continuity of their behaviour. Interestingly, strategies assumed by managers of such funds seem to affect relations among the entities themselves. Hence, in consequence, we observe slight shifts in the lists in consecutive periods. Of course, it should be taken into account that such funds focus on long-term investment.

It could seem that funds that deal with investing in bonds – securities ensuring small but continuous profit – ought to be characterized by similar (or even lower) changeability of ranking positions as compared to stable growth funds. Table 2 shows that it is not necessarily the case.

While it was easy to identify groups of leaders and outsiders within the group of stable growth funds, it is more difficult to as clearly indicate one entity in the case of bond funds. Although they are theoretically less risky and less susceptible to market turbulence, bond funds were characterized by greater changes in ranking positions over time.

Undoubtedly, the most attractive for the decision-maker with the assumed preferences will be Pioneer Bonds Plus which ranked either first or second over the three years. An interesting alternative is Millennium Deposit Subfund. Although it featured quite low in the first half of 2010, it quickly improved its ranking to gain the first position in 2012. Moreover, apart from the second half of 2011, the other of the BPH funds systematically retained its ranking among the top five funds.

The four lowest ranking funds in Table 2 are: SKOK Bonds, Legg Mason Bonds, Amplico Bonds and Allianz Bonds. They all ranked low for almost the whole three year period.

Table 2. Rankings of bond funds for half-yearly time periods

Fund name	Jun 10	Dec 10	Jun 11	Dec 11	Jun 12	Dec 12
Allianz Bonds	10	14	16	12	16	17
Amplico Bonds	6	17	17	13	17	16
ARKA Bonds	4	7	5	5	7	6
AVIVA Investors Bonds	15	13	11	9	8	7
BPH Bonds 1	8	5	6	16	12	11
BPH Bonds 2	3	1	2	6	4	4
Idea Bonds	9	10	9	8	6	13
ING Bonds	16	8	8	7	9	8
KBC Debt Securities	13	12	12	11	13	10
Legg Mason Bonds	14	15	14	14	15	15
Millennium Deposit	7	4	4	2	1	1

Pioneer Bonds Plus	2	2	1	1	2	2
PKO Bonds	1	3	3	3	5	5
PZU Debt Securities Polonez	11	11	10	10	11	9
Skarbiec Bonds	12	9	13	15	14	12
SKOK Bonds	17	16	15	17	10	14
UniKorona Bonds	5	6	7	4	3	3

Source: own work.

As already mentioned, rankings in Table 2 are characterized by considerably higher changeability as compared to rankings in Table 1. The greatest improvement over the 3 years occurred for AVIVA Investors Bonds, which rose from the 15th position in the first half of 2010 to the 7th position at the end of 2012. A similarly strong rise was observed for ING (from the 16th to the 8th place). The Millennium group fund has already been discussed. In turn, a dramatic fall was recorded by Amplico Bonds (from the 6th to as low as the 16th position). A slightly smaller but still significant decrease (from the 10th to the 17th place) was also noted for Allianz Bonds.

When analysing net flow values, it can be observed that they were below zero for almost a half of the bond funds throughout the three years. Of course, that group included all entities listed as those being beyond the area of the decision-maker's interest.

While describing results of the Wilcoxon test, we drew attention to the fact that the scenarios of weights for preferences produce rankings that do not differ in a statistically significant manner. Thus, a question arises whether a certain factor (except for the decision-maker's preferences) may determine the ranking of a fund.

Funds differ in their financial potential reflected by the value of assets they hold. Therefore, we decided to check whether ranking positions are significantly affected by the fund size measured by the real value of all its assets. To that end, we decided to estimate parameters of two single-equation econometric models, one for each group of funds. Due to the fact that the explained variable is of the ordinal nature, we cannot use the least squares method. Hence, we applied an ordered probit model for ordered polynomial variables which was described in detail in [Gruszczyński 2010]. The model is a generalization of the binomial model where the variable may assume one of J levels and the levels themselves are ordered, while $J > 2$.

We present below results of the estimation – first for the stable growth and then for the bond funds:

$$\hat{RANKSW}_{it} = -0.0024 AKTR_{it} \qquad (6)$$

z = -9.124 (p=0.0000), likelihood ratio test: χ^2= 91.9602 (p=0.0000)

$$\hat{RANKOB}_{it} = -0.0004 AKTR_{it} \qquad (7)$$

z = -4.012 (p=0.0001), likelihood ratio test: χ^2= 16.1651 (p=0.0001)

Variables: RANKSW and RANKOB describe the ranking position of a given fund, whereas AKTR – the real[4] asset value expressed in millions of PLN. The estimation was performed in the GRETL package.

The negative sign of the explanatory variable parameter means that the bigger the fund (i.e. the more accumulated assets it holds), the higher it ranks. We treat that as the confirmation of reliability of multicriteria optimization results. Values of parameters of models (6) and (7) inform, however, that the impact remains slight.

Z statistics of the Wald test indicate statistical significance of both the models' parameters. Similar information is provided by the likelihood ratio test. It should be emphasized, however, that the summed up R^2 proved to be low and was 12.5% for model (6) and 21.6% for model (7). That means that the explanatory variable explains a fund's ranking position to a small degree.

To sum up, based on estimation results of equations (6) and (7), we find a statistically significant, though not very strong, impact of the fund size on its ranking position resulting from the PROMETHEE method application.

Summary

In the studied period stable growth funds pursued an investment policy that did not significantly change their ranking positions arising from the use of the PROMETHEE method. In their case, it was possible to clearly indicate both the funds that should be of interest to the decision-maker and those that were beyond the area of interest of the decision-maker. In turn, in the same period, bond funds were characterized by considerably higher changeability of their ranking positions. That may indicate the fact that the choice of portfolio components and their management did not guarantee full resistance to changes in the situation on financial markets. It is difficult to indicate as clearly other leaders of that group of funds, apart from Pioneer Bonds Plus. It is, however, still possible to identify funds that do not meet the assumed criteria.

Moreover, we find that the size of the fund affects its ranking position but not to a very large degree. It was probably fund size differences that made both the preference weight scenarios produce similar ranking lists.

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Financial situation of insurance sector for example, a Stock – Exchange Company PZU

Abstract: The insurance system is a very important element of the financial system of a country. As institutions of public trust, insurance companies play a crucial role in the process of transforming savings into investments, which directly affects the country's economic development. Maintaining the insurance sector in a good financial condition guarantees stability of the financial system and economic development of Poland.
The article aims to present the essence of operations of insurance companies as financial institutions, present their role in the economy, and describe various methods of appraising their financial condition.
In order to fulfil the above goals, a research hypothesis is put forward stating that the financial condition of the insurance sector in Poland deteriorated in the analysed period as a result of an adverse impact of turbulence in financial markets and problems in financial systems in the European Union countries.
Key-words: Insurance system, Financial ratio, Financial condition analysis, Economic value added, Stock – exchange companies.

Introduction

The insurance system is one of the key elements of the financial system of a country. Insurance companies, being institutions of public trust, play a vital role as financial intermediaries. They enable processes of converting savings into investments – both tangible and financial ones.

This study aims to characterize the functioning of insurance companies as financial institutions, present their role in the economy, and describe methods of appraising the financial condition of those institutions according to various concepts offered by specialist literature.

In order to fulfil the above goal, the author puts forward a research hypothesis according to which the financial condition of the stock – exchange insurance company PZU deteriorated in recent years as a result of adverse economic phenomena, turbulence in financial markets, and problems experienced by financial markets in some EU countries.

Financial situation of PZU Company, which is the largest insurer in market in Poland strongly, determines the efficiency of insurance sector in Poland.

1. Essence of Insurance Companies' Operations and Their Role in the Financial System of the Country

Collective investors influence the national financial system and economic development. They form a crucial element of the demand side of the financial market. Accumulated capital is invested in financial instruments, contributing to the development of the monetary market, and particularly the capital market. Both of these markets are used by companies when financing current business activities or investment ventures. Demand for capital from companies depends on various factors such as macroeconomic, line of industry and internal issues. When making a decision to finance business through the financial market the company must take into account the fact that the capital obtained must be repaid and interest must be paid in return for using this capital. Such decision should, therefore, be preceded by a survey of the market and based on reliable economic calculus.

Pursuant to the Polish applicable law insurance company is defined as "enterprise businesses for permission for personal insurance, property reinsurance contract that commits to provide in the event of the effects of random events" [The Act of 22 May 2003 on Insurance activities, Journal of Laws [Dz.U.] of 2003, No. 124, item 1151.].

Insurance took its origin from the ancient times. At the beginning of the resulting seeds called insurance business. The funds have been collected to use them to compensate for the loss of chance, which were related to the economic activity (including the risk of sinking). Next, develop a personal insurance, which were associated with security measures due to the loss of life, health or age. And the beginning of Social Security was created in medieval features and fraternities, where one of the main objectives was to provide assistance to its members due to random events. The emergence of modern social insurance is associated in particular with the nineteenth-century industrial revolution [Liszcz 1997, p. 14].

According to the Annex to the Insurance Activities Act distinguishes the apportionment of risk divisions, groups and types of insurance:

- Section I – life insurance;
- Section II – other personal insurance and property insurance.

There are five groups in life insurance system [Monkiewicz 2002, p. 31]:

- life insurance (e.g. term life and endowment, for life),
- endowment insurance,
- insurance related to insurance capital fund,
- annuities,
- accident and sickness insurance to complement the previously mentioned groups.

The insurance property and casualty stands out among other things [Monkiewicz 2002, p. 31]:

- accident insurance, including accidents at work and occupational diseases,
- illness insurance,
- casco insurance (land vehicles, rail and aircraft),
- insurance of sea and inland shipping,
- goods in transit insurance,
- insurance against damage caused by natural disasters,
- other damage to property insurance not included in other groups,
- liability insurance,
- credit insurance,
- insurance guarantees,
- insurance of financial risks,
- legal expenses insurance,
- insurance assistance.

A special role in the indirect transformation process is played by the financial market where supply of and demands for financial resources are matched. The supply side of the financial market is represented by entities having a financial surplus (savings): the financial market enables them to increase their financial resources. Those entities are referred to as suppliers of capital or investors [Wypych 2000, p. 114].

The demand side of the financial market is represented by entities seeking capital to meet their production or investment needs. Thus, they express their need for additional funds they want to use against payment for a precisely specified period of time. Those entities are referred to as recipients of capital or issuers and mainly include enterprises as well as local and central government units [Pietrzak, Polański (Eds.) 2006, p. 18].

According to specialist literature, financial intermediaries can be divided into two principal groups [Owsiak 2002, p. 224]:

- institutions accepting deposits and creating money based on those deposits (including banks),
- institutions, that create financial instruments not being money or act as non-deposit financial institutions.

The aim of the insurance societies is to provide financial protection to insured people, which enables limiting negative effects of risk. These institutions gain capital in the form of insurance premium paid by clients. The insurance holders pay premium as a way of financial protection of themselves and other people insured in case action committed takes place [Nowak 1998, pp. 151–152].

Insurance companies must be solvent. This involves their having own capital at the adequate level and conducting investment deals complying with the statutory requirements and limitations. The main aim of their investment activity is to achieve profitability with the maximum high level of safety and maintaining asset liquidity [Sułkowska 2001, p. 119].

The safety requirement makes it necessary for insurance companies to reduce the risk by diversification of the investment portfolio and high content of safe investment. Through investment the accumulated insurance capital returns to the financial system of the country and performs productive, pro-supply role.

2. Methods of Appraising Insurance Companies' Financial Situation and Sources of Data for Analysis

A reliable appraisal of the financial condition of every entity, insurance companies included, requires using financial data that provide figures necessary to calculate financial ratios suggested by specialist literature.

The fundamental legal act that specifies principles of accountancy in Poland, inclusive of insurance accounting, is the Accounting Act [The Accounting Act of 29 September 1994, Journal of Laws [Dz.U.] of 2002, No. 76, item 694, as amended]. The act lays down the principles of accountancy and the manner of the auditing of financial statements by auditors as well as rules for providing bookkeeping services. The provisions of the act are of a general nature; hence, they apply to all business entities keeping account books, while templates provided in attachments to the act differentiate between financial statements of insurance companies and those of other entities.

Next Law, concerning insurance accounting is Regulation of Minister of Finance of 28 December 2009 of the specific accounting policies of insurance and reinsurance companies [Regulation of Minister of Finance of 28 December 2009 of the specific accounting policies of insurance and reinsurance companies, Journal of Laws [Dz.U.] of 2009, No. 226, item 1825].

Financial statements of an insurance company consist of the following parts [The Accounting Act of 29 September 1994, Journal of Laws [Dz.U.] of 2002, No. 76, item 694, as amended]:

a) Profit and loss account,
b) Technical insurance account,
c) Statement of financial situation (balance sheet),
d) Statement of cash flows,
e) Statement of changes in equity,
f) Explanatory notes.

In practice, the appraisal of an insurance company financial situation uses two documents that provide necessary information, i.e. the profit and loss account and the balance sheet.

Specialist literature classifies methods of appraising insurers' financial situation into two groups:

a) Classical methods based on financial ratios,
b) Non-classical methods based on the concept of economic income.

According to M. Capiga, the five crucial areas of insurers' financial analysis include [Capiga 2010, p. 87]:

a) Level of management efficiency,
b) Profitability evaluation,

c) Level of capital adequacy (solvency),
d) Appraisal of financing structure,
e) Financial liquidity analysis,
f) Dividend Yield that is crucial information for capital market investors.

Other author of specialist literature share the above – mentioned point of view. They include M. Marcinkowska who in her book *Ocena działalności instytucji finansowych* introduces the above classification too.

Analyses in this study apply ratios of the first two groups described by specialist literature.

Indicators of group management efficiency, enabling it to assess the level of asset turnover, turnover of the equity and the ratio of gross claims and benefits paid out to collected gross written premiums.

Profitability ratios are a group of ratios defining efficiency of the insurers operations. Profitability assesses the surplus of revenues from operations over costs, i.e. the insurance company ability to generate profit. As a criterion for the insurer's appraisal, profitability is a basic method to measure efficiency of the insurers' operations.

Return on equity (ROE) – allows determining the profitability of equity, i.e. the rate of return [Iwanicz–Drozdowska 2010, p. 72].

$$ROE = \frac{NP}{E} x100\%$$

Where:
NP – Net Profit;
E – Equity.

The higher the ratio, the greater the ability to pay dividends and increase the solvency ratio, and the better the chance of developing the insurer's operations.

Return on assets (ROA) – The ratio indicates the rate of return on assets being the measure of operating efficiency that allows assessing the profit-earning capacity of assets held by the insurance company [Marcinkowska 2007, p. 323].

$$ROA = \frac{NP}{A} x100\%$$

Where:
NP – Net Profit;
A – Assets.

Return on sales (ROS) – The ratio allows determining what part of gross written premium remains in the company in the form of net profit [Orechwa–Maliszewska, Worobiej 2008, p. 85].

$$\mathrm{ROS} = \frac{\mathrm{NP}}{\mathrm{GWP}} x100\%$$

Where:
NP – Net Profit;
GWP – Gross Written Premium.

Dividend Yield (DY) – presents relation between dividend per share and market price of the share. This ratio is one of the most popular indicators used by capital market investors [Wypych 2000, p. 188]:

$$\mathrm{DY} = \frac{\mathrm{DpS}}{\mathrm{SMP}} x100\%$$

Where:
DpS – Dividend per Share,
SMP – Share Market Price.

Second group of indicators used during analyzes are management efficiency ratios.

They inform about company's performance in the area of collected and paid premiums.

First indicator is Gross claims ratio that is relation between gross claims paid and gross written premium. The lower level of the ratio means the better performance by the company [Marcinkowska 2007, p. 372]:

$$\mathrm{GCR} = \frac{\mathrm{GCP}}{\mathrm{GWP}} x100\%$$

Where:
GCP – Gross claims paid,
GWP – Gross written premium.

Second indicator from efficiency group is Claims ratio – net of insurance. The ratio shows relation between amount of claims incurred and earned premiums – net of insurance. The lower level of the ratio informs about better performance of the company [Monkiewicz, Gąsiorkiewicz, Hadyniak, 2000, p. 234]:

$$\mathrm{CRNoR} = \frac{\mathrm{CI}}{\mathrm{EPNoR}} x100\%$$

Where:
CI – Claims Incurred,
EPNoR – Earned Premiums – Net of Reinsurance.

Specialist literature offers opinions critical of the ratio analysis as the most objective method of appraising the financial condition of enterprises.

The principal objection is that the analyses use the book profit, which impacts on the way in which obtained results are perceived. It is not an economic but only a bookkeeping point of view.

Numerous objections were made concerning the weakness of the book profit and its application in the ratio analysis of enterprises' financial position. According to A. Rappaport, the most important of those include [Rappaport 1998, p. 13]:

– Impact on the financial result of alternative accounting methods used,
– Disregarding incurred risk,
– Disregarding changes in the value of money over time, which prevents the comparison of obtained results in real terms,
– Disregarding the dividend policy; hence the cost of equity in enterprises,
– Disregarding investment outlays made.

Coinciding critical comments are also offered by other authors of specialist literature. A. Rappaport's views can be found in the books by T. Dudycz entitled *Finansowe narzędzia zarządzania wartością przedsiębiorstwa* and by A. Ehrbar *Strategia tworzenia wartości przedsiębiorstwa*.

All the authors consider the method of appraising the financial situation of an enterprise based on the concept of economic income, which forms the basis for a measure called the Economic Value Added (EVA®), to be more objective.

The EVA® measure uses the Residual Income concept by Alfred Marshall. He was the first to draw attention to the defectiveness of bookkeeping measures that, when applied in determining the net profit, take only financial costs into account while completely disregarding equity costs borne by an enterprise. The Residual Income is defined as the sum of an enterprise's net profits reduced by shareholders' remuneration costs (cost of equity) [Dudycz 2002, p. 177).

The concept of the Economic Value Added was first presented by the Stern – Stewart & Co consulting company at the end of 1980 based on the earlier presented Residual Income mechanism by Marshall [Helfert 1982, p. 505].

The EVA is a measure that adjusts the earned book profit for incurred costs of equity, providing the actual value added for an enterprise.

When discussing the use of the EVA measure in the appraisal of insurers' financial situation, M. Marcinkowska emphasizes the specificity of their operations consisting in a considerable share of external capital in their financing structure. Contentious issue is the method of estimating the cost of capital. The reason is the high level of technical provisions – insurance, which is the dominant component of the liability of the insurance companies. They are associated with the portfolio of insurance and reflect the risk profile of the company. Professional recommends applying to them the same rate as the cost of equity. [Marcinkowska 2003, p. 512].

Taking into account the above-mentioned assumptions, the formula of the Economic Value Added for the Insurance Company would be as follows [Marcinkowska 2003, p. 512]:

$$EVA = NOPAT - (TEaL * Ec)$$

Where:
EVA – Economic Value Added,
NOPAT – Net Operating Profit after Tax,
TEaL – Value of the company's Total Equity and Liabilities,
Ec – Cost of the company's equity calculated as a price to book value ratio.

3. Appraisal of Financial Situation of the Warsaw stock – exchange insurance company PZU from 2009 to 2012

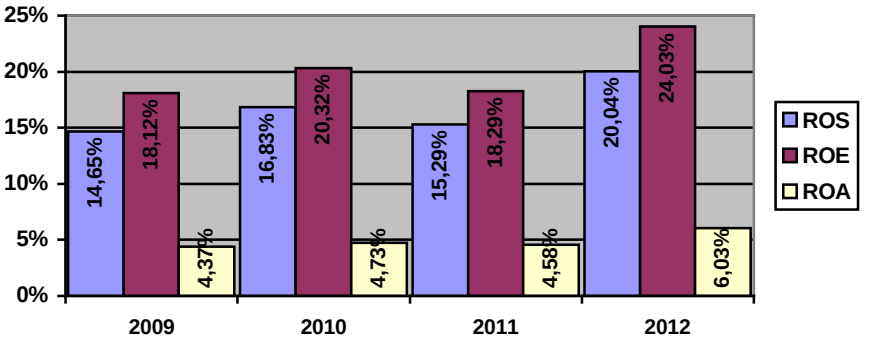
The first area of the analysis is the appraisal of profitability of the PZU Company. Values of the ratios discussed in the methods part of this study are presented below.

Table 1. Profitability ratios of PZU Company from 2009 to 2012

Ratio	2009	2010	2011	2012
ROS	14,65%	16,83%	15,29%	20,04%
ROE	18,12%	20,32%	18,29%	24,03%
ROA	4,37%	4,73%	4,58%	6,03%

Source: own calculations based on www.pzu.pl.

Figure 1. Graphic presentation of profitability ratios of PZU



Source: own work based on data in Table 1.

There was an upward trend observed in the profitability of PZU in the analysed years. It was only 2011 that saw a fall in the profitability, which was confirmed by all the applied ratios.

It should be emphasized, however, that the profitability level can be regarded as moderate as the results received for the ratios are not still above than those recommended by specialist literature.

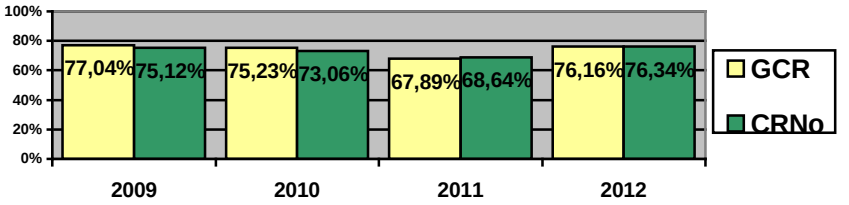
Another area of the analysis is the appraisal of the company's management efficiency. It employs ratios presented in the preceding chapter. Results of the analysis are shown in the table and figure below.

Table 2. Efficiency management ratios of PZU Company from 2009 to 2012

Ratio	2009	2010	2011	2012
GCR	77,04%	75,23%	67,89%	76,16%
CRNoR	75,12%	73,06%	68,64%	76,34%

Source: www.pzu.pl/relacje-inwestorskie/informacje-finansowe.

Figure 2. Graphic presentation of efficiency management ratios



Source: own work based on data in Table 2.

Table 3. Ratios comparison for PZU and Insurance market from 2009 to 2012

Ratio	2009		2010		2011		2012	
	Market	PZU	Market	PZU	Market	PZU	Market	PZU
ROS	12,91%	14,65%	12,45%	16,83%	10,72%	15,29%	10,59%	20,04%
ROE	20,48%	18,12%	22,53%	20,32%	19,83%	18,29%	19,59%	24,03%
ROA	4,79%	4,37%	4,75%	4,73%	4,21%	4,58%	4,29%	6,03%
GCR	81,90%	77,04%	73,58%	75,23%	74,68%	67,89%	69,65%	76,16%
CRNoR	82,62%	75,12%	71,50%	73,06%	74,30%	68,64%	68,89%	76,34%

Source: own calculations based on www.pzu.pl and www.knf.gov.pl.

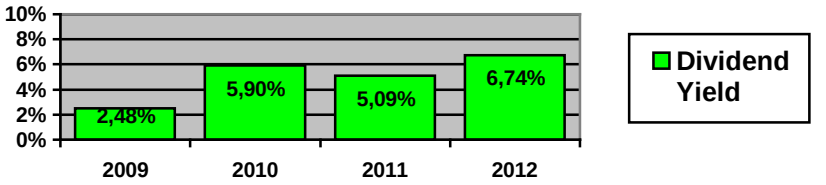
Based on the analysis of the above data, it should be stated that the management effectiveness of PZU was improving during 2009 – 2011 period, and deteriorated in 2012 year. Despite this, the ratios level should be considered as satisfactory. The situation of analyzed company is good in management

effectiveness area. Despite turbulence in financial markets of the European Union countries as well as of other parts of the world, the Polish insurance sector proved resilient to adverse effects of those events. It should be emphasized and appreciated that the Polish insurance sector is characterized by high stability and safety levels in the period of deep trouble in other EU countries (e.g. Cyprus, Greece or Spain).

Analyzing the indicators for the company to the whole of the insurance market can be noted that the level of effectiveness ratios was characterized by volatility was the fact that in the coming years once more presented to the market, and once the company PZU. Profitability ratios with the market for PZU in the period 2009–2011 were worse, but in 2012 reversed that trend and all the analyzed ratios for PZU were at a higher level than the average for the insurance market.

Another financial indicator that has been analyzed is Dividend Yield. This ratio informs about relation between dividend per share and market price of share. The level of the DY indicator is shown in figure below.

Figure 3. Graphic presentation of Dividend Yield ratio from 2009 to 2012



Source: own work based on www.gpw.pl.

The dividend yield paid by a company PZU increased by more than 4 percentage points within three years. This is positive information, which indicates that company shares are more attractive for stock – exchange investors. Increasing the dividend yield is also the result of a decision of the main shareholder during Annual General Meeting. PZU dividend is an important part of income in the Polish budget.

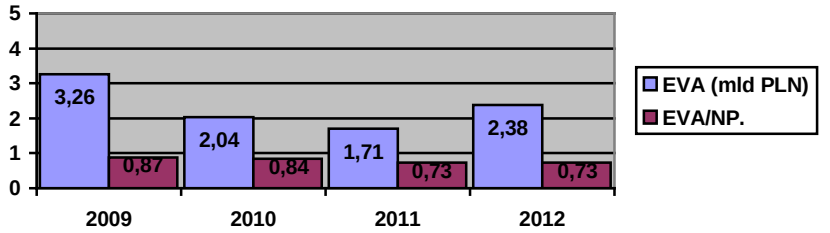
The last measure to be used to appraise the PZU Company condition is a measure alternative to financial ratios. The mechanism and essence of the Economic Value Added (EVA) were presented in the previous part of the study. Calculated results are shown in the figure below.

Table 4. Selected financial data for PZU Company

Data	2009	2010	2011	2012
NOPAT	4 565 811	3 088 085	2 956 727	4 080 198
TEaL	53 176 209	50 533 832	52 129 282	55 909 560
Ec	2,46%	2,07%	2,40%	3,04%
Net Profit	3 762 911	2 439 229	2 343 947	3 253 826

Source: www.pzu.pl/relacje-inwestorskie/informacje-finansowe.

Figure 4. Economic Value Added for the PZU Company



Source: own calculations based on data from Table 3.

Data presented in the above figure indicate that the financial condition of the company appraised by means of the EVA shows a downward trend during 2009 – 2011 period, and finally improved in 2012 year. However in the analysed period the Economic Value Added in PZU Company has decreased by nearly 1 billion PLN, which means a decrease by 27%. The ratio of the EVA to the net profit of the company should be regarded as average as it runs at the level under 80% in last two years.

4. Concluding Remarks

The insurance sector is a one of key elements of the financial system of every country. Insurance companies are institutions of public trust and play an important role in the process of transforming savings into investments.

The aim of the study, set in the introduction, was fully met. The study presented the essence and role of insurers in the financial system. It also discussed methods of appraising their financial condition as well as performed the analysis of situation from 2009 to 2012.

The research hypothesis put forward at the beginning of the study was not positively verified. Effects of the financial crisis, turbulence in financial markets, and problems experienced by insurers in the European Union countries did not significantly influence the financial situation of the PZU Company.

The level of management effectiveness should be considered good; profitability of the company runs at a moderate but satisfactory level; Dividend Yield has increased to acceptable level by investors, while the appraisal of the

financial condition employing the EVA measure enables to draw a conclusion that the financial condition of analyzed insurance company increased significantly over the studied period.

This situation strongly influences insurance sector in Poland due to the fact that analyzed entity is the largest company in the insurance market in Poland.

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Options in Corporate Finance Management

Abstract: Although there are many opinions critical of options, especially after the 2008 scandal, they are becoming increasingly popular in Poland again. Therefore, issues connected with options are not only the subject of interest in academic circles again but also arouse interest of economic entities, allowing enterprises to assess a variety of action strategies. Those instruments enable planning safeguards to protect against various negative future scenarios. Hence, it comes as no surprise that there has been an increase in the number and variety of enterprises that have accepted options as a way to plan for their future. The article provides a brief presentation of options. It also describes one of their pricing methods. Light of the foregoing has been hypothesized that 'valuation of options using mathematical calculators using the binomial model is an effective tool for supporting management positions in futures instruments'.
Key-words: corporate finance, derivative instruments, options, binomial model.

Introduction

More and more companies are facing a dilemma about how to effectively manage their corporate finance. There is an increasing number of investment solutions. Thus, it takes longer to get one's bearings on the market and choose the right offer. Challenges met by financial directors require vast knowledge and skills as decisions made mostly by financial departments greatly affect results of an enterprise's activities. Therefore, effective corporate finance management is of significant importance to operations of an enterprise. Successful corporate finance management, however, requires knowledge of basic financial market instruments. Advanced instruments of that market allow to manage specific future risks. Derivative instruments may safeguard the investor against a decrease in the portfolio value or enable to protect against the risk of adverse changes in a given exchange rate. Such instruments include standard options. The aim of the article is to present options as one of many possibilities to manage corporate finance and, in particular, corporate foreign exchange risk. Although the article is of an exclusively theoretical character, it contains a lot of information about options, presents one of their pricing models and points to some of their benefits for enterprises.

Financial Instruments

Financial instruments should be treated as a separate specific form of money or as a separate contract between parties regulating their bilateral payments. According to the simplest definition, it can be said that financial instruments are liabilities to one enterprise and assets to the other. They can be a kind of "I owe you" or a share in the property of another economic entity operating on the market. Hence, in any case, financial instruments are liabilities of their issuer to their holder. They can be grouped according to various criteria, for example [http://g.m.statystyk.w.interia.pl/ stock/instr.html]:

Applying the ownership criterion, they are categorized into *debt* and *equity* instruments such as: bank deposits, bills of exchange, asset backed bonds and shares.

Using the income generation criterion, instruments are divided into: *generating fixed income* (e.g. bonds) and *generating variable income* (shares).

In turn, according to the criterion of time, they can be classified into: *short-term* (of the initial maturity term up to 1 year), *medium-term* (of the initial maturity term from 1 year to 5 years) and *long-term* (of the initial maturity term over 5 years).

Taking into account the character of their issuer, they are divided into: *direct* (issued by non-financial economic entities, local authorities, state authorities, governments) and *indirect* (issued by all financial institutions).

Another type of financial instrument is the so called derivative instrument that should be understood as a financial instrument created based on structural characteristics of a specific underlying instrument which, through its market value, determines the value of the derivative instrument. Such instruments are also called *derivatives* or *off balance sheet instruments*. Thus, they are financial instruments whose price directly or indirectly depends on, or "derives from", the price of securities (shares, bonds) or other instruments (exchange rates, stock exchange indices) [Tarczyński, Zwolankowski 1999, p. 182].

Options

An option is a contract conferring on its holder the right to take a specific action within specific time. It is the right to buy or sell shares or another financial instrument at a certain price [Koch 1997, p. 165].

In general, options are divided into [Kolb 1997]:

- call options, i.e. the right to buy a share or another asset at a specified price in the future. Hence, they enable the holder to buy shares at a specified price within specified time.
- put options, i.e. the right to sell a share or another financial instrument at a specified price within certain time, providing protection in the event the value of that instrument declines. Thus, they allow the holder to sell shares at a specified price within specified time when it is profitable. Making use of that right is called "exercising" or "settling" an option and is the right of the holder of the option, whereas issuing an option entails undertaking an obligation [Jajuga, Jajuga 1996, p. 181].

Therefore, an option is a kind of a contract between two parties, i.e. the holder and the issuer of the option. It should, however, be mentioned that it is an asymmetrical contract, which means that rights and duties of the buyer and seller are not identical. It is simultaneously the right, but not the duty, to buy or sell the whole package, e.g. shares at a price specified in advance, due to which the value of an option is always non-negative [Siegel 1997, p. 452]. The exercise (strike) price of an option is also connected with an additional premium if prices of exercising call options are close to the value of shares [Soroczyński, Stachowicz 1997, p. 55]. Thus, share options can be defined as a financial instrument that grants the holder the right to buy or sell shares within specified time and at a specified price, or possibly the right to get an amount being the settlement of a difference between the value of shares on the option exercise date and the price specified in the contract, while the holder of the option is obligated to make a payment for the gained right, called an option premium, to the issuer of the option who is obligated to exercise the option at the request of the holder [Zarębska 2005 quoting: Olik 2002, p. 137].

Although options are often presented as instruments that carry very high risk, one has to concede that they allow to invest very safely but may also serve to create extremely risky strategies. However, it is not options that should be blamed but a specific investor who makes a choice. In general, it is assumed that derivative instruments, including options, are very flexible instruments and do not need to involve high risk at all.

Types of Options

Applying the criterion of option exercise time, Giruć divides them into three types [Giruć 2000, p. 255, Hull 1994]:

1. American options – the right to obtain the underlying instrument can be exercised at any time from the time of buying the option to its expiry,
2. European options – the right to obtain the underlying instrument can be exercised only on the option expiry day,
3. Asian options – the settlement price is the mean price of an asset within a certain time period (it usually applies to goods).

In turn, Mitręga distinguishes between [Mitręga 2000, p. 34]:

1. share options – where the underlying instrument is a share,
2. currency (FX) options – where the underlying instrument is the currency of another country,
3. interest rate options – where the underlying instrument is an interest-bearing security, e.g. bond,
4. index options – where the underlying instrument is a market index. That means that on the exercise date no physical delivery of the underlying instrument, i.e. a market index, can be made. The holder of an index call option, in the case of its exercise, gets a sum of money proportionate to the difference between the value of the index at the exercise time and the strike price. In turn, the holder of an index put option, in the case of its exercise, gets a sum of money proportionate to the difference between the strike price and the value of the index at the exercise time. Thus, an

option, if it is a call option, will be exercised when the value of an index is higher than the strike price and, if it is a put option – when the value of an index is lower than the strike price.

When listing various kinds of options, it is also worth mentioning commodity options occurring on commodity markets, and in particular, on commodity exchanges. The principle of their operation is the same as that of financial instrument options.

Along with financial options, Jajuga also mentions real options [Jajuga 2002, p. 75]. They are established on capital investments or assets that comprise them, and thus are connected either with assets, and most often make the operation of an enterprise more flexible, which is usually associated with the increased value of the enterprise, or with liabilities, and affect the cost of an enterprise's capital, and thus its value.

Classic examples of real options are [Amram, Kulatilaka 1999, p. 95]:

Deferment option is connected with the choice of the time to start an investment project. When deferring carrying out an investment project, it is possible to find out how factors affecting the value of the investment project change. If the investment project is to be successful, a delay means deferment of first proceeds. On the other hand, waiting may prevent making a mistake when the possible undertaking fails.

Growth option allows to expand operations. In that case it is necessary to carry out an initial investment project in order to be able to expand operations by adding new products in the future.

Exit option consists in considering, in one's calculations, possibility to sell a functioning undertaking or fixed assets used in an undertaking if the situation turns out to be unfavourable.

Staging option is associated with carrying out a consistent undertaking where each stage is dependent on the preceding one.

Flexibility *option* allows to take advantage of changing economic conditions and changes in cost relations among different regions or countries, as well as adjust output to the needs of the local market.

Operating option is connected with starting an activity, e.g. production. Setting up a plant, however, also generates an option to expand production as well as a flexibility option or option to abandon production.

Learning option is associated with possibility to undertake a project in stages and make decisions on further actions based on earlier collected data.

Option Value

An important issue in investing in options is to determine their value. The value is affected by the following factors [Jajuga, Jajuga 1996, p. 189]:

1. exercise (strike) price,
2. price of an underlying instrument,
3. time period to an option expiry date,
4. volatility of prices of an underlying instrument,
5. risk-free rate of interest.

In the case of a call option, the exercise price negatively affects the option value; hence, the higher the exercise price, the lower the option value.

A higher exercise price simply means a lower yield for the option holder at the exercise time. It is the other way round for put options.

The price of an underlying instrument, ceteris paribus, positively affects a call option value but negative affects a put option value. In the case of a call option, an increase in the price of the underlying instrument means standing a better chance that the current price of the underlying instrument on the market will be higher than the strike price at the exercise time. Then, the option will be exercised and will produce a yield for the holder. On the other hand, in the case of a put option, an option will be exercised and will produce a yield for the holder, when the price of the underlying instrument falls, which will increase a chance that the current price of the underlying instrument on the market will be lower than the strike price at the exercise time.

The duration of the time period to the option expiry date, ceteris paribus, positively affects the value of both a call and put option as the longer the time to the option expiry date, the better the chance that it will be exercised at the price at the given time, i.e. it will simply become profitable.

The volatility of prices of an underlying instrument, ceteris paribus, positively affects the value of both a call and put option as high volatility means that there occur prices considerably higher (in the case of a call option) or considerably lower (in the case of a put option) than the mean price of the instrument, which will increase the yield of the option holder in both the cases.

The risk-free rate of interest, ceteris paribus, positively affects the value of a call option and negatively affects the value of a put option. A rise in the risk-free rate of interest has an effect similar to a fall in the exercise price because when the interest rate rises the current, i.e. adjusted or discounted, value of the exercise price falls, which means an increase in the call option value and a decrease in the put option value.

There are also several other factors that influence the value of an option. One of those can be a dividend. A rise in the dividend results in a fall in the call option value and a rise in the put option value because, e.g. payment of the dividend decreases the value of the share and has the same impact on the option value as a fall in the price of the share [Zarębska 2005].

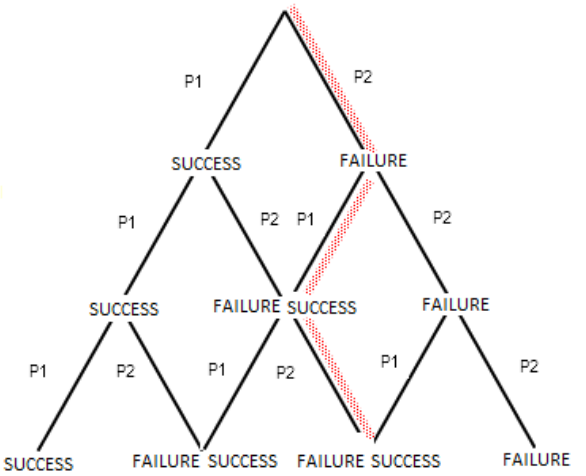
Options Pricing Methods

A very important element in investing in options is their pricing that allows to receive a true value.

The estimation of the option value is a vital step for the investor, considering the rationality of decision-making. Developed models and methods can be of assistance in that scope. Along with the Black-Scholes model known to everyone, the specialist literature mentions many other methods and models used in option pricing. Those are, for example: binomial method, finite difference method, Monte Carlo method, recursive method or method of mirror images. Due to the length of the article, the first of the listed methods will be presented, i.e. the binomial model. It is one of the simplest ways of option pricing. An instruction how to build the (Jarrow and Rudd (JR)) model was

provided in a quite detailed manner in an article entitled *Option pricing according to the binomial tree algorithm* [Controlling 10/2010].

Diagram 1. Binomial tree model



Source: [Controlling 10/2010].

The model is based on an assumption that both a fall and a rise are possible with equal likelihood, i.e. 50%. Values of rises and falls are described by multipliers defined as follows:

$$w = e^{\left(\left(r-q-0{,}5\sigma^2\right)k+\sigma\sqrt{k}\right)}$$

$$s = e^{\left(\left(r-q-0{,}5\sigma^2\right)k-\sigma\sqrt{k}\right)}$$

Where:
w-rise
s-fall
r-market interest rate
q-expected rate of dividend on a share
σ-price volatility
k-step size in years (option lifespan divided by the number of analysis steps)

While analysing a single path to arrive at a result in 9 steps, we can receive a result being the product of the initial value of nine falls or rises and nine likelihood ratios. For example, a path leading to the maximum value will be equal to the price of a share at the current time multiplied by the rise multiplier (w) raised to the 9th power and rise likelihood (always 0.5 for JR), also raised to the 9th power.

The author advises that, when analysing a binomial tree, all possible paths to arrive at a specific result should be explored. The paths can be defined as a combination of the number of rises in the number of steps. Thus, the following ought to be considered in the above manner:

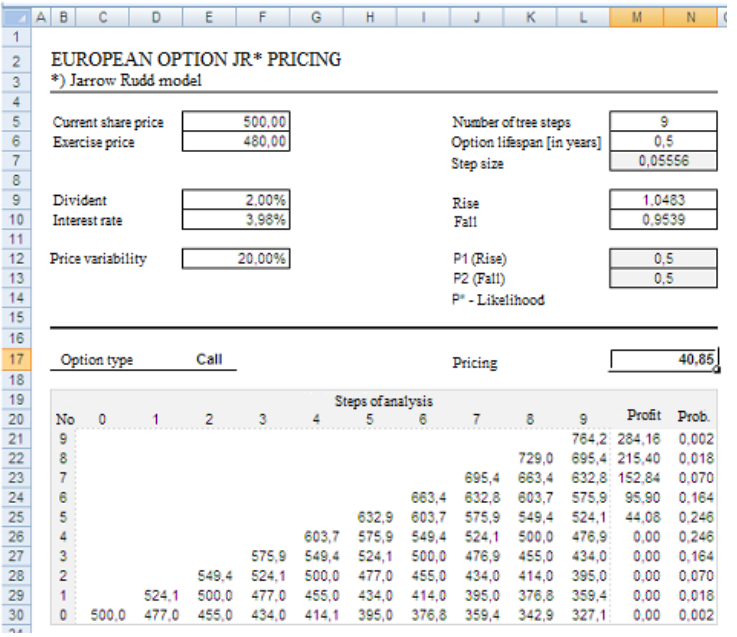
a. gain resulting from 9 consecutive rises as in the example above,
b. gain (loss) resulting from 8 rises and 1 fall,
c. gain (loss) resulting from 7 rises and 2 falls,
d. gain (loss) resulting from 6 rises and 3 falls,
e. gain (loss) resulting from 5 rises and 4 falls,
f. gain (loss) resulting from 4 rises and 5 falls,
g. gain (loss) resulting from 3 rises and 6 falls,
h. gain (loss) resulting from 2 rises and 7 falls,
i. gain (loss) resulting from 1 rise and 8 falls,
j. gain (loss) resulting from 9 consecutive falls.

While there is only one path leading to extreme results (only falls or only rises), combinations of paths lead to the other results, e.g. 126 different paths lead to result (e). Their number is computed based on the formula for the combination of k-element subsets in the n-element set (l):

$$l = \frac{n!}{k! \cdot (n-k)!}$$

Hence, it is possible to determine the likelihood of occurrence for each of the expected results as the product of the number of paths (combinations) and the likelihood raised to the 9th power. Knowing the expected results (gains or losses) and their likelihoods, we receive the random variable distribution. Assuming that the expected value of such distribution is the sum of the products of the expected result and its corresponding likelihood, finally, the expected gain should be discounted as at the present day, taking into account constant capitalisation, to receive the price of an option to be appraised.

The author also gives an example of European option JR pricing in an MS Excel spreadsheet [Controlling 10/2010]:



EUROPEAN OPTION JR* PRICING

*) Jarrow Rudd model

Current share price	500,00	Number of tree steps	9
Exercise price	480,00	Option lifespan [in years]	0,5
		Step size	0,05556
Divident	2,00%	Rise	1,0483
Interest rate	3,98%	Fall	0,9539
Price variability	20,00%	P1 (Rise)	0,5
		P2 (Fall)	0,5
		P* - Likelihood	
Option type	Call	Pricing	40,85

	Steps of analysis											
No	0	1	2	3	4	5	6	7	8	9	Profit	Prob.
9										764,2	284,16	0,002
8									729,0	695,4	215,40	0,018
7								695,4	663,4	632,8	152,84	0,070
6							663,4	632,8	603,7	575,9	95,90	0,164
5						632,9	603,7	575,9	549,4	524,1	44,08	0,246
4					603,7	575,9	549,4	524,1	500,0	476,9	0,00	0,246
3				575,9	549,4	524,1	500,0	476,9	455,0	434,0	0,00	0,164
2			549,4	524,1	500,0	477,0	455,0	434,0	414,0	395,0	0,00	0,070
1		524,1	500,0	477,0	455,0	434,0	414,0	395,0	376,8	359,4	0,00	0,018
0	500,0	477,0	455,0	434,0	414,1	395,0	376,8	359,4	342,9	327,1	0,00	0,002

Input data concerning parameters of the analysed share are introduced to the E5, E6, E9, E10, E12 cells. The number of steps of the analysis (9 in this case) and the time period after which the option is exercised (half a year in this case, i.e. 0.5) are introduced to the M5 and M6 cells.

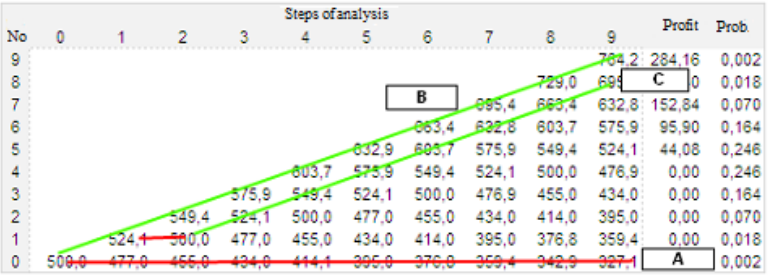
The M12 and M13 cells contain likelihoods of a rise and a fall in the share price, which, for the JR model, are always 0.5.

Rise and fall multipliers are described by MS Excel functions, according to the earlier presented formulas:

W=M9=(=EXP((E10-E9-0.5*E12^2)*M7+E12*SQRT(M7)))
S=M10=(=EXP((E10-E9-0.5*E12^2)*M7-E12*SQRT(M7)))

The EXP function (i.e. e to the nth power) and the “SQRT” function, giving the value of the square root, should be used.

The calculation is performed in the matrix determined by the range of the C30:L21 cells, where consecutive columns are consecutive steps of the analysis (tree), while rows are the number of rises in share prices. The analysis starts in the C30 cell where reference to the current price of the share on the market (E5) should be introduced. The formula used in the spreadsheet should calculate the value of the price in such a way so that, as a result of a horizontal shift to the right, it considers a fall in the price and, as a result of a diagonal shift upwards, it considers a rise in the share price.



As for the selected three example paths: the A path leads solely through falls, the B path – solely through rises, and the C path – through one rise (0,0) to (1,1), one fall (1,1) to (1,2) and 7 consecutive rises. In order to describe the above with one MS Excel function, the following notation should be used:

Function	Description
=JEŻELI($B30<D$20;	If the number of steps exceeds the number of rises
M10*PRZESUNIĘCIE(D30;0;-1);	Calculate the price as the product of the fall multiplier and the price in the preceding step
JEŻELI($B30=D$20;	If not, check whether the number of steps equals the number of rises
M9*PRZESUNIĘCIE(D30;1;-1)	If so, calculate the price as the product of the rise multiplier and the price in the preceding step before the fall – a shift of an index downwards and to the left by one index
;””))	Enter an empty field in other cases

In such a way, we define the matrix algorithm with the function. The same function can be used for a matrix with a bigger number of steps. Then, the result will be more precise. In the above example, it was assumed that, within the lifespan of the option, it will only come true nine times whether its price rose or fell.

According to the above example, the status in the L column after nine steps, i.e. at the option exercise time, is important. It ought to be determined whether there is a gain or not. We do not report a loss – we identify such a possibility as 0.

Now, an additional parameter should be introduced, i.e. identification whether we calculate a put or a call option. The selection field is defined in the E17 cell, using data correctness analysis.

Depending on the option type, we categorize a gain differently. For a call option, a gain will always occur if the share price exceeds the option exercise price; for a put option – always when the share price is lower than the option exercise price. To make gain calculation depend on the parameter in cell E17, we use the following formula in the M column:

=IF(E17="Call";MAX(L21-E6;0);MAX(E6-L21;0))

Thanks to that, we will get a series of expected gains in column M, depending on whether we examine a call or a put option. Assuming earlier that the option price is the expected value of the random variable, we need to assign likelihood parameters to each result. In column N, we use the following function for the combinations and product of nine consecutive likelihoods:

=M12^M5*COMBIN(M5;B21)

For example, for the result in the L21 cell, to which one path leads, the likelihood value will be the lowest – equal to the product of nine consecutive likelihoods (p to the 9th power) and the number of combinations that equals 1.

Finally, in order to calculate the option price, we need to use the "SUMPRODUCT" function to compute the expected value of the random variable (the value of the expected gain) and discount that value as at the present day using the discount factor:

$$\text{disc} = e^{-r \cdot t}$$

Where:
r – discount rate
t – option lifespan

As the Excel "Option Pricing" function, it takes the following form:

=SUMPRODUCT(M21:M30;N21:N30)*EXP(-E10*M6)

As already mentioned, the binomial method is applied in the pricing of most derivative instruments that rely on shares whose prices change according to the binomial model. In practice, it is used, in particular, in option pricing. It should be assumed, however, that option pricing employing the binomial model regrettably provides approximate values of the future price.

Reasons for and Advantages of Using Options

Running one's own firm is often associated with making transactions in foreign currencies. That, in turn, entails significant risk. Practice shows that options rank second, following forward contracts, as an instrument applied to limit foreign exchange risk. Depending on the size of an enterprise, different

motives behind options use are specified [See. Cuthbertson, Nitzsche 2006, p. 19–21]. For smaller enterprises, it is a psychological motive (striving to minimize the owner's risk), for larger ones – more of an economic motive (limiting operating result fluctuations). Research proves that the bigger the enterprise, the higher the likelihood of risk estimation and management. It is also connected with reduced financial limitations and reduced cash flow available to the enterprise. Likelihood of using options is also higher for exporting enterprises [Tymoczko 2009, p. 71, 86–88].

Enterprises applying that kind of instruments see that the possibility to invest in derivative instruments offers even greater opportunities to create diversified investment strategies. All strategies connected with a call or put option can be used to improve financial leverage, protect against risk or increase rate of return. That can be achieved through the skilful issuing of call options. Additionally, buying put options can serve to safeguard against the loss of unrealized gains from invested capital [Zarębska 2005].

Summary

Money resources of an enterprise may occur in such forms as: amounts in cash in the company (it is the most liquid item but it yields no gain); cash in current bank accounts on which banks pay low interest usually below the inflation rate; term bank deposits allowing to get higher interest which can be considerably reduced if the deposit is prematurely terminated.

Management of resources in those forms often hinders the ability to effectively manage money resources of an enterprise. Most of those limitations can be avoided by using the so called options. They can provide a perfect tool in managing, especially, foreign exchange risk. It should be emphasized, however, that their improper use may result in financial disasters as investing in forward contracts, options in that case, is also associated with risk, especially in the first period of trading in options, where liquidity risk may occur. Low activity and low involvement of market participants can make bigger transactions impossible or entail a significant change in rates. Another threat can be market risk increased by the financial leverage effect. That may result from the fact that the initial investment value is low as compared to the value of an underlying instrument. Other examples are risks associated with the passage of time and transaction costs. That is explained by the fact that an option price depends, among others, on time that remains to the option expiry and thus, as the option expiry date gets closer, the option value may decrease even if the price of the underlying instrument does not change, which means that the passage of time acts to the disadvantage of call option buyers and put option buyers.

Despite the listed risks, derivative instruments, options included, are increasingly used by corporate managers who perceive the instrument of an option as a kind of policy.

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The use of accounting tools in the assessment of enterprise financing policy – debt and liquidity

Abstract: The article is devoted to the use of accounting tools in the assessment of financial policy of enterprises in the financial crisis. The purpose of the article was to show the impact of financial structure on the financial liquidity of chosen similar firms.
The study hypothesized that during financial crisis, a better financial position in terms of liquidity have firms, which limit the level of short – term liabilities in financing short – term assets. To verify the hypotheses, the analysis of documents (financial statements) and debt and liquidity ratios were used[1].
Key-words: accounting, debt, liquidity, financial crisis.

Introduction

This study is devoted to the use of accounting tools in the assessment of financial policy of companies operating in the economic downturn. Selecting the structure of financing the business carries significant consequences for financial strength, especially in times of crisis. The article focuses on the evaluation of selected approaches to financing, specifically the consequences of a specific policy of financing fixed and current assets for financial liquidity

The article aims to show the impact of financing fixed and current assets on the financial liquidity of the studies entities. The objective is achieved by the analysis of three companies. The selected entities are medium-sized manufacturing and trading enterprises in a similar line of business and a similar balance sheet total.

[1] Current Ratio = Current assets/Current liablilities; Quick Ratio = (Current assets – Inventories)/Current liabilities, Money Ratio= Cash and equivalents/Current liabilities; Debt Ratio = Total debt/ Total passives; Debt to equity ratio = Total liabilities / Total equity; Long-term debt ratio = Long-term debt / Total equity.

Each company uses a different policy of financing the assets, which is reflected in their different financial situation.

The study hypothesizes that units which limit funding of current assets with borrowed capital in times of crisis, are in a better financial position in terms of liquidity.

To verify the hypothesis, analysis of documents (financial statements) of the studies companies was used. The reasoning used accounting tools such as debt ratios and liquidity. Literature on the subject was also used.

Negative consequences for companies in times of crisis

The economic slowdown adversely affects the company, which is evident in most industries. It is particularly important that in times of economic crisis companies keep previously worked out financial condition [Woroniecki, Prysiński 2012, pp. 329–334].

Most often a number of negative factors occur during crisis, among which are: low level of cash in companies, unfavorable currency conversion, increasing level of overdue receivables, limited access to external financing, decreased revenue, and consequently decrease of liquidity and often a need for excessive indebtedness.

The above-mentioned phenomena are often cited by entrepreneurs as major negative consequences of the crisis. The following reflections focus only on the relationship between the structure of financing and liquidity, but this structure is often forced by the factors listed above.

There are many factors that cause crisis and its consequences, but despite some positive effects, crisis is rather clearly recognized as a negative phenomenon. The following table summarizes the types of crises and the criteria for their formation.

Table 1. Types of crisis and the criteria for their formation

Criteria	Type of crisis
According to the pace of its course and duration	– immediate crisis – characterized by lack of time for research and planning. Decisions must be made very quickly, – sustained crisis – it may last for months or even years. A long duration is not conducive to taking effective actions to deal with the crisis. Typically, the boards and directors of companies take a position of passive waiting, hoping that the crisis will pass by itself. It is caused by gossip, rumors, speculations communicated mouth-to-mouth or publicized by the media.

According to its source	– internal crisis is caused by factors occurring within the company, such as poor management and wrong financial policy of a company, – External crisis is caused by factors outside of the organization that reflect the economic situation of the state or may be related to natural environment.
According to its effects	– destructive crisis causes destruction of the organization, such as its collapse. – creative crisis leads to the further development of enterprises.
According to the factors causing it	– real crisis is caused by various factors and usually leads to many problems in the company, – virtual crisis is created artificially in order to bring change and, consequently, to develop and increase the enterprise's revenues.

Source: Based on: [Barczak, Bartusik, p 15].

The importance of liquidity during the crisis

The concept of liquidity is the ability of the company to cover its current liabilities on time [Czekaj, Dresler 2005, pp. 210]. Liquidity can be measured both statically and dynamically, and the basic tools to be used are indicators of current liquidity (Current Ratio), quick liquidity (Quick Ratio) and cash liquidity (Money Ratio) [Gołaszewski, Urbanek, Walińska 2001, p 43]. Current Ratio is calculated as the ratio of current assets to current liabilities and should be in the range of 1.2–2.0 [Libertowska 2010, p 85]. Quick Ratio is the ratio of current assets, less average inventory, to current liabilities. The default value of this ratio should be between 0.8–1.0.

The ratios should not be too high or low in relation to those values, otherwise it proves inefficient use of resources [Czekaj, Dresler 2005, pp. 211].

The level and stability of liquidity determines the position of the company in the short term and on the possibilities of growth and surviving in the longer term. To prevent the loss of liquidity, companies must properly control the flow of money and choose the cheapest ways to restore balance in financial resources. [Sierpińska, Jachna 2004, pp. 162–163].

The consequence of loss of liquidity is less flexibility in making financial decisions and the ability to control the financial result. The negative effect is also a decline in sales and an increase in operating and financial expenses, resulting in a decrease of financial results. The drop in financial results of the company causes lower ability to service existing debt and incur new obligations. On the other hand, the company with high liquidity have full access to borrowed capi-

tal, which reduces financial costs. There is also a possibility of widespread crediting and flexibility in the use of instruments of crediting policy.

Financing structure

This is another matter that in times of economic downturn can have a strong impact on companies. The financial structure presented in the balance sheet liabilities shows the relationship between own and borrowed sources of financing the resources. There should be a correct proportion between those values, as a sudden fall in equity in relation to external sources of financing may cause payment difficulties, and thus cause the risk of insolvency. Analysis of the capital condition includes [Nowak 2008, p 92]:

- assessment of the dynamics of individual components of capital,
- assessing the capital structure,
- assessing the capital-asset structure.

Financial leverage ratios, also called debt indicators, are used to identify sources of financing the business. The most important indicators are [Ostaszewski (ed.) 2008, pp. 404]:

- debt ratio,
- debt to equity ratio,
- long-term debt ratio.

Debt ratio is the ratio of total debt to total liabilities, which equals the value of assets. The higher this ratio, the higher the share of borrowed capital in the financing of the company. Creditors expect that this ratio be not higher than 50%, because the assets of the company can reduce its value to half, before they threaten the safety of external capital. Value greater than 0,50 may result in failure to repay debt. This ratio should fluctuate in the range of 0,57–0,67.

Debt to equity ratio is measured as the ratio of liabilities to equity and shows the share of debt in relation to equity. This ratio is always higher than the total debt ratio, since equity is always less than the sum of liabilities, unless the level of obligations is equal to zero, which is a very rare situation, for example because of obligations to employees. Consequently, a smaller base gives a higher ratio. It is important that the debt to equity ratio does not exceed 100%, then the overall debt does not exceed 50%.

Long-term debt ratio shows the relationship of long-term debt to equity and indicates the amount of long-term debt per every currency unit of equity in the company. Long-term liabilities are long-term loans, issued bonds and other debts whose payback period is longer than one financial year. The satisfying level of this ratio should be no greater than 0,5. A reasonable value of this indicator should be in the range of 0,5–1,0. Companies with a higher ratio of long-term debt to equity are considered to be overindebted [Sierpińska, Jachna 2004, p 168].

Strategies for business financing

It should be noted that although there are a number of financing strategies, certainly two main ones are considered to be leading. These are:

– conservative strategy,
– aggressive strategy.

Conservative strategy means reducing the share of short-term debt in the structure of financing to less than 50% of total liabilities. This means minimizing the short-term credit. Often, it also resignation of long-term credit and replacing it with own funds. This reduces the threat of insolvency, but instead requires a high rate of return, which will compensate for the cost of own equity involvement.

Aggressive strategy means increasing the participation of borrowed capital at the cost of equity, which is reflected in more than 50% share of liabilities. This leads to increased risk of insolvency, which in turn affects the higher expected rate of return [Jaworski 2013, pp. 6–7].

As it is generally known, each of these financing strategies has as many supporters as opponents. However, the practice shows that companies using aggressive financing strategy can expect additional benefits resulting from the reduction of the tax base, which is due to increased costs, primarily financial (leasing, interest on loans, etc.). The higher the tax rate, the greater the tendency for borrowing. These companies, however, are characterized by a high degree of risk of insolvency; it is a source of rising credit costs.

It should be noted that companies, despite the adoption of general financing strategies, often have a different approach to the policy of financing fixed and current assets. The key distinction here is the expected useful life of assets.

Debt and liquidity of the studied units

The following is a brief description of debt and liquidity of the three analyzed companies. Each of the companies have a separate policy of financing fixed assets and current assets, which is reflected in the level of liquidity.

Company A

The following table shows the debt ratios of Company A based on the financial statements (see Table 2).

Table 2. Debt indicators of Company A in the years 2009–2011

Specification	2009	2010	2011
Debt ratio	0,37	0,47	0,51
Debt to equity ratio	0,59	0,95	1,02
Long-term debt ratio	0,17	0,46	0,44

Source: Own calculations based on financial statements.

Debt ratio in the analyzed company increases in value every year, which means a higher share of borrowed capital in total liabilities. It can be said that a large part of the business assets is covered by borrowed capital. In the first year, the ratio was 0,37, and it increased in the following years until it exceeded 50% in 2011 (0,51).

Debt to equity ratio, also showed an upward trend, which is standard, and in 2011 it was at 102%. It is a limit for this indicator and means that the company has a level of obligations equal to its equity capital.

Long-term debt ratio showed an upward trend over the analyzed period, but in the last two periods it increased significantly, from 17% in 2009, to 46% in the following year. In the last year, the rate was 44%.

Liquidity ratios calculated on the basis of financial statements of Company A are presented in the table below (see Table 3).

Table 3. Liquidity ratios of Company A in the years 2009–2011

Specification	2009	2010	2011
Current Ratio	1,56	1,55	1,50
Quick Ratio	1,41	1,40	1,40
Money Ratio	0,15	0,20	0,22

Source: Own calculations based on financial statements.

In the analyzed period, the current liquidity ratio is slowly reduced. This is not a significant decrease, however, proceeds from year to year. This is not the situation with the Quick Ratio, which still remains at the same level. This means that the analyzed company reduces inventory levels.

Te money ratio acts yet differently as it which increases year by year. This means that the company has growing cash resources.

Overall, the entity has improved liquidity as the Money Ratio increases, and the Quick Ratio remains unchanged. Decreasing Current Ratio comes from the reduction in the level of inventories.

Conclusions for Company A:

- Analysis of the financing structure shows an increase in total debt,
- Long-term debt increases because the company finances its non-current assets,
- Quick Ratio remains at the same level, and the Current Ratio is reduced, which means a decrease in inventories,
- Reduction in inventory frees up cash, which is reflected in the growth rate of cash liquidity,
- The company does not finance operations with borrowed capital.

Company B

The following table shows the debt ratios of Company B calculated on the basis of the financial statements (see Table 4).

Table 4. Debt indicators of Company B in the years 2009–2011

Specification	2009	2010	2011
Debt ratio	0,13	0,07	0,04
Debt to equity ratio	0,15	0,08	0,04
Long-term debt ratio	0,06	0,05	0,05

Source: Own calculations based on financial statements.

Company B, as shown in the above table, does not use nearly any borrowed capital. Facing the financial crisis, the company decided to limit the use of credit from 13% in 2009 to only 4% in 2011. Debt to equity ratio has also been automatically reduced. Long-term debt remains at the same low level of 5%.

Liquidity ratios calculated on the basis of audited financial statements of Company B are shown in the table below (see Table 5).

Table 5. Liquidity ratios of Company B in the years 2009–2011

Specification	2009	2010	2011
Current Ratio	1,56	1,98	1,87
Quick Ratio	1,23	1,49	1,25
Money Ratio	0,82	1,2	1,2

Source: Own calculations based on financial statements.

Current Ratio and Quick Ratio of Company B remains quite high in the whole analyzed period. In 2010 there was a slight increase in both indicators, but at other times they remain at a similar level. Cash liquidity, in turn, hit a surprisingly high value, surpassing the liquidity not only other companies, but also exceeding the typical values for this indicator. Company B even has excess cash liquidity.

Conclusions for Company B:

- Analysis of the financial structure indicates a minimum share of total debt,
- Long-term debt remains at a very low level and is only used to finance fixed assets,
- Current Ratio and Quick Ratio remain at a similar level, and cash flow indicates excess cash,
- Inventory levels remain at a similar level,
- The company does not finance operations with borrowed capital.

Company C

The following table shows the debt ratios of Company C calculated on the basis of the financial statements (see Table 6).

Table 6. Debt indicators of Company C in the years 2009–2011

Specification	2009	2010	2011
Debt ratio	0,6	0,6	0,7
Debt to equity ratio	1,5	1,5	2,3
Long-term debt ratio	0,1	0,1	0,1

Source: Own calculations based on financial statements.

Debt ratio is very high in the years 2009–2010, and in 2011 it exceeds the standards described above, reflecting the increasing financial risk. Company C continuously runs into debt.

As a result, debt to equity ratio shows that in the first two years the company covered the debt with only two-thirds of equity, and in 2011, the debt level is more than twice the equity. In terms of the financing structure, the analyzed company is moving towards bankruptcy.

At the same time, long-term debt ratio is very low, which means that most of the debt is short-term. This situation clearly indicates the difficulties in financing current assets.

Liquidity ratios calculated on the basis of audited financial statements of Company C are presented in the table below (see Table 7).

Table 7. Liquidity ratios of Company C in the years 2009–2011

Specification	2009	2010	2011
Current Ratio	1,2	1,4	1,5
Quick Ratio	0,74	0,54	0,42
Money Ratio	0,01	0,01	0,01

Source: Own calculations based on financial statements.

Current Ratio of Company C increases throughout the analyzed period, so apparently the payment situation seems to be stable, but the Quick Ratio indicates that the company is unable to pay its obligations. This is connected with the discussed above state of financing of the company. Additionally, a confirmation of this is a disastrously low level of cash liquidity, as throughout the whole period it indicates that the unit is able to handle only 1% of its current liabilities using cash resources.

Liquidity analysis indicates that Company C has low liquidity, which is caused by surplus inventories (this can be seen in the discrepancy between the current liquidity and quick liquidity in all years).

Conclusions for Company C:

- Analysis of the financial structure shows an increase in total debt, while in the last period its level is so high (70%) that it threatens the financial stability,
- Long-term debt remains at a minimum level, and the total debt is increasing, which means that the current assets are financed by borrowed capital,
- Quick Ratio decreases, and the Current Ratio increases, which means the increase in inventories,
- Increase in inventories freezes funds, which is reflected in a very low level of cash liquidity,
- The company finances its operations with borrowed capital.

Conclusions

The conducted study shows that the application of accounting tools mentioned above allows not only to assess the financial situation of the analyzed companies, but also to work out conclusions for them for the future. The study hypothesized that units which limit funding of current assets with borrowed capital in times of crisis, are in a better financial position in terms of liquidity. From the conducted study it can be concluded that Company B is in the best situation, as it practically does not use external capital financing in crisis. This company has the highest liquidity ratios, even cumulating excess cash, which it justifies with the crisis. In the case of the other two entities, there are clear differences in the financial position, as Company A, although quite heavily in debt, does not finance current operations with borrowed capital, only fixed assets. This results in stability in term of liquidity. On the other hand, Company C is even more indebted, but it is mostly short-term debt, resulting in a continuous lack of cash.

Companies selected for analysis represent a typical behavior of a larger study group, so there is the possibility of drawing conclusions for a larger number of companies in the following studies. The choice of subjects was carried out so that the selected entities were similar in terms of activity, industry and total assets.

In conclusion, during the economic downturn a greater stability can be seen in companies limiting debt, especially short-term debt.

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Efficiency of public sector enterprises in conditions of crisis

Abstract: The systemic transformation in Poland, aimed, among others, at activating market mechanisms, has resulted in a change in the ownership structure and privatization that has accompanied it. Privatization processes are commonly considered to be principally motivated by an increase in efficiency of the economy based on the assumption that efficiency of private enterprises is higher than that of public sector ones. The main aim of the article is to verify the above hypothesis. An analysis of efficiency of public and private sector enterprises, taking into account their organizational and legal forms, made on the basis of Central Statistical Office information, confirmed the above hypothesis. Private enterprises use their assets better and take advantage of the financial leverage mechanism to a larger extent. It should be emphasized, however, that private enterprises are more adversely affected by economic fluctuations caused by the crisis.
Key-words: efficiency, privatization, public sector, private sector.

Introduction

Over the last dozen or so years the Polish economy has undergone fundamental structural changes resulting from the systemic transformation aimed, among others, at activating market mechanisms. One of the major areas of systemic transformation is a change in the ownership structure and privatization accompanying it. The phenomenon of privatization in Poland should be studied in two basic aspects. Firstly, as privatization of the economy that consists in reducing the share of the public sector through the setting up and development of new private enterprises. Secondly, as privatization of enterprises within the public sector owned by the state and local government units. Irrespective of the aspect, an attempt was made to find out, based on statistical data, whether public sector enterprises actually operate less efficiently than private sector ones and, if so, what is the extent of disproportion in that scope. Moreover, it was sought to answer the following question: How did macroeconomic conditions of carrying out economic

activity, which worsened due to the global financial crisis, impact on the efficiency of Polish enterprises?

1. Extent of Privatization in the Transformation Period

According to the classification of the national economy taking into account the ownership structure, enterprises are categorized as public and private sector ones. The public sector encompasses state property (of the State Treasury and state legal persons), property of local government units and "mixed property" with a predominance of capital (property) of public sector entities. The fact that the process of ownership structure transformation aims to increase the importance of the private sector is not tantamount to considering the existence of public sector enterprises to be without reason. The owner's supervision over selected enterprises strategically important to the economy and public utility enterprises, exercised by agencies representing the state and local governments, seems justified.

Table 1. The private sector's position in the industry based on selected macroeconomic values from 1995 to 2010

Specification	Sector a/	1995	2000	2005	2010
Number of workers in the industry (thousands of people)	PB	1892.0	838.1	498.6	419.5
	PR	1864.9	2384.0	2413.5	2276.6
	% PR	45.3	71.6	82.9	84.4
Value of sold industrial output (PLN bn – current prices)	PB	129.9	140.3	122.4	148.4
	PR	114.5	348.5	576.3	837.4
	% PR	46.9	71.3	82.5	84.9
Gross value added of the industry (PLN bn – current prices)	PB	46.3	50.0	49.4	63.0
	PR	38.2	108.7	164.5	237.3
	% PR	45.2	68.5	76.9	79.0
Export sales value in the industry (PLN bn – current prices)	PB	21.5	19.4	14.8	12.9
	PR	28.3	80.0	192.6	295.9
	% PR	56.8	80.5	92.9	95.8
Gross value of fixed assets (PLN bn – current recorded prices)	PB	191.3	288.2	241.8	293.4
	PR	47.3	182.7	330.3	519.1
	% PR	19.8	38.8	57.7	63.9

a/ PB – public sector, PR – private sector, % PR – share of the private sector in the total

Source: own work based on *Statistical yearbook of industry 2005, 2011 Financial results of economic entities 2000, 2005, 2010*.

However, the fact that an enterprise is part of the public sector cannot equal disregarding aspects of efficiency in its operations. The scale of ownership structure transformation in the Polish economy can be clearly seen on the example of the industry (Table 1).

The pace of changes was particularly fast in the second half of the 1990s. The share of private enterprises in the value of sold industrial output and the number of all industrial workers was almost 85% in 2010 (it was slightly over 45% in 1995), while their share in the value of exports exceeded 95% (57% in 1995). Their relatively smaller share in the value of fixed assets is consequent on the trade specificity of the public sector industry (a high share of capital-consuming fields of production such as mining and the energy industry), although the ownership structure underwent fundamental changes also in that respect.

The increased share of the private sector in macroeconomic values results from both establishing new private entities and ownership changes of public sector enterprises through their privatization. From 1990 to 2012, 7555 state-owned enterprises were privatized, which resulted in the formation of 5652 capital companies. The number of state-owned enterprises fell from 1029 in 2005 to 177 in 2012. Apart from enterprises run by natural persons, the most common organizational form of carrying out economic activity is capital companies: at the end of 2012 there were 349 thousand of them registered in the REGON system, 21.4% of which were companies with foreign capital participation [Mały Rocznik Statystyczny 2012 pp. 495–502]. Thus, the entity structure of the Polish national economy became similar to that of economies of highly developed countries.

2. Methodological Aspects of the Measurement and Analysis of Efficiency

The concept of efficiency is most commonly applied while characterizing processes connected with economic activity. It may refer to the national economy as a whole, its specific sectors and divisions as well as specific entities carrying out economic activity (enterprises). Efficiency considered on the scale of the economy (its sector or division) is the outcome of efficiency of enterprises operating within the economy (its sector or division) because an enterprise if not an independent being but a component associated with specific activity conducted in a specific place and occurring within a strictly determined time period [Zygmunt 2006, p. 771]. In that context efficiency can be perceived from the angle of a set of enterprises and related to both the national economy as a whole and its specific classifications (divisions, forms of ownership, location or size of enterprises). Hence, in such a case, we assess efficiency by using measures of economic efficiency whose main function is to measure economic phenomena and processes in order to evaluate an enterprise and make economic decisions [Barburski 2010, p. 32].

Economic efficiency is usually defined as a relation between effects and outlays [Penc 1997, p. 99]. Presenting efficiency in such a way, i.e. by applying a strictly mathematical formula, is often considered sufficient to comprehensively describe that phenomenon. It should be noticed, however, that such an approach describes a selected component of economic efficiency but omits an

interpretation and analysis of relationships occurring between effects and outlays as well as the impact of various factors that determine them. That dilemma is most commonly solved by the use of a set of measures expressing effects and outlays in various forms in assessing efficiency. It is simultaneously kept in mind that, similarly to financial ratios, the construction of an efficiency measure should apply the principles of usefulness, comparability and correspondence as well as the matching concept [Siemińska 2002, p. 120]. The comprehensive approach is justified, among others, by the fact that categories similar to the concept of efficiency and often used in everyday speech are concepts of effectiveness and productivity.

The classical approach to efficiency measurement is based on the principle of rational operation that provides for achieving a maximum result at a given outlay level or achieving a given result at a minimum outlay level [Chudykowska 2012, p. 39]. On the basis of the above definition, it is commonly assumed that optimal economic efficiency assessment measures are quotient formulas. If effects are expressed in pecuniary units and take the form of profit, quotient formulas are referred to as rates (ratios) of return. Those that are most important and most commonly used in the measurement of efficiency include: return on equity (ROE – the quotient of the net financial result and the value of equity) reflecting benefits of owners derived from capital they have invested, and return on assets (ROA – the quotient of the net financial result and the value of assets) indicating how efficiently assets of an enterprise are being used [Helfert 2004, p. 204; Sierpińska, Jachna 2004, p. 196–203; Wypych 2007, p. 682–684]. Financial analysts also apply the return on sales (ROS) ratio that informs about the share of the net financial result in the total revenues of an enterprise. The three listed rates of return are based on the net financial result that reflects the ultimate outcome of an enterprise's activity. An additional efficiency assessment criterion may be the share of enterprises achieving a positive net financial result in the total number of enterprises.

It should be emphasized that information published by the Central Statistical Office on financial results of enterprises enables quite easy calculation of the above-mentioned rates in various analytical cross-sections (according to sections and divisions, size of enterprises, ownership sectors), which is of particular importance to this study.

3. Comparative Analysis of the Efficiency of Public and Private Sector Enterprises with Special Focus on the Industry

As stressed in the introduction, the aim of the article is to prove that private enterprises operate more efficiently than public sector ones. In the light of the assumed efficiency assessment methods, the comparative analysis applies the above-described rates of return. Information on the share of enterprises reporting a positive financial result (net profit) in the total number of enterprises is of a supplementary nature. The analysis covers 2007, 2009 and 2011 and concerns enterprises keeping the books and employing more than 9 individuals. The above periods were chosen in order to determine the extent to which the economic slowdown in Poland, caused by the global financial crisis,

affected public and private sector enterprises. Table 2, containing information on the GDP dynamics and sold industrial output, indicates that 2007 can be considered a reference point for the worsening economic situation. In 2009 the GDP and sold industrial output dynamics hit a low. In 2011 the situation substantially improved, which does not imply that the positive trend continued in subsequent years.

Table 2. Dynamics of GDP and sold industrial production from 2007 to 2012

Years	GDP dynamics	Dynamics of sold industrial output
2007	**106.8**	**110.7**
2008	105.1	103.6
2009	**101.6**	**95.5**
2010	103.9	109.0
2011	**104.5**	**107.5**
2012	101.9	100.8

Source: *Annual macroeconomic indicators*. Information website of the Central Statistical Office.

The analysis of ratios characterizing efficiency of enterprises in 2009 as compared to 2007 allows to assess consequences of the deteriorated macroeconomic situation, while the analysis of ratios characterizing efficiency of enterprises in 2011 as compared to 2009 – consequences of the improved economic situation.

The values of measures of the efficiency of public and private sector enterprises with special focus on the industry, as the main division of the national economy, are shown in Table 3.

The results indicate without a doubt that private enterprises are in a better financial situation than public sector ones. The values of rates of return in the analysed periods are definitely higher in the private sector. The only exception is ROS: in 2011 its level in the public sector was higher than in the private sector both in the economy as a whole and in the industry. The reason for this was simple – from 2009 to 2011 the net profit increase was relatively higher in the public sector as compared to sales revenues in the private sector because its 2009 level was comparatively low. The percentage of profitable enterprises (reporting a net profit) is also definitely higher in the private sector.

Table 3. Efficiency of enterprises according to ownership sectorsin 2007, 2009, 2011

Index	Public sector			Private sector		
	2007	2009	2011	2007	2009	2011
All enterprises						
ROS	4.3	3.3	7.3	5.2	4.2	3.5
ROA	2.9	2.2	4.5	7.5	5.7	4.9
ROE	4.6	3.5	7.3	15.1	11.9	10.6
Percentage of enterprises reporting net profit (%)	74.1	72.0	70.1	84.6	78.8	79.6
Industrial enterprises						
ROS	4.3	4.2	7.9	6.1	4.7	5.0
ROA	3.3	3.1	5.7	8.6	6.1	6.7
ROE	5.2	4.9	9.2	16.3	11.8	12.7
Percentage of enterprises reporting net profit (%)	75.0	73.4	76.4	83.0	76.1	80.0

Source: Own calculations based on: *Financial results of economic entities 2007, 2009, 2011*, Central Statistical Office, Warsaw.

While analysing changes in the efficiency level from 2007 and 2009, it is observed that private enterprises suffered more serious consequences of the economic downturn. Rates of return fell more significantly in that sector than in the public one, which is especially the case for the industry. The percentage of profitable enterprises in the private sector declined by 6.9 percentage points, while in the public sector – by only 1.6 percentage points.

Public sector enterprises were also more positively affected by the economic upturn. The levels of all the three rates of return were even higher than in 2007. It should be noticed, however, that there was a downward trend in the share of enterprises generating positive financial results (74.1 % in 2007 and 70.1 % in 2011). That was due to the increased number of unprofitable entities in such divisions as healthcare, social welfare, culture and recreation. The situation was different in the private sector. While industrial enterprises showed higher profitability in 2011 than in 2009, they did not exceed the level of 2007. On the other hand, economy-wide, the private sector did not improve the rates of 2009. One of the reasons for that was the deteriorating financial situation of construction enterprises (ROS at 3.0 %, ROA at 3.8%).

To sum up, although private enterprises are characterized by higher profitability than public sector enterprises, they are more adversely affected by economic instability caused by the crisis.

4. Efficiency of Enterprises According to Their Organizational and Legal Forms

While the public sector is mainly represented by state-owned enterprises, private sector entities take various legal forms. Those include capital companies (joint-stock and limited liability companies), partnerships (limited, limited joint-stock, professional, registered, civil law partnerships) as well as establishments run by natural persons. It seems an interesting idea to juxtapose the efficiency of state-owned enterprises with that of various organizational and legal forms of private enterprises. The relevant information is shown in Table 4. The information concerns entities employing at least 10 individuals and submitting the F-02 statistical financial report containing, among others, the balance sheet and the profit and loss account.

In general, state-owned enterprises rank below joint-stock companies in profitability (with the exception of ROS in 2011) and, in the case of ROA and ROE, also below limited liability companies. On the other hand, during the economic upturn, the efficiency of state-owned enterprises improved to a larger degree than that of capital companies. Thus, the same conclusion is drawn as for the comparison of all public and private sector enterprises.

Out of all the organizational forms, the best appear to be relatively small enterprises (establishments run by natural persons and partnerships), especially in respect of ROA and ROE. Information concerning that category of entities should be taken with a pinch of salt because they keep simplified financial records. A majority of small firms is not obliged to submit the balance sheet and the profit and loss account, and keeps only the revenue and expense ledger. Hence, generalizations are not advisable for those firms. It is worth noticing that, in both the cases, there is a downward trend in the level of all the ratios in 2011 as compared not only to 2007 but also to 2009 – the improved economic situation did not positively affect efficiency in contrast to the other groups of enterprises.

Table 4. Efficiency of enterprises according to organizational and legal forms in 2007, 2009, 2011

Specification	Years	Profitability ratios		
		ROS	ROA	ROE
State-owned enterprises	2007	5.9	3.8	5.6
	2009	4.5	2.2	3.2
	2011	12.3	5.8	7.3
Joint-stock companies	2007	6.1	6.1	11.5
	2009	4.8	4.6	8.9
	2011	5.2	5.0	9.7
Limited liability companies	2007	4.1	6.5	14.4
	2009	3.0	4.4	9.8
	2011	2.6	3.8	9.2
Partnerships*	2007	6.6	18.6	47.5
	2009	6.5	15.0	33.8
	2011	5.2	11.3	26.9

Co-operatives	2007	2.8	1.2	1.4
	2009	2.9	1.5	1.9
	2011	2.7	1.6	2.1
Natural persons and small-scale production enterprises	2007	6.1	17.5	38.1
	2009	5.8	13.9	31.7
	2011	5.4	13.2	27.1

*Limited, limited joint-stock, professional, registered, civil law partnerships.

Source: As for Table 3.

In turn, co-operatives are without a doubt characterized by the lowest efficiency. Their return on sales does not exceed 3% and the slight difference between ROA and ROE indicates that co-operatives take advantage of the financial leverage effect to a very small extent.

Conclusion

The hypothesis put forward at the beginning of the article is confirmed. Public sector enterprises are no match for private enterprises as far as efficiency is concerned. The ownership structure transformation aimed at increasing the importance of the private sector positively affects the efficiency of the sector of enterprises, and thus the national economy as a whole. That does not add up, however, to the need to completely eliminate enterprises whose owner's supervision is exercised by agencies representing the state and local governments. The point is to create mechanisms mobilizing them to operate according to market principles. On the other hand, while examining dynamics of efficiency, it was found that although private enterprises are characterized by higher profitability than public sector ones, they are more adversely affected by economic instability caused by the crisis. Due to the limited length of the paper, the performed analysis is of a fragmentary nature and should be considered a starting point for more in-depth research.

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Disease Fund Management on the example of the Social Insurance Institution for the period between 2008–2012

Abstract: In Poland, after the economic transformation a lot of fields of business lines required adaptation, also in social security. On last years performed some changes in the insurances.
The sick insurance in the common social insurance has been defined as obligatory for the employees, and voluntary at the request of the person. The cash expenditures for benefits from sick insurance of the contribution charges only the employee insured, also employers incur cost connected with the sickness of employees to pay the remuneration for inability for work.
The unfavorable demographic conditions which determine making the decisions also in the past years, modification of rights and levels of benefits from sick insurance was introduced, which did not reduce, but quite contrary, increased expenses, especially for sick and maternity benefits. It means lack for balancing the sick fund and necessity to search an answer in the foreseeable future to the question whether the level of the contribution should not be reviewed and updated.
Key-words: sickness insurance, contribution for insurance, financing sources.

Introduction

Disease insurance and a method of its financing since the beginning of its existence has been characterized by different solutions. In Poland, disease insurance, was introduced with the Act of 19th of May, 1920 on mandatory insurance in case of a sickness, to cover all employees employed on the basis of the employment contract. A little bit later, sickness funds were established, to which a contribution was paid to charge partially the employer and the employee. In the post-war period, within the frames of the unified social insurance, a cost of the contribution was incurred by the employer exclusively. It was different in case of independent activity, as the contribution was financed by the insured.

The development of social insurance and changes applicable since have been affecting the management of public means, including also the area of

sick insurance. The goal of the article is to examine which elements affect an increase in expenses for benefits from health insurance and, in particular, in the scope of extending the rights to the benefits.

Types of social insurance

Social insurance is assumed to secure the persons covered with the protection in the event when a defined act of God occurs. In classic social insurance, there are the following types of risk: ageing, disability, sickness, marriage, accident work and occupational sickness, loss of job as well as death of the family bread-winner. Each risk has a proper role ascribed which has a particular meaning when the system of social insurance is subject to modifications as it took place in Poland at the turn of the 21st century.

Since 1st of January, 1999, in the place of applicable many legal regulations, a unified social insurance system was introduced, characterized by the aspect that one legal act included all occupational groups being subject to social insurance, principles for establishing an obligation of social insurance were defined, as well as the basis for the contribution level and equal levels of contributions for particular types of insurance. What is significant in relation to previous regulations, is a change justifying division of social insurance into:

1. pension insurance – securing the risk of ageing – which finance pensions, from the old and new system,
2. disability pension insurance – intended for financing disability pensions for inability for work, disability pension benefits in case of loss of the bread-winner and a nursery allowance for the persons towards whom the inability for independent existence was declared or who turned 75 years of age,
3. sickness insurance – guarantees for the person covered with the insurance a compensation of the lost source of income in case of temporary inability to perform work in the form of: sickness allowance, rehabilitation allowance and equivalent, maternity and nursery allowances,
4. accident insurance which covers the payments for the provisions being the consequence of accident at work or occupational sickness, including sickness benefit, equivalent allowance, rehabilitation allowance, compensation for the damage to health as a result of the accident and disability pension for inability for work and family disability pension.

Disease insurance after introducing a reform of social insurance system and its financing sources

With reference to the sickness insurance, the issues were subject to different considerations. In the mid-war period, the burden of the contribution was divided between the employer and the employee. In the post-war period, as a result of social insurance existing only, without separation of types of insurance, the insurance cost was covered by the employer / to reduce in this manner the remuneration/. In turn, since 1976 common social insurance has been introduced for the persons conducting business activity and these persons were charged with a burden to pay the cost of the contribution.

Since 1st of January, 1999 the reform of social insurance system has been introduced to separate sickness insurance from the social one and general principles were established concerning insured persons to affect both the insurance itself, but also the right to future cash benefits. As a result, the following was applied in the structure of the insurance:

1. pension and disability pension insurance as the leading ones,
2. making the sickness insurance dependent on the obligation to be subject to pension and disability pension insurance,
3. covering occupational groups of employee nature, with full insurance protection, with a guarantee to pay the benefit even to these persons, when the employer did not settle all due contributions for the insurance,
4. a possibility to be subject to voluntary sickness insurance exclusively at the request of the person interested, provided the person is obligatory subject to pension and disability pension insurance,
5. towards persons who voluntary are subject to the insurance, the necessity of absolute obligation to pay contributions for social insurance, their lack means the lack of right to cash benefits.

In the new system since January 1999, the insurance has been defined as:

1. **obligatory** for the employees / except for prosecutors/ members of agricultural production cooperatives and cooperatives of agricultural circles and persons doing substitute forms of military service,
2. **voluntary / at the request of the person /** established for: the persons conducting business activity and persons cooperating with them, persons employed on the basis of the agency agreement or order agreement, the person who at the time of doing the sentence of deprivation of freedom or arrest perform the work on the basis of the referral also for the ecclesiastic persons.

A basic difference between these forms boils down to differentiated waiting periods for the sickness allowance, which amounts to 30 days in mandatory insurance, and in voluntary insurance it is 90 days of continuous insurance[1] and the fact of absolute payment of the contribution by those being subject to voluntary insurance. Such a requirement does not exist towards those being subject to obligatory insurance, which constitutes a beneficial situation for those persons, as it does not have negative effects for an employee in a form of liability for non-payment of the contribution by the employer who in fact deducted the contribution from the employee's remuneration, but did not pay it into the Social Insurance Institution.

Separation of a new sickness insurance is connected with defining the contribution for insurance of 2,45 % established on the individual basis of the insured person. The basis depends on achieved revenues or on the amounts declared by the insured. The cost of the contribution charges only the employee insured, as the contribution reduces the remuneration, whereas all

[1] In the period from September 1999 till December 2008, sickness benefit for the persons being subject to sickness insurance voluntary was granted after the lapse of 180 days of continuous insurance.

activities connected with establishing and transferring the contribution on the individual basis of the revenue were imposed on the contribution payer, who transfers them to the Social Insurance Institution. In cases of persons being subject to sickness insurance, a person is charged voluntary with the contribution who is subject to insurance, except for the persons cooperating with the persons conducting business activity, for which the person conducting the business incurs the cost.

Types of benefits from sickness insurance

While analyzing problems of cash benefits from social insurance, it is worth paying attention to the expenses which are subject to the principles of managing public means, namely the Fund of Social Insurance, dominant target fund in Poland. The rules resulting from the social insurance at the same time define and indicate the scope of the insurance protection, which is an inherent element of the insurances. On the basis of the applicable legal acts, types of benefits may be classified in accordance with different criteria.

Assuming the payment period as a criterion, the following can be distinguished:

1. short-term benefits – sick benefit, equivalent benefit, rehabilitation allowance, maternity and nursery benefits,
2. long-term benefits – which include pensions, disability pensions for inability for work, training pensions and family disability pensions,
3. lump-sum benefits – namely compensation.

Short-term benefits are characterized by a differentiated scope for particular insurance groups and by the fact that the right to the sick benefit is created as late as the condition being the waiting period has been fulfilled. Each benefit is an equivalent of the income lost in connection with transitional inability for work.

Disease benefit is a form of security which in the period of inability for wok is to replace the income lost on which the contribution for insurance was previously established. It is granted to the person insured after the listed period of insurance / 30 days with obligatory one, 90 days with voluntary, both during the insurance and after its cessation. The payment period is 182 days and in case of a sickness, with which incubation period is longer than 270 days.

Increasing expenses from sickness insurance contributed to differentiation of the benefit and the following was adopted as a criterion:

1. the reason for inability for work of the person insured,
2. the place in which the person is during the inability for work.
3. Age of the person insured.

Acceptance of such criteria means that the sickness benefit shall be granted in the following levels:

1. 80 % of the basis for calculation – as a basic level in case of inability for work and for the persons who turned 50 years of age and during the sickness stayed in hospital,
2. 70 % of the basis for calculation in the event when the sickness period falls for the stay in hospital, except for those insured how turned 50 years of age,

3. 100 % of the basis for calculation for pregnant women for the persons who became unit for work in connection with the accident on the way to or from work and for the insured who stay on sick leaves in order conduct examinations, if they are to be donors of tissues, organs.

Disease insurance is connected with a necessity to stay on insurance and pay the contribution, but for many years in Poland there have also other principles been applicable, imposing an obligation on the employer to pay the remuneration for the period of unfitness for work and then the remuneration is paid without employment provision [Jończyk 2010, pp. 8–9]. Bearing in mind the expenses for sick absence, growing for years, in the past since 1st of March 1995, an obligation has been imposed on the employers to pay the guarantee remuneration for the absence for work up to 35 days / currently up to 33 days / in a calendar year [Muszalski 1999, p. 115].

The issue has been a subject of the discussion for years in the circle of employers as in case of some companies, especially those which employ a larger number of persons, often staying on sick leaves, the situations disorganize operation of these entities. An average length of sick absence in 2012 in accordance with sick leaves issued amounts to 36,77 days and the largest parameter is in the łódzkie province 47,26 and the świętokrzyskie one 43,56, whereas the shortest periods refer to podlaskie province 30,55 days. As a result, the employer, without paying the contributions for sickness insurance incurs, however, a significant cost for the sick absence.

In the past years, in the social policy, the attention was paid to the necessity to increase occupational activisation of the unemployed especially those who exceeded 50 years of age. One of the incentive form towards the employers to employ the unemployed and persons who turned 50 years of age was an introduction, towards the person who are subject to obligatory disease insurance, of the principle limiting the cost incurred by the employers for the remuneration paid for the period of unfitness for work.

Preferences for the employers boil down to the payment of the remuneration in total for 14 days in a calendar year of inability in the place for the present remuneration, the sick benefit is paid. The data contained in the table below no. 1 indicates that in fact a number of benefit days for which the remuneration is paid decreases for the period of inability for work, but the amount of these payments in particular years between 2008–2012 exceeds 4 bn PLN. A justification for such a state of affairs is that in each year analyzed, the calculation basis for the social insurance contribution increased as well as the amount of the lowest remuneration for the persons employed on a full time basis [2], which affects an increase of an average daily level of the benefit[3], and as a consequence, the global amount of the remunerations paid in the period of an employee's sickness. Since 2009, a number of days for which remunerations were paid for the time of inability for work, which is connected with shortening the period of payment for the persons above 50 years of age,

[2] The lowest remuneration in 2012 amounted to 1500 PLN, in 2013 amounts to 1600 PLN and then in 2014 is established on the level of 1680 PLN.

[3] An average daily rate of disease absence amounted in 2008 to 50.34PLN; in 2009 to 57,23 PLN; in 2010 to 63.14 PLN; 2011 to 66.12 PLN and in 2012 to 69.20 PLN.

but also with popularization of self-employment, which has undoubtedly an influence on reducing the number of persons being subject to insurance in employment system.

In addition, it is worth emphasizing that some circumstances which justify an inability for work result in paying the benefit in 100% as a derivative from remuneration/ pregnancy[4], accident on the way to work and from work / which indisputably affects an average daily rate of the remuneration for inability period for work.

Table 1. Remuneration cost for the inability for work incurred by the employers between 2008–2012 /in thous. PLN/

Specification	Year				
	2008	2009	2010	2011	2012
Amount of payment	4 316 380.6	4 522 778.3	4 322 184.5	4 489 675.8	4 456 925.5
Number of sickness days	85 739.7	79 028.3	68 453.0	67 897.6	64 403.0

Source: own study on the basis.

Whereas, in the scope of payment of sickness benefits, despite limitations undertaken in the scope of the level of the benefits, a number of days of inability for work in 2012 in relation to 2008 increased by over 15 %, and this was accompanied also by an increase to pay the benefits by over 59 %. In the subsequent years, the situation will certainly have an up warding tendency which must result in changing the provisions.

Rehabilitation provision constitutes a continuation of treatment, directly after a disease benefit, if the person is still unit for work, but further treatment and rehabilitation are likely result in restoring ability for work. The payment of the provision is established for 12 months maximum, and the level amounts to 90 % of the calculation basis for the first 3 months of the provision, whereas for the remaining periods 75 % of the calculation basis. In the scope of these benefits in the period analyzed, both a number of days of payment of benefits and the amount of the benefits paid increase[5]. Such a state of affairs should be recognized as a positive phenomenon because after rehabilitation benefit, the person returns to professional activity and as a result, does not use any other benefit being disability for unfitness for work.

Within the sick insurance, there are also benefits with family nature in the form of: maternity benefit and nursery benefit. The first one has been subject to many significant modifications for the last few years, resulting from the priorities of the pro-family policy in Poland in connection with unfavorable

[4] Disease absence for own sickness of the insured for 2012 indicates that the number of absences is participated mostly by 18,5 % / 38 216,3 thous. days in total 206 776,3 thous. days/ resulting from pregnancy, labor and childbirth with an average length of sick leave 22,27 days – Sick absence in 2012, ZUS, Warszawa 2013, p. 42.

[5] As of 8th of February, 2005 sick benefit amounts to 182 days or 270, previously inability period for work could be extended for another 3 months.

demographic conditions. These changes are subject to extending the period of care over a child, which is connected with payment of maternity benefits. In the past, for many years, the periods of maternity leave were treated with different attitude, as the right to the benefit was granted in accordance with another child borne or in connection with multi-children family. Such regulations involving the lack of stabilization on a long perspective were not favorable, as it was difficult for parents-to-be to plan long-term periods of children care, especially in the conditions of unpredictable labor market. The attention should be paid to the fact that since 28th of November, 2002 a maternity benefit was granted to a father or another person who will interrupt an insurance title after using a 14-week maternity benefit by the child's mother. Such a step is favorable to making decisions in the family, who in a given period may take care for the child.

A nursery benefit is a benefit connected, first of all, with paternity, but also with a necessity to take care over other sick members of the family. This manner of taking care in the past referred only to the persons with an employee's status, but since 2005 there has been otherwise, as each person being subject to sick insurance, both in mandatory and voluntary system may use nursery benefit in connection with a necessity to take care over a sick or healthy family member. This benefit is paid in the level of 80 % calculation basis and by what number of days the level increased, the amount of payment increased by over 51 %, similarly as in previously discussed benefits.

Table 2. Payment of benefits from sick insurance between 2008–2012

Specification	**Year**				
	2008	2009	2010	2011	2012
In total					
Number of days in thous.	194 406,7	205 076,9	187 804,6	189 527,6	189 634,1
Payments in thous. PLN	9 222 758.3	11 140 638.9	11 143 555.0	11 713 763.2	12 281 437.5
Sick benefits					
Number of days in thous. PLN	108 632.9	126 023.5	119 327.2	121 606.4	125 207.0
Payments in thousand PLN.	4 905 672.5	6 617 464.8	6 820 802.2	7 223 446.4	7 823 753.1
Nursery benefits					
Number of days in thous. PLN	7 875.9	8 535.9	7 708.6	8 118.6	7 979.0
Payments in thous. PLN	369 903.0	464 948.5	489 094.5	542 977.6	558 904.6

Maternity benefits					
Number of days in thous. PLN	35 125,2	39 607,0	42 623,9	41 594,1	46 322,1
Payments in thous. PLN	1 810 728.7	2 406 592.3	2 938 818.9	3 018 919.1	3 650 012.7
Equivalent benenfits					
Number of days in thous. PLN	28 190	24 470	33 029	23 365	20 488
Payments in thous. PLN	705.2	591.7	774.7	498.5	484.2
Rehabilitation benefits					
Number of days in thous. PLN	58 819	59 231	60 623	63 028	69 708
Payments in thous. PLN	776 202.4	890 616	924 401.5	960 847.7	1 112 167.9

Source: own study.

Influence of new law regulations in the scope of sick insurance on the financial situation of the disease fund

Disease insurance covers two basic types of risk for sickness and maternity and for this reason sex is a parameters which has a significant meaning for the modification of the provisions. In addition, it is characteristic that in some types of benefits – with maternity benefit – a woman preserves a priority to acquire the right to benefit. The reform of social insurance system started over ten years ago to distinguish disease insurance and to indicate that that the insurance may be obligatory or voluntary did not exclude changes in rights to the benefits.

A basic difference between mandatory and voluntary insurance, as it was mentioned before, refers to the period of waiting for the sick benefit.

While analyzing these elements which have an influence on expenses from sick insurance one should mention that since 1st of January, 2009 at the petition of the Member of Parliament the waiting period was shortened from 180 days to 90 days of continuous insurance. As a consequence, it is important for the payments realized from Social Insurance Fund, as voluntary insurance means a payment of sick benefit from the first day of inability for work from this Fund. It is worth adding that in the period preceding the introduction of the change, with a 180-day waiting period, balancing means was not applied, as the payment amounts of the benefits for the persons being subject to voluntary insurance exceeded the amounts of contributions transferred by these groups of insured.

Further transformations in benefits shall cover multiple changes in maternity benefits the only source of financing being Social Insurance Fund.

Within the frames of the pro-family, within the frames of the pro-family policy conducted on a broader scale since 2009, the payment period has been extended for maternity benefits.

Current year 2013 is a breakthrough period, at the request of a group of Members of Parliament a project of the Act was prepared assuming extension of the maternity leave and introduction of paternity benefits of 26 weeks. The provisions came into force since 17th of June, 2013 and shall define maximum limits of expenses of the Social Insurance Fund for paternity leave for the years 2013–2022 / in 2013 this is 1 176,000 thous. PLN/. An increase of the limit of expenses was also foreseen at the request of the President of Social Insurance Institution to guarantee the payments to all persons entitled which results not only from estimation and not from actual knowledge on demand for these means by the persons concerned.

The data placed in the table below in the analyzed years shows an increasing tendency of social insurance contributions, but also an increase of expenses for benefits from the disease fund, which does not take place in other types of benefits from social insurance which means that participation of the expenses for benefits from sick insurance in Social Insurance Fund grows rapidly. In addition, it should be mentioned that except for payments of cash benefits from target fund, also employers incur cost connected with the sickness of employees to pay the remuneration for inability for work for the amount of over 4 bn PLN a year.

Table 3. Participation of expenses of Disease Fund in Social Insurance Fund between 2008–2012 /in thous. PLN/

Specification	Rok				
	2008	2009	2010	2011	2012
Social Insurance Fund in total	132 180 820.6	147 896 404.4	156 898 730.9	162 721 174.1	170 913 419.0
Sick fund	7 349 283.4	9 822 371.5	10 589 706.0	11 122 232.7	12 504 349.8
Participation %	5,6	6,6	6,7	6,8	7,3

Source: own study.

Assuming that the employers would not incur such a cost, it would be necessary to lower the payment of benefits or to increase the contribution for sick insurance. It is obvious that no solution would be approved among a majority of the insured as well as among payers of contributions, as it would result in increasing remunerations and labor costs.

Conclusions

1. Reform of social insurance system separated a different types of insurance in mandatory or voluntary form.
2. Sick insurance guarantees for the insured the right to compensation of the source of lost income during periodical inability for work.
3. Cost of sick insurance was established on the level of 2,45 % of the basis and the level was not changed.
4. In the past years, modification of rights and levels of benefits from sick insurance was introduced, which did not reduce, but quite contrary, increased expenses, especially for sick and maternity benefits.
5. Basically, the management of the sick fund takes place, in fact, from two financing sources, i.e. contribution for sick insurance, subsidy from state budget. However, actually, the sick fund is supplemented by the employers to pay the remuneration for the inability period for work. It means lack for balancing the sick fund and necessity to search an answer in the foreseeable future to the question whether the level of the contribution should not be reviewed and updated.

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Young people in the labor market. Improvement or stagnation?

Abstract: The aim of the study is that evaluate the situation of young people on the labor market in Poland and the European Union, as well as to identify the main determinants have an impact That on it. As is clear from the study, in comparison to the average in the countries of European Union, the situation of young people in Poland is even more difficult, as evidenced by Analyzed in this elaboration parameters characterizing both economic activity and unemployment. In Celui improve the competitive position of young people, it is necessary to implement a series of actions, especially those that enable them to acquire skills in line with the expectations of employers. In the analyzes Assumed ages 15–24 years. The lower limit of age is specified to polish law of so-called the minimum age at Which you can hire an employee, and the upper limit-is consistent with international findings.
Key-words: young people, occupational activity, unemployment, comparative analysis.

Introduction

Goals set in the Europe 2020 Strategy[1], that achievement should ensure smart, sustainable and inclusive economic growth, will also require measures aimed at young people. A necessary condition for releasing the potential of this category, and thus achieve the objectives of the strategy is education and training at a high level, successful integration into the labor market and greater mobility of young people. Despite the fact that the unprecedented opportunities are offered in contemporary Europe, young people are facing with different problems in systems of education and training and in access to the labor market, that were exacerbated by the economic crisis[2]. The parameters characterizing the population of young people are deteriorating each year,

[1] This problem is particularly important in the context of achieving its goal to 2020 an employment rate is which of the amount 75% amongst persons in century 20-64 is flying [Komunikat 2010].
[2] Confirmation of this phenomenon is reflected in studies conducted in the United States and the United Kingdom different. [Bell, Blanchflower 2010].

that means widespread problems associated with their collision-free entry upon the labor market. Another determinant is the fact that by the year 2020, on the basis of the estimates, 35 % of jobs will require high qualifications and the ability to adapt and innovate. This represents an increase of 15 million skilled jobs [Mobilna 2010] that deficiency may be a factor inhibiting the development of the EU economy. As evident of the observations to date, the share of the EU population, characterized by a higher education is much lower in comparison to other areas of the world, because they constitute about one third of the general population. For example in the U.S. the percentage of such people is more than 40%, and Japan-more than 50%. Although the systematical improvement of indicators occurs in this area (for example in 2010 compared to 2008 a share was larger of 2.5%), this level is still insufficient in terms of innovation in the economies of the EU[3]. So the objective designated in the Europe 2020 Strategy, which is to complete the college or its equivalent by at least 40% of the population of young people by the year 2020, requires more effort, increasing the availability of such education, as well as restricting the early school leaving problem[4]. This is because such behavior-as is clear from past experience-increases the risk of unemployment or professional inactivity, living in poverty and pursue of high economic and social costs [Komunikat 2011].

In comparison to the average in the countries of European Union, the situation of young people in Poland is even more difficult, as evidenced by analyzed in this elaboration parameters characterizing both economic activity and unemployment. Therefore, also in Poland, has intensified the discussion of the actions that would influence the improvement of the status quo of this group of people in our country. Youth in fact, is a group of the society, which in the future will affect the size of the labor force and will fundamentally affect management processes. The way how they see the current economic reality and the chance of finding their place in it has a major impact on shaping their professional fate. A young man finishing his education enter the labor market, whose principles of operation are often alien to him, and the knowledge learned at school turns out to be insufficient at this time. Barriers that young person face may lead to changes in its attitudes. It is therefore extremely important, that these barriers should be the least.

The aim of the study is to evaluate the situation of young people on the labor market in Poland and the European Union, as well as identify the main determinants that have an impact on it. The analysis adopted the following research hypothesis: in order to improve the competitive position of young people in the labor market it is necessary to many changes in the education system currently functioning and activities supporting economic activity in this category of labor. Existing solutions do not in fact have contributed to improving the situation of the group. The studies assumed ages 15 – 24 years[5].

[3] Passed indicators concern persons in century 30-34 years [Eurostat 2008, Eurostat 2010].
[4] According to the European reference level one should reduce the percentage of pupils prematurely finishing the school learning to 10 %.
[5] This category doesn't have homogeneous character, because is embracing young persons (15-17 years) and persons in an economically productive age (18-24 years).

The lower limit of age is specified by polish law of so-called the minimum age at which you can hire an employee, and the upper limit-is consistent with international findings.

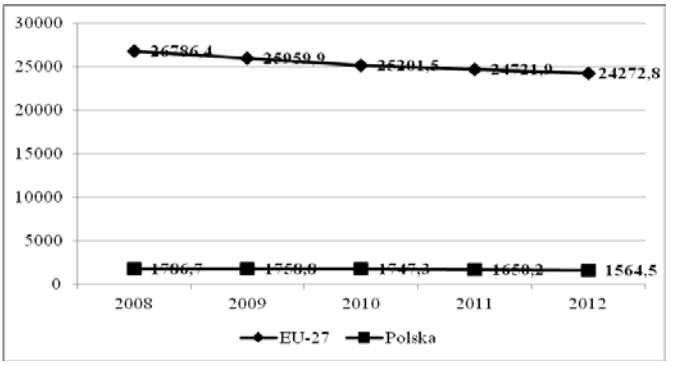
1. Professional activity

Young people in adopted in analysis the limits of age, are a specific group in the labor market, since the vast majority of them continue their education at different levels. However, more and more common phenomenon is to combine learning with work, which mainly stems from a desire to gain practical skills and experience, so much valued by employers. In addition, we are often faced with a situation that youth undertake job for economic reasons, which contributes to faster leaving the educational process.

It is worth emphasizing that, in recent years this activity is essentially conditioned by the economic downturn, what combined with entering the labor market by last baby boom cohorts significantly worsened the chances of young people for good start in the labor market. The economic downturn hits hardest the young people looking for work, as well as they are, because of having little experience, more often losing their jobs during the downsizing. The reason is less experienced and weaker protection against dismissal. This situation concerns not only Poland and increases unemployment among this category of labor resources[6].

In the years 2008–2012 the number of economically active young people, both in Poland and European Union countries has diminished, but with a more intense decline in the case of our country, because the population of economically active young people decreased by almost 13%. In the European Union the decrease was lower and amounted to less than 10% (Figure 1).

Figure 1. Number of professionally active persons in century 15–24 years in Poland and of the European Union in years 2008–2012 (in the thousand)



Source: Eurostat.

[6] The conditions that affect the economic activity of young people, as well as those in the older vintages of working age in the EU has been written in a report prepared for the European Parliament. [Eichhorst, Boeri, Braga, De Coen, Galasso, Gerard, Kendzia, Lufthansa CEO, Pedersen, Schmidl, Steiber 2013].

Moreover, in the case of the European Union at the end of the study period the number of men in the analyzed age group decreased by about 10%, while the number of women-it was less than 8%. In Poland, the number of economically active young men fell, although it was less than 7%, but among women it was a very rapid decline in population, as much as almost 20%.

Changes in the economically active population have influence on activity rates (Table 1). Statistical data indicate relatively high diversity of economic activity rates between Poland and European Union countries. Although these differences were over the tested period slightly decreased, especially for the total population of young people, nevertheless are still significant. This observation applies especially women, where the difference of indicators' level in 2012 exceeded 11 percentage points.

Table 1. Activity rates of the population in century 15–24 years in Poland and of the European Union in years 2008–2012 (in %)

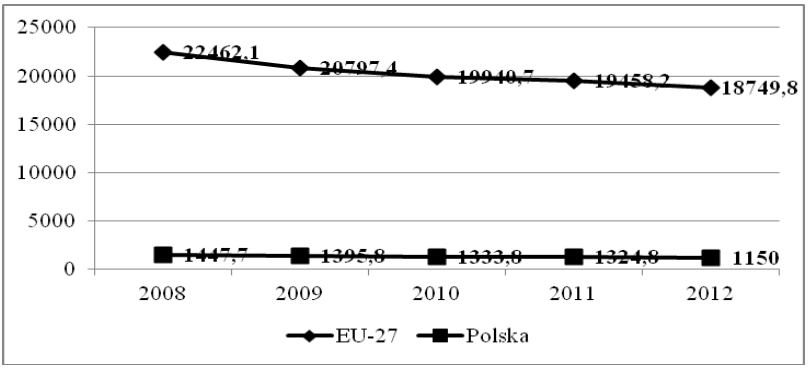
Detailed list	2008	2009	2010	2011	2012
	EU				
With the whole	44,3	43,7	43,0	42,8	42,6
Men	47,8	46,9	46,1	45,8	45,5
Women	40,8	40,4	39,7	39,7	39,6
	Poland				
With the whole	33,1	33,8	34,5	33,6	33,6
Men	36,5	38,1	39,1	38,7	38,5
Women	29,6	29,4	29,7	28,2	28,4

Source: Eurostat.

The deteriorating situation of young people in the years 2008–2012 in terms of professional activation possibilities is even more evident in the analysis of the number of working members of this age category, as well as the level of employment indicators relating to this labor resources group. The analysis confirms the initial findings of more and more limited interest of employers in offering job to such workers. This is undoubtedly related to the economic activity of the economies of Poland and other European Union countries, but may also result from changes in the attitudes of young people to choose a career path. In comparison to the changes in the number of economically active young people, observed in this case trends were more intense, which affected both the Poland and the European Union.

Number of employed persons in the Polish economy in the analyzed age group in the years 2008–2012 was falling all the time. At the end of the study period it was less than 20% from that in 2008. Similar changes have been seen in other countries in the European Union, although the working young people in the economies of these countries was less than 17% (Figure 2).

Figure 2. Number of the employed in century 15–24 years in Poland and of the European Union in years 2008–2012 (in the thousand)



Source: Eurostat.

In the analyzed years in EU the total number of employed men fell by almost 18%. Female population decreased at the same time only slightly more than 15%. It can therefore be concluded that the economic slowdown in the EU much more weakened the tendency of employers to hire men rather than women. The reverse situation occurred in Poland, because the community of men in the analyzed age group decreased less in comparison to the parameters characterizing the number of men in the European Union (down less than 17%). Much more intensive changes have taken place in the case of women workers, whose numbers fell by almost 30%.

Changes in the number of employees by gender influenced the trends in employment indicators, both in Poland and in the European Union (Table 2).

Table 2. Indicators of the employment of persons in century 15–24 years in the European Union and Poland in years 2008–2012 (in %)

Detailed list	2008	2009	2010	2011	2012
	EU				
With the whole	37,4	35,0	34,0	33,7	32,9
Men	40,3	37,0	36,2	35,8	34,9
Women	34,4	32,9	31,8	31,4	30,9
	Poland				
With the whole	27,3	26,8	26,3	24,9	24,7
Men	31,0	30,4	30,3	29,6	29,2
Women	23,7	23,2	22,1	20,1	19,9

Source: Eurostat.

As can be seen from the data presented in the table, the level of employment rates was significantly lower compared to previously analyzed professional activity rates. This applies to both Poland and the European Union. However, as in the previous case, the parameters characterizing the employment of Poles aged 15–24 years in the studied period, were also lower than the average in the European Union by about 8–10 percentage points. This shows still a more limited capacity to perform work by this community in Poland, which may be primarily a consequence of a lack of cohesion between the qualifications and skills held by the representatives of this group and expectations of employers[7]. The main factor in this case is the lack of practical experience, which is not guaranteed in a wide range of learning processes on its different levels, which results from other studies. It is common opinion among employers that the education system educates in the knowledge that the usefulness for work is negligible and practical skills are usually ignored or treated as less important in terms of shaping the graduate profile. The reluctance to hire young people is also a consequence of their high expectations, inadequate for their skills. By that such workers are potentially less valuable to employers. Therefore, in order to increase the interest in young workers, it is necessary to reform the education system, as well as to promote the idea of lifelong learning, which enables young people to adapt their existing skills to the needs of employers and they job offers.

It is worth emphasizing that, in the tested age category, men are characterized by a far greater employability, which confirms previous findings about women's greater willingness to extend the time to learn, as a factor-in their opinion-which generates in future an increased opportunities to work[8]. Furthermore, the difference in rates of employment of women in Poland and the European Union countries is very high. It is much higher than for men. It reaches, especially in the last years of the tested period, about 10 percentage points It is probably also a consequence of the economic downturn that has exacerbated the reluctance of employers to employ them. This is particularly true for private employers who are much less likely to want to incur additional costs related to the employment of women[9].

Analyzing the statistics it should be noted, that the level of professional activity of young people is directly dependent on the level of education they represent:

– the lowest is professional activity of people with pre-school, primary and secondary education; professional activity indicators, in the case of this people, form in the entire European Union at the level oscillating at around 30% and are much higher for men than women; in Poland, these

[7] This problem is also reflected in a study conducted by the International Labour Organisation in the world. [The Economist 4/27/2013].

[8] It is regarding especially a higher education had by women or college. The plausibility of the activity on the labour market of the woman with the secondary education was about the 50% lower in comparing to the ones which were characterized by a higher education or college [project Balance of the human capital], [Czarnik, Turek 2012].

[9] These costs are tied with performing by women the role of a housewife and the mother. [Kotowska 2009].

parameters are much lower and at around 9%, such big differences are probably caused by a common approach to the process of education, in which despite of the absence of compulsory education above secondary school level, it is considered necessary further training of children in upper secondary schools[10],

– professional activity of people with upper secondary and post-secondary education in the European Union and in Poland, in relation to the total population in the study age group, was comparable and stood at about 50%; in the distribution for the population of men and women, alike in both areas, men were characterized by a higher professional activity than women; therefore it can be concluded that women in Poland are much more likely to remain in a state of professional inactivity, because they prefer an extension of the educational process without any active participation in the processes of management,
– the highest professional activity rates characterized, in the tested years, the respondents with higher education level (first and second degree), for the entire population of young people they formed at a level above 60% in both Poland and the European Union; by gender there was observed no significant differences in the level of professional activity rates; they were high and often exceeded much 60%.

The trends in forming professional activity of young people described above, are the evidence to its very high dependency on the education level. This correlation is particularly visible in Poland, which means that in the future can be expected to continue the high interest at levels above the gymnasium.

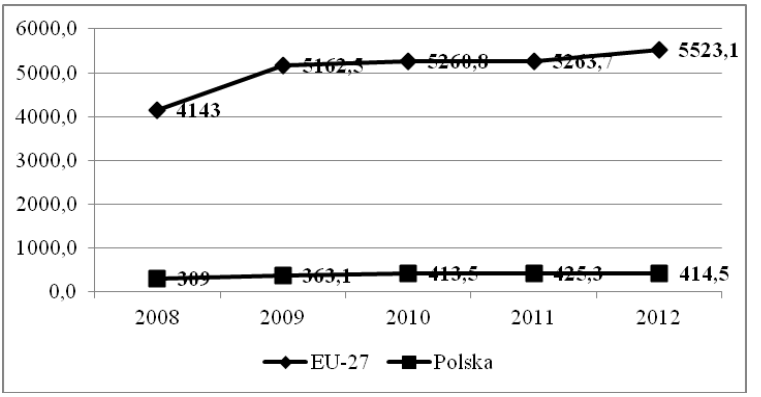
2. Unemployment

Poland from years is among the leading EU countries, in which both, the number and the rate of unemployment of people aged 15–24 years was at the highest level. Despite much progress in this area, we still had to deal with this situation within the years 2008–2012. The participation of young people in the total population of unemployed[11] in Poland compared to the average of the European Union was generally higher, and at the end of the tested period amounted to 23.8% (22.1%). Bridging the gap between Poland and UE in the level of unemployment among people, that represent the analyzed age interval, was primarily a consequence of rising, faster than earlier, problems with the professional activation of this category of labor resources in the EU and almost compensation of the rate of changes (33.3% in the EU-27 and 34, 1% in Poland) (Figure 3).

[10] Por. Ustawa z dnia 7 września 1991 r. o systemie oświaty (Dz. U. z 2004 r. Nr 256, poz. 2572, Nr 273, poz. 2703 i Nr 281, poz. 2781, z 2005 r. Nr 17, poz. 141, Nr 94, poz. 788, Nr 122, poz. 1020, Nr 131, poz. 1091, Nr 167, poz. 1400 i Nr 249, poz. 2104, z 2006 r. Nr 144, poz. 1043, Nr 208, poz. 1532 i Nr 227, poz. 1658, z 2007 r. Nr 42, poz. 273, Nr 80, poz. 542, Nr 115, poz. 791, Nr 120, poz. 818, Nr 180, poz. 1280 i Nr 181, poz. 1292, z 2008 r. Nr 70, poz. 416, Nr 145, poz. 917, Nr 216, poz. 1370 i Nr 235, poz. 1618, z 2009 r. Nr 6, poz. 33, Nr 31, poz. 206, Nr 56, poz. 458, Nr 157, poz. 1241 i Nr 219, poz. 1705, z 2010 r. Nr 44, poz. 250, Nr 54, poz. 320, Nr 127, poz. 857 i Nr 148, poz. 991, z 2011 r. Nr 106, poz. 622, Nr 112, poz. 654, Nr 139, poz. 814, Nr 149, poz. 887 i Nr 205, poz. 1206, z 2012 r. poz. 941 i 979 oraz z 2013 r. poz. 87 i 827).

[11] The unemployed in century 15–64 is flying.

Figure 3. Jobless total in century 15–24 years in Poland and of the European Union in years 2008–2012 (in the thousand)



Source: Eurostat.

The trends of changes in the unemployed population aged 15–24 years, consisted of varied transformation dynamics of number unemployed women and men.

In the European Union the dynamics of changes in numbers of both populations had a similar level (35.8% for men and 30% for women). Higher parameters observed among men were probably the consequence of the already noticed less liability to employ them by employers. At the same time, it should be noted, that such diversity in even greater intensity has occurred in the examined period in Poland, as the number unemployed men in this time increased by nearly half (46.7%), while the number of women-only slightly more than 1/5 (22.1%). Therefore, it is necessary to answer the question of whether a lower rate of changes in unemployed women population, may signify an improvement of their competitive position in the labor market, or if it is associated with their greater tendency to prolong the duration of the study. It seems that this last point, in particular, weigh on the trends of the number of unemployed by gender.

This conclusion is confirmed by the analysis of unemployment rates in Poland and the European Union by gender (Table 3).

Table 3. Unemployment rate in years 2008–2012 amongst persons in century 15–24 years in the division into the sex (in %)

Detailed list	2008	2009	2010	2011	2012
	EU				
With the whole	15,6	19,9	20,9	21,3	22,8
Men	15,8	21,2	21,8	21,9	23,5
Women	15,8	18,8	20,2	20,8	22,1
	Poland				
With the whole	17,3	20,6	23,7	25,8	26,5
Men	15,2	20,2	22,4	23,6	24,1
Women	19,7	21,1	25,4	28,8	30,0

Source: Eurostat.

Unemployment rates among women aged 15–24 years in Poland were over the tested period still higher, which means their much more difficult situation compared to men. So just in case of Poland, the elongation factor of study period may be important. Staying in professional inactivity carries, nevertheless, certain economic consequences for households, as well as may be important in the future for effective job search.

In order to assess, in the analyzed period, the situation of young people on the labor market, it is important to know the indicators that characterize the tested population divided into different levels of education (Table 4).

Table 4. Unemployment rate of persons in century 15–24 years according to levels of education and the sex in years 2008–2012 in Poland and of the European Union

Detailed list	2008	2009	2010	2011	2012
	EU				
Pre-school, essential and secondary school education	21,2	26,1	27,4	28,2	30,3
Post-secondary and college education	12,9	17,1	18,2	18,6	20,0
Higher education (and and second degree)	11,7	13,5	16,3	16,7	17,9
	Men				
Pre-school, essential and secondary school education	20,7	26,4	27,7	28,3	30,5
Post-secondary and college education	12,6	17,9	18,3	18,6	20,1
Higher education (and and second degree)	11,7	16,5	17,1	16,4	17,9

	Women				
Pre-school, essential and secondary school education	22,2	25,6	27,0	28,1	30,0
Post-secondary and college education	13,3	16,2	18,0	18,6	19,8
Higher education (and and second degree)	11,7	14,9	15,7	16,9	17,9
	Poland				
Pre-school, essential and secondary school education	20,6	24,5	30,1	31,8	33,2
Post-secondary and college education	16,9	20,2	23,1	25,5	26,0
Higher education (and and second degree)	16,8	19,6	20,7	22,0	22,5
	Men				
Pre-school, essential and secondary school education	18,2	21,9	28,7	30,3	31,4
Post-secondary and college education	14,7	19,8	21,4	22,7	23,0
Higher education (and and second degree)	14,9	21,3	19,4	19,1	19,0
	Women				
Pre-school, essential and secondary school education	26,6	31,5	34,3	36,1	39,5
Post-secondary and college education	19,7	20,8	25,7	29,8	30,8
Higher education (and and second degree)	17,7	18,9	21,4	23,5	24,3

Source: Eurostat.

Both in Poland and in the European Union the most difficult situation occurred in the case of people with the lowest levels of education. These are the people who have no qualifications, whose professional activity is determined by the acquisition of skills coherent with the expectations of employers. At the same time, according to other studies, the tendency to participate in the process of education of unemployed people is very limited [Sobocka–Szczapa, Poliwczak 2010; Sobocka–Szczapa 2007; Matysiak, 2003]. A similar character is the attitude of this population to lifelong learning, which means that the professional activity of this group of the unemployed can be a problem, in terms of the tasks performed in the active labor market policy. Therefore, a systematic increase of unemployment rates in population with this level of education, may need modifications of the methods of supporting professional activity, because from the point of view of the employers, they are in most cases a community of limited usefulness for business operation. This situation may especially occur when we are dealing with the labor market, on which primarily an employer may impose conditions for the implementation of the professional objectives of labor resources.

For all other levels of education, which have a much lower unemployment rates, it has to be emphasized that the importance of the different conditions that affect their size. In the first instance, it should be noted the inconsistency

of the education system and labor market needs. It is a problem which-particularly in Poland-we have to deal for many years. Changes in the education system are too slow, as well as specializations offered are not always the result of consultation with employers, that operate in regional and local labor markets. Elaborations done annually devoted to monitoring the developments in these markets of the work demand and the work supply, have not yet led to a significant improvement in this area. Similar comments can have on the effectiveness of the implementation of business practice methods/models to assess the demand for labor[12].

The important issue, from the point of view of limiting the increasing unemployment among those with upper secondary, post-secondary and higher education, is the inadequacy of training programs to the needs of employers. There are known for their opinions on the often poor practical preparation of high school, college and university graduates, as well as the poor quality of education processes in general. This problem probably has some kind of relationship with the marketisation of education services and thus a great number of schools where the learning process is not always on an appropriate level of quality.

Such considerations are important for the careers of young, as well-especially for those with higher education-are contributing to form losses in the economy. No use of skills and qualifications of people with this level of education can contribute, on one side to reduction of economic activity of the entities, and on the other – may cause misinterpretation of the saturation indices of human resource management characterized by this educational level (for example, employment inconsistent with possessed specialization and level of education) .

In the analysis of unemployment rates by level of education one should pay attention to another aspect, namely the fact, that these parameters are often much higher among women than among men. This means that women in the labor market are characterized by lower competitive position and it is much harder for them to find a place of employment. This is the case for a long time, which meant that this category of labor resources is classified as vulnerable groups at risk of exclusion. In the case of young women there is more often a reluctance of employers to employ them, because of a very strong link in this age between a professional and caring role. The above-mentioned reluctance of private employers to hire women in this age group, mainly because of economic reasons (additional costs), may additionally be complemented by a broader premises, that are relating to the entire population of young potential employees (inadequate qualifications in terms of the specialization of education and the expectations of employers).

In general, the above described factors affecting the level of unemployment by level of education of the unemployed, are the most common determi-

[12] In 2010 to Labor Departments and of the social policy from the Institute of the Work and the welfare a textbook was drawn up by experts for district employees and province job centres, which the methodology of the conduct of research of the demand for employees was drawn up in on regional and local labour markets. In spite of the wide share popularizing results of conducted works, in practice such action is applied in the limited way [Kryńska 2010].

nants in the case of the polish economy. You can, however, recognize that-at least in part-their importance can be seen in relation to the European Union as a whole, with the additional assumption of individual factors specific to the individual economies of the member countries.

Conclusions

Work in a market economy plays a very important function, especially the economic, and allows members of the society to live on level, which is commensurate to their expected level of style and quality of life. It is also important to perform its social function, allowing a natural introduction to the broader human social arrangements. People deprived of such opportunities, they lose not only their financial basis of life, but also the ability to active participate in the management process [Beck 2002, pp. 207–208; Szafraniec, Boni 2011]. The destructive consequences of lack of work are especially important for young people, which is why the constantly expanding scale of unemployment is a major problem for actions of employment policy, both in Poland and in the European Union.

Another problem is the accumulation of difficulties related to the professional activation of this group of people, despite the intensification of the aging process of population. These developments, as well as the observed deep economic crisis, whose origins lie in the mechanisms of the free market, set youthful aspirations for a great trial. Their dilemmas are felt by the leaders of most European countries. The documents and reports of the European Commission on the development strategy, the youth is treated as a natural reservoir of innovation and change. At the same time it is a social category, that the future-because of the conditions mentioned above-is a very uncertain and may pose a threat to the stability of the social order[13]. The biggest concern is the possibility of generating by the economic crises the so-called "lost generation", that means young, well-educated people who remain in isolation from the labor market and consume all the energy to solve their life problems. To avert this danger, in the European Union countries are made system solutions for employment, family policy, education, that are a result of researches and facilitate young people's involvement in the mainstream of social life [Szfraniec, Boni, 2011]. For this purpose there are taken various initiatives to support professional activity of the people to 30th years.

In Poland, for young people are particularly relevant services and labor market instruments, that will allow them to obtain qualifications or work experience, such as internships, vocational training of adults, postgraduate funding, financing costs of examinations or of obtaining the license, training loan, scholarship to continue education. The prepared draft amendments to the law on promoting employment and labor market institutions also provide new solutions, that can contribute to a better adjustment of aid offered by the county labor offices to the needs of their clients, including in particular young

[13] The foreign publications said that the realities of young people are tensions and contradictions, often causing social exclusion. [Reiter, Craig 2005, p. 31].

people[14]. These include: profiling of unemployed, individualized approach and activating the unemployed (Individual Action Plan), leading the unemployed from the moment of registration in the office by the same worker-client advisor. Due to the fact that the person to 30th years will be considered as people with a specific situation in the labor market, they will also have priority in access to special programs. It is planned to introduce new instruments, involving the release of employers who employ an unemployed person under the age of 30 years old, directed by the employment office, from the obligation to pay contributions to the Labor Fund and the Guaranteed Employee Benefits Fund for those employees, facilitating gain professional training through a refund of social security contributions for the unemployed to 30 year old taking their first job. Bearing in mind that young people are often the parents, with respect to them there will be applied new tools supporting the creation of workplaces and return to employ the unemployed, including people returning to work after a break associated with raising a child, which include: a grant for teleworking, activation service, the loan from the Labor Fund to create a job or start a business.

To facilitate an entry in professional life for young people would also postulate for :

- change of teaching programs, especially in the direction of increasing the range of practical knowledge conveyed youth;
- reconstruct the apprenticeship system, both at the secondary and higher level,
- introduction courses, that enable familiarizing young people with the functioning of the labor market and its specifics,
- informing young people about the opportunities arising from the conduct of their own business.

A very important role in this case would be assigned to the role of professional counselors, whose primarily actions should be an individual setting of graduates' career paths at secondary school level of education. No obligatory introduction of professional counselors to gymnasium seem to be, therefore, the most important factor of structural mismatches occurring on the Polish labor market.

Similar important meaning would have the forecast of the demand for workers, that predict information about the size of this demand. This could indeed result in improved young people's interest in fields of study that are interesting to employers. Attempts to formulate such a forecast for Poland was made in 2012 by the experts of the Institute of Labor and Social Affairs. It concerned the demand for work and was the result of research work carried out since 2011 in the framework of the project **"Development of an integrated system of forecasting and information to enable prediction of job"** carried out in the project **"Analysis of the processes taking place in the Polish labor market and social inclusion in the context**

[14] The need to strengthen efforts to smooth the entry of young people into the labor market also highlighted the authors of papers, appearing outside the Polish [Van Der Velden, Wolbers, http://www.roa.unimaas.nl/cv/vandervelden/pdf/integrationofyoung . pdf] – 26.12.2013 on access.

of economic policy". The task of building a system of forecasting and information to enable forecasting of employment, has been made under **Measure 1.1. System support for labor market institutions, Priority and Employment and Social Integration of the Human Capital Operational Programme** [Suchecki, Kwiatkowski, Gajdos, Włodarczyk 2013]**.**

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Value Added Intellectual Coefficient (VAIC™) as a Tool of Performance Measurement

Abstract: Measurement of the performance of organization is crucial for proper economic decisions. Traditionally, it was focused mainly on financial indicators, that in the Information and Knowledge Era are no longer sufficient and do not reflect in a transparent, complete and cohesive way the multi-dimensional outcomes of business units activities. With the increase of knowledge and other intangibles as the sources of competitive advantage and future viabilities of business units, the performance measurement process must be enlarged by new approaches and new indicators.

This aim of this article is to outline the evolution of the concept of measuring the companies' performance and to present one of the methods for evaluation of enterprises' performance – VAIC ™ – which by the definition of its author should satisfy the requirements of the New Economy [Pulic 2000, pp. 702–771]. This article focuses on highlighting the characteristics of this method and the algorithm of its calculation. It also attempts to assess the VAIC™ method, indicating its validity and usefulness. The practical example of VAIC™ calculation and interpretation in Polish media sector companies is used, covering the period of analysis of 2007–2011.

Key-words: VAIC, performance measurement, tools, accounting.

Introduction

Proper performance measurement depends on what we define as the objective of the company. In todays' economy surely not only the profit is an indicator of the company's success. Managers notice that it is vitally important to create value for shareholders and to make business go in the difficult times of crises. This is to large extent dependent on investment in human resources, information technology, research and development, and advertising; this factors help to maintain a competitive position and ensure the future viability [Canibano, *et al.* 2000, pp. 102–30; Nakamura 1999, pp. 15–30, Goldfinger 1997, pp. 191–220]. Investment in this resources or fields of business activity concern usually high expenses that lower the short-time profit but contribute to the long-term success of company. Therefore, apart from profit analysis and

basic financial ratios companies should take into consideration more complex measures of their performance. The proper measurement determines efficient management, therefore is crucial for any company. With the rise of knowledge management and intellectual capital the traditional tools of success measurement are no longer sufficient to analyze the impact of technology and human resources on the performance of organizations [Yang 2004, pp. 118–260]. The traditional measurement of companies performance based only on financial indicators is the subject of criticism in the literature [e.g. Johnson and Kaplan 1987; Kaplan and Norton 2002]. An answer to some of this criticism could be a performance measurement model developed by Pulic [1998, 2000, pp. 702–714; 2004, pp. 62–68] called Value Added Intellectual Coefficient (VAIC™).

In the first part of the paper we highlight the challenges of the knowledge-based economy to the management and accounting and then we shortly present the development of performance measurement methods, from the simple financial indicators to complex approaches taking into consideration non-financial outcomes of companies. Later, we focus particularly on VAIC™ method, indicating it as a tool of companies success evaluation. We analyze the applicability of this approach, its pros and cons, and interpretation of results.

In the second part of the paper we conduct an empirical analysis, following the prior studies on firm performance valuation based on VAIC™ method [Chen, *et al.* 2005, pp. 159–176; Shiu 2006, pp. 356–365, Ting and Lean 2009, pp. 588–599; Chan 2009, pp. 22–39; Chu, *et al.* 2011, pp. 249–276; Clark, *et al.* 2011, pp. 505–530; Komnenic and Pokrajcic 2012, pp. 505–530]. We adopt VAIC™ in order to measure performance of selected companies in Poland. The contribution of this study is the evaluation of performance of the Polish biggest media sector companies. It is believed that it is the first study on the media sector performance measurement in Poland based on VAIC™ method. This study contributes to the knowledge on performance measurement research and has practical implication important in the face of the Polish Stock Exchange attempts to encourage listed companies to include non-financial measures of business success to the information that they disclose.

The challenges of the knowledge-based economy and the evolution of performance measurement

The main concern of accounting measurement process are economic activities and financial results of business units. Today, the performance of a company may be understood as the degree to which a business unit completes its business objectives. This is a wide definition that goes beyond traditional understanding of a company success measured only in terms of income disclosed in the profit and loss account, calculated on an accrual bases and in some cases never physically collected. In today's world concepts as Intellectual Capital and Corporate Social Responsibility are the main issues of management and accounting [Sułkowski, Fijałkowska 2013a, pp. 60–75; 2013b, pp. 174–188].

Traditional measures, which were the focus of managers attention in the past, were based mainly on the financial results of entities such as net profit,

gross profit, EBIT, profitability ratios (ROE, ROA, ROS), the amount of cash flow or income from sales. The use of these measurements is associated with a number of drawbacks and limitations. They restrict the term "performance" of companies, overlooking in the assessment many important aspects of business activities. They are therefore considered not adequate and not meeting the needs of modern market. They do not satisfy the information needs of neither internal nor external stakeholders of the organization. The proper measurement of the businesses' performance depends also on what is defined as the principle target of business running. In today's economic realities surely the net profit cannot be treated as the only success indicator. Managers note that it is important to invest into intangible resources of company: in human resources, information technology, research and development – which determine the image of the company on the market, its growth and success and give a chance to the company to achieve a competitive advantage and ensure long-term financial success [Canibano, *et al.* 2000, pp. 102–30; Nakamura 1999, pp.15–30; Goldfinger 1997, pp. 191–220]. These investments involve large expenditures, which often result in a decrease of the current financial result (traditionally treated as an indicator of the achievements of the company), but contribute to the long-term profits of the enterprise. Hence, apart from data concerning the current financial outcomes it is crucially important to adopt a wider perspective of the business outcomes and introduce new measurements of business performance. Nowadays, current development of the business performance measurement concept extends measurement range to application of the quantitative but non-financial measures and the qualitative assessment (descriptive, narrative, evaluating for example customer satisfaction, quality of products or services).

Generally we may distinguish three phases in the development of the performance measurement approaches that closely follow the phases of management and managerial accounting development:

1. The first phase – the measurement of economic results of business units based exclusively on singular indicators, this used to be common in the initial period of the development of the capitalist system, characterized by a simple legal and organizational forms of economic units and mass production of uniform products. At this stage accounting focused mainly on the measurement of the financial income of the company and the calculation of the basic financial indicators, profitability and the realization of budgets.
2. The second phase – the measurement based on the use of different categories of financial ratios. It is typical to the period of advanced industrial capitalist development, greater international movement of capital, higher importance of capital markets, enlarged size of companies, increased customer requirements. Accounting in this phase focuses on measuring the effectiveness of invested capital and on the liquidity issues. The performance measurement is based on a complex systems of financial indicators, such as the Altman and DuPont indicator systems.
3. The third phase – the measurement is based on the diversified measurements, It is typical to the period of globalization of markets, very high

capital mobility, the rapid flow of information, complex and rapidly changing organizational structures, short product life, high demands from the customers. In that conditions we may generally indicate three different approaches to the performance measurement that reflect the three concepts of the main aim of the business unit:

- shareholders value measurement concept (EVA, SHV, economic profit),
- stakeholders value measurement concept (balanced scorecard, EFQM model),
- Intangibles value measurement (including VAIC™ method).

The literature review provides several categories of the performance measurement methods; approach based on the economic concept of the production function [Lim and Dallimore 2004, pp. 181–194], methods that use a combination of financial and non-financial data, e. g. the Balanced Scorecard [Kaplan and Norton 1992, pp. 71–79], Intangible Assets Monitor [Sveiby 1997], Skandia Navigator [Edvinsson and Malone 1997]. These methods are often criticized for the difficulty of access to data for their preparation. They are generally only useful to those who are inside the company (management) and have free access to internal information. Investors, analysts and other external users of enterprises information that has to focus on the data disclosed by companies are not able to take advantage of these methods. In addition, these methods are time-consuming, complex and provide descriptive information, so difficult in interpretation and in making comparisons. As an answer to this criticism Value Added Intellectual Coefficient (VAIC ™) method may be proposed.

The VAIC™ Method

The Value Added Intellectual Coefficient (VAIC ™) method was developed by Alen Pulic, professor at the University of Zagreb and Graz, the Austrian founder of Intellectual Capital Research Centre. This method is assumed to measure the effectiveness of key resources in the enterprise. It was also used to measure the efficiency of regions in Croatia.

Pulic [2000, pp. 702–714] assumes that the traditional accounting is based on cost control, while today it is necessary to focus on value creation and value management. Business should concentrate on the long-term growth. In order to manage value, first it must be measured. Traditional indicators of business success, such as revenue growth, cash flow, profit, market share and market leadership, do not provide information about whether the company actually creates value for the shareholders / owners. The ability to create value for the company has become a new criteria of success. Moreover, the main field of investments for companies are usually intellectual resources. Tangible effects of value creation process (profit, higher price per share) are dependent on the intangible forms of value creation (increased speed and efficiency of communication, better relationships with customers, ability to create and maintain good reputation, investment in human resources). VAIC™ indicator is a performance measurement that is assumed to be able to

meet the requirements of modern economy, measuring the effectiveness of key resources in the enterprise.

The VAIC™ method relies on the concept of value added as the measure of performance, relative to intellectual capital [Laing *et al.* 2010, pp. 269–283]. It consists of the sum of three component ratios, i.e. human capital efficiency (HCE), structural capital efficiency (SCE), which embraces both internal and relational capital efficiency, and capital employed efficiency (CEE) which includes physical and financial capital efficiency. HCE and SCE constitute intellectual capital efficiency (ICE). Therefore, in order to arrive to the final measure, the VAIC™ model involves the calculation of several variables and coefficients, embracing seven steps that are presented in the table below.

Table 1. VAIC model

Steps	Variable	Formula	Variables operationalized
1	Value added (VA)	VA = OP + EC + D + A	OP = operating profit EC = Employee Costs D = Depreciation A = Amortization SC = Structural Capital HC = Human Capital SC = VA – HC CE = Book value of net assets
2	Intellectual capital (IC)	IC = EC + SC	
3	Human capital efficiency (HCE)	HCE = VA / HC	
4	Structural capital efficiency (SCE)	SCE = SC / VA	
5	Intellectual capital efficiency (ICE)	ICE = HCE + SCE	
6	Capital employed efficiency (CEE)	CEE = VA / CE	
7	Value added intellectual coefficient (VAIC™)	VAIC = ICE + CEE	

Source: Own work.

VAIC™ indicator may be perceived as the determinant of the company's success. It measures the efficiency with which a firm uses its physical, financial and intellectual capital to enhance stakeholders value. The higher its value, the more favorable it is for the enterprise and the greater the ability to create value. Aggregated VAIC™ helps to understand the total business efficiency and indicates its "intellectual capacity". It measures how much of the new value has been created with the resources invested in monetary units. The high rate of VAIC is associated with a high level of value creation through the use of corporate assets, including intangible resources.

The process of calculation, initially presented by Pulic [2000, pp. 62–68] was later reaffirmed by Kujansivu and Lonnqvist [2007, pp. 72–87] and additionally advanced by Nazari and Heremans [2007, pp. 595–609]. In the empirical part the original Pulic was applied.

Assessment of VAIC™ method – validity and usefulness

The VAIC™ model uses the data from traditional financial statements to analyze value creation efficiency. According to Andriessen [2004, p. 184] this makes this method a better tool for analyzing intellectual capital primarily because the data is publicly available. Moreover, the data is quantitative and not based on judgment as in case of qualitative data frequently used in other performance measurement methods. The data used is externally verified by an independent auditor that gives more credibility to the entire approach [Williams 2001, pp. 192–203; Firer and Williams 2003, pp. 1–18], provides a far more objective and verifiable results and leaves not much place for the subjectivity that is a frequent accusation against many other performance valuation concepts. VAIC™ is built on basic data collected in a simple way. Schneider [1998] argues that the more sophisticated the procedures to collect and process the data, the higher the danger that data collection and processing become ends in themselves. He maintains that VAIC™ is the result of simplifying process that enables cross-sectional comparisons. VAIC™ allows the comparison between companies and gives a chance of a quick identification of the companies with the greatest potential to value creation in the analyzed sample. The use of principles and propositions concerning this concept of performance measurement should broaden the general applicability of VAIC™. This as a result could support process of management in companies.

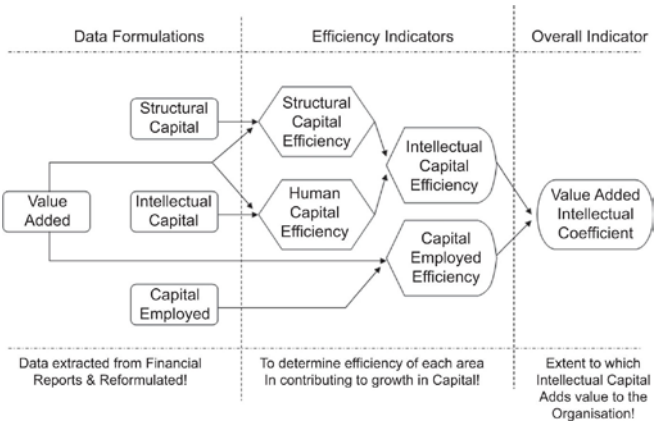
However, it should be also taken into consideration, that there are some shortcomings and disadvantages concerning VAIC™ method. One of the weaknesses is concerned with too far-reaching simplification of the definition of human capital valuation at the labor costs that leads to an underestimation of its value, compared with other methods. In addition, it is possible that the company is using its resources inefficiently, but it is masked by the more efficient use of other inputs, leading in effect to similar levels of total VAIC™ indicator. The VAIC™ method cannot be performed on firms which disclose a negative book value or negative profit, as in that cases the input is higher than its output, resulting in incorrect productivity. Chu *et al.* [2011, pp. 249–276] indicate also the problem of inverse relation between HC and SC that can cause difficulty to establish the exact weight of each element when calculating the overall IC valuation. Andreissen [2004, p.186] criticises some of the methodological issues concerning VAIC™. Among other things, he disagrees with the treatment of all expenses related to employees as assets (value of human capital). Assets of the company are related to the achievement of future benefits and all the elements that will not work for future benefits should be expensed in the income statement. He point out that some of the costs associated with employees can be a source of benefits in the future (e.g. those related to training and development of employees), but a large part of this expenses should be directly placed in the income statement. He adds that even if we treat all the costs associated with employees as assets, the majority of them should be immediately (in the same accounting period) amortized as there is no reason to assume that they will benefit in future periods. Andriessen also challenges the validity of the calculation of intellectual capital as the residual value of two values: the value added and human capital. This ap-

proach means that for example when operating result is negative, the structural capital of the company shall be negative as well, which is inconsistent and illogical. The frequent criticism of this methods concerns also the assumption that VAIC™ value is a result of summing up of partial indicators. This may lead in some situation to illogical results. Stahle *et al.* [2011, pp. 531–551] carry logical and empirical analysis of VAIC™ method and as a result he undermines some of its assumptions and highlights certain too far reaching simplifications. Therefore, while applying this method one should be aware of its weaknesses but also of the fact that there is no perfect way to capture, measure and disclose the complexity of business organization.

VAIC™ method as a performance measurement of Polish media sector

The sample selection for the empirical research involved identification of companies operating in the media sector. Only listed public companies listed on the Warsaw Stock Exchange (WSE) were taken into consideration as the access to their data is free and easy. The empirical study is restricted to the four biggest companies from the media sector in Poland that should work as a practical example of VAIC™ calculation and interpretation of results. The restricted number of companies may be a limitation of the generalization of results, however the analyzed companies are the major players in the Polish media market. This four companies together account for 94,31 % of the whole media sector on the WSE. The research covers a period of 2007–20011. Media sector was chosen because it is assumed highly based on intangible resources. We investigate empirically the value of VAIC™ in the analyzed companies. We calculate the value of VAIC™ following the steps presented in the table 1 that can be also summarized as it presented in the figure 1.

Figure 1. Overview of the VAIC™ model



Source: Laing, et al. 2010.

The table below (table number 2) presents the elements of VAIC index value for the sample of companies in analyzed years.

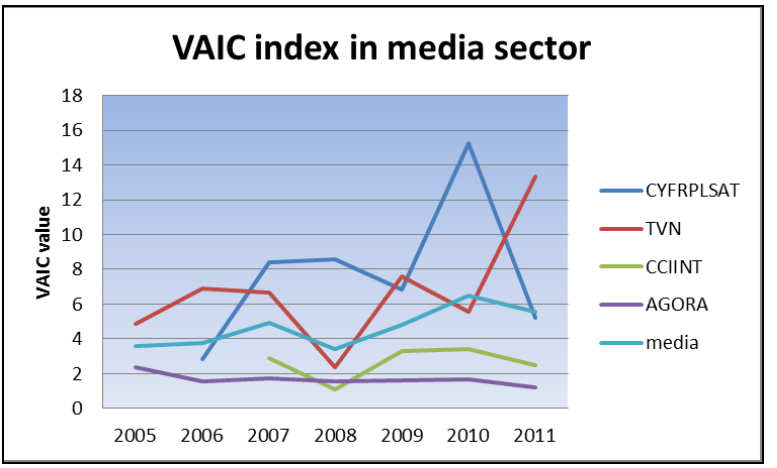
Table 2. Calculation of the elements of the VAIC™ index in 2007–2011 in the four biggest Polish companies of media sector

Name of the company	Variable	2007	2008	2009	2010	2011
Cyfrowy Polsat	OP	145857	323538	277335	948391	309388
	HC	39755	59554	69862	76616	94041
	VA	185612	383092	347197	1025007	403429
	SC	145857	323538	277335	948391	309388
	CE	62436	296336	327815	1059036	2503076
	IC	185612	383092	347197	1025007	403429
	HCE	4,668897	6,432683	4,969755	13,3785	4,289927
	SCE	0,785817	0,844544	0,798783	0,925253	0,766896
	ICE	5,454714	7,277227	5,768537	14,30375	5,056823
	CEE	2,972836	1,292762	1,059125	0,967868	0,161173
	VAIC	8,42755	8,569989	6,827662	15,27162	5,217996
TVN	OP	447559	107267	686679	549573	1607964
	HC	96806	132320	127047	158091	149639
	VA	544365	239587	813726	707664	1757603
	SC	447559	107267	686679	549573	1607964
	CE	2503076	2503076	2503076	2503076	2503076
	IC	544365	239587	813726	707664	1757603
	HCE	5,623257	1,810664	6,404921	4,476308	11,74562
	SCE	0,822167	0,447716	0,84387	0,776602	0,914862
	ICE	6,445424	2,25838	7,248791	5,25291	12,66048
	CEE	0,217478	0,095717	0,32509	0,282718	0,702177
	VAIC	6,662902	2,354097	7,573881	5,535627	13,36266
Cinema City International	OP	76640	-2004	120876	145396	98916
	HC	68552	81284	84820	95224	123904
	VA	145192	79280	205696	240620	222820
	SC	76640	-2004	120876	145396	98916
	CE	617052	640104	719236	867200	908800
	IC	145192	79280	205696	240620	222820
	HCE	2,117983	0,975346	2,425088	2,526884	1,798328
	SCE	0,527853	-0,02528	0,587644	0,604256	0,443928
	ICE	2,645836	0,950068	3,012732	3,13114	2,242256
	CEE	0,235299	0,123855	0,285992	0,277468	0,24518
	VAIC	2,881136	1,073923	3,298725	3,408607	2,487436
Agora	OP	58500	37500	43500	55537	814
	HC	233369	256802	215125	222117	232345
	VA	291869	294302	258625	277654	233159
	SC	58500	37500	43500	55537	814
	CE	1107400	1058500	1084500	1131816	1134829
	IC	291869	294302	258625	277654	233159
	HCE	1,250676	1,146027	1,202208	1,250035	1,003503
	SCE	0,200432	0,12742	0,168197	0,200022	0,003491
	ICE	1,451108	1,273447	1,370405	1,450057	1,006995
	CEE	0,263562	0,278037	0,238474	0,245317	0,205457
	VAIC	1,714671	1,551484	1,608879	1,695374	1,212452

Source: Own work.

On the bases of this data we may summarize the results concerning the value of VAIC™ index in the analyzed period in the form of the graph number 1.

Graph 1. VAIC™ index in the four biggest Polish media sector companies



Source: Own work.

The graphical presentation of the results of calculations shows clearly the trend of the VAIC™ index in the analyzed period and the differences between companies. It indicates a leader of the group in the particular year. VAIC™ index is a measure of the success of businesses. The higher the value, the more favorable it is for analyzed enterprise. In 2011 the highest score was achieved by TVN company, it accounted for 13,36. It means that every 1 PLN invested in this company creates 13,36 PLN of additional value. The higher the index, the greater the ability of the company to create value and the better the efficiency of the resources utilization. In all analyzed companies in the sample the VAIC™ indicator reached a positive value. Also the media value for the sector is high. It indicates generally high intellectual capacity of the companies in the sample. Two companies – TVN and Cyfrowy Polsat place themselves almost in the whole analyzed period above the media of the whole sector, however it is worth noticing that Cyfrowy Polsat that was a leader of the sector in the last year observed a sudden sharp decrease in its value. Anyway this company still maintains a high level of the index and every 1 PLN invested in it created more than 5 PLN of additional value.

Conclusions

The value of companies is nowadays based on more than physical assets. The success of the companies is determined by the creation and management of intangibles. Therefore, in the Knowledge Era it is necessary to extend the toolbox of performance measures with non-financial measurement approaches. VAIC™ seems to be an important proposal of this measures. It can

be treated as an significant supplement to the traditional approaches in the analysis of financial statements and performance evaluation. The VAIC™ concept presents a robust tool for performance judgment. It can be used by management to assess the efficient use of companies' resources and outcomes of strategic and tactic actions of a business. As the data is publicly accessible it can also be a very useful indicator for outside stakeholders while taking economic decisions. Some weaknesses and shortcomings are associated with this method and we surely cannot state that this is a perfect approach to complete and absolutely correct performance measurement of companies in today's business conditions. Surely, however, this method significantly extends the range of analysis of companies' performance, involves a wider spectrum of variables to be taken into a consideration and in this way can be accepted as an additional useful tool of assessment of business outcomes.

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The Usefulness of Integrated Reports for Stock Market Investors*

Abstract: The huge risks associated with decisions made by key players in the capital market, i.e. investors, encourage them to explore any useful information. Therefore, stock market investors have an increasing interest in expenditures and achievements in all aspects of business activities of any corporation in which they may invest. Traditionally, they look for financial information, and increasingly for non-financial information as well, that all are about activities which are determined by and have implications to the natural environment, the society, and corporate governance (ESG). As a result, this information creates the image of Corporate Social Responsibility (CSR), and investors, who in the construction of investment portfolios take into account non-economic criteria, create Socially Responsible Investment (SRI) market.

The aim of the paper is to highlight the need to satisfy market investors' expectations of CSR information by the companies listed on the stock exchange. Secondly, the aim of this paper is to indicate characteristics that make financial and non-financial information presented in Integrated Reports useful for stock market investors.

As a result it has been confirmed that there is a need to produce business reports in which corporate approach to social responsibility is taken into account. Moreover, characteristics of non-financial information which are about their usefulness for investors in the process of decision-making have been identified and whether market regulators show an interest in integrated reporting has been established.

Key-words: Integrated Report, qualitative characteristics of information, stock market investor, Socially Responsible Investor

Introduction

The inspiration for this article was the fact that despite over 20 years of academic considerations of integrated reporting and the preparation of Inte-

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grated Reports, the real explosion of this practice has been observed only for a few past years. What is more, with the creation of the International Integrated Reporting Committee (IIRC) in 2010, integrated reporting has been catapulted onto the world stage so it has a chance to become a common business practice.

It is considered that increasing interest of enterprises and their business environment in expenditures and achievements in all aspect of the corporate activity – the economic and environmental, social and governmental (ESG), is the determinant of the development of the concept and practice of Integrated Reporting. Reports which would at the same time take into account all these aspects of business activities (disclose financial and non-financial information), were issued after Elkington presented his self-developed concept of triple bottom line [Elkington 1997]. Only after that companies began to take on a larger scale an initiative of the so-called Integrated Report (IR) publication. From year to year integrated reporting meets the growing interest of business practitioners and regulators.

Business report is a way of communication of any enterprise with its business environment. In addition to globally well-established theory, practice and legal regulations of financial reporting, non-financial reporting is still imperfect. History of environmental, social and governmental reporting is relatively short. By the beginning of the twenty-first century this practice became quite popular. However, only a few countries implemented some regulations relating to the CSR reporting. In countries such as Denmark, France, Malaysia, South Africa, the United Kingdom, the United States, the CSR reporting obligation applies to selected groups of enterprises or certain areas of CSR. Financial statements and other reports about environmental, social and governmental issues do not meet the expectations of the business environment for useful decision-making information. They do not deliver information in a timely and consistent form so as to show cause-effect relationships between financial and non-financial aspects of the business activity of the reporting enterprises. The solution to this problem seems to be Integrated Report. Integrated reports were the subject of the work of many researches, e.g. Eccles et al. [2010], Krzus [2011, pp. 82–88], and non-governmental organizations such as International Federation of Accountants [2012] or international business consulting firms, e.g. KPMG [2012a, 2012b] as well. In 2010 Eccles and Krzus [2010] stated that "Integrated Reporting" is an important concept of our times. Other researchers indicate the benefits and possibilities of inclusion of these reports into XBRL system [Bogdan and Popa 2008, pp. 983–990, Mora Gonzálbez and Mora Rodríguez 2012, pp. 59–91]. The need for assurance of these reports is pointed out by Collison and Gray [1997, pp. 135–149], Tozer and Mathews [1994, pp. 5–8]. According to the author of this paper, all these works lack the study about the usefulness of the newest form of corporate reporting – Integrated Reports for the group of stakeholders which probably has the biggest impact on todays' market economy – the stock market investors.

Therefore, the paper is intended to confirm that there is a need to satisfy stock market investors' expectations for CSR information by the Integrated

Reports and indicate qualitative characteristics of non-financial information presented in Integrated Reports which determine the usefulness of these information and reports for making decisions by stock market investors.

In this article the method of analysis of the legal framework for business reporting illustrating the attitude of regulators to the new form of communication that Integrated Reports are, has been used, and the literature in the field of socially responsible investing and business reporting as well as business practices in this area as well. Moreover, the study used the method of deduction assuming that if certain qualitative characteristics of financial information ensure the usefulness of financial statements, identical characteristics of any information enclosed in Integrated Reports determine the usefulness of these reports.

In conclusion it was confirmed that the capital market has a huge impact on the today's global economy. It was found that stock market investors' needs could be met by Integrated Reports and that specific qualitative characteristics determine decision-making usefulness of these reports.

1. The importance of the stock market investors for the market economy

In market economies stock market investors are the major supplier of the capital. During last 25 years (1987–2011) the number of listed domestic companies raised 1,5 times (form almost 30 000 to almost 50 000) and their market capitalization raised five times during the same period (from over 9 to 45 billion[1] US$) [World Bank 1 online, 2 online]. The value of share trading at the largest stock exchange, NYSE Euronext (US), was over 9 billion US$ year-to-August 2013 [World Federation of Exchanges 2 online], domestic market capitalization in 2012 was over 14 billion US$ [World Federation of Exchanges, 1 online] and the world market capitalization in 2012 was over 53 billion US$ [World Bank 2013]. Market capitalization of stock exchanges by region in August 2013 is presented in table 1.

Table 1. Market capitalization of stock exchanges by region in August 2013

Region	Domestic market capitalization of a stock exchange (millions US$)	Number of listed companies
Americas	25 233 954,4	10 303
Asia – Pacific	16 994 066,9	22 987
Europe - Africa - Middle East	15 190 935,6	12 249
WFE Total	57 418 957,0	45 539

Source: World Federation of Exchanges 2 online.

Domestic market capitalization of the Warsaw Stock Exchange in August 2013 was almost 173 milliard[2] US$ [Warsaw Stock Exchange 2013] that was 1,15% of Europe – Africa – Middle East region.

[1] Billion = 10^{12}.
[2] Milliard = 10^{9}.

Moreover, the market capitalization of listed companies all over the world reported in 2011 was at 67.8 % of GDP [World Bank 2013]. In some countries the total value of the issued shares of a publicly traded company were worth more than gross domestic product which demonstrates the level of these countries' market development (see table 2).

Table 2. Highest market capitalization % of GDP in 2011 and Poland

Country	Market capitalization % of GDP
Hong Kong SAR, China	357,7
Switzerland	141,4
Malaysia	137,2
South Africa	130,2
Singapore	125,8
Barbados	124,1
United Kingdom	118,7
Luxembourg	114,2
Chile	107,6
Canada	107,2
United States	104,3
Poland	18,6

Source: World Bank 2013.

Therefore, special needs of stock market investors should be taken into consideration. Huge risks of investing determine high expectations for transparent picture of enterprises' in all aspects of their activities, such as financial and environmental, social and governmental, at the same time. In addition, investors increasingly appreciate benefits of corporate social responsibility, resulting from incorporation of CSR into business strategies. So in their investment decisions they analyze more and more information about the impact of the listed companies on the natural environment and society. Their investment portfolio balances both financial goals and social, environmental and corporate governance considerations. As a result the participation of the socially responsible companies in their investment portfolio is still increasing. This group of investors is called Socially Responsible Investors (SRI). They may choose among five common strategies to create their Social Responsible Investing (SRI) portfolios: screens, best-in-class, engagement, shareholder advocacy, integrated (see more: Fung et al. 2010).

The group of Socially Responsible Investors is constantly increasing in strength which is evidenced by the growing number of the world's stock indices of socially responsible companies. The first Dow Jones Sustainability World Index was launched in 1999. Nowadays there is a Dow Jones Sustainability Indices (DJSI) – a broad family of global, regional and country DJSI benchmarks. DJSI-based investment vehicles including mutual funds, separate accounts, notes, as well as exchange traded funds (ETF), in 15 countries worldwide in 2012 had the value of 6 billion US$. The biggest index, DJSI

World, consists of 340 components [SAM Sustainable Asset Management AG 2013]. Another leading index is FTSE4Good Index Series that encompasses four tradable and five benchmark indices. The value of assets under management in 2010 was over 10.1 billion US$. In March 2011 there were 894 constituents in the FTSE4Good Global Index [FTSE Group 2011]. Respect Index, the first CSR index in the Central and Eastern Europe, executed by Warsaw Stock Exchange, is composed of about 20 companies whose assets are worth about 20 milliard US$ [GPW].

From 2005 to 2010, SRI assets all over the world have increased more than 34 percent while the broader universe of professionally managed assets has increased only 3 percent. [Social Investment Forum Foundation 2010].

What is more, it is believed that corporate socially responsible activity is highly integrated with the level and volatility of the global stock market. Capital markets, however, do not seem to fully take into account ESG factors (non-financial information). If they eventually analyze these factors, the expectations for profits will change because ESG factors can "steer" the value of the company in a long term [see more: Unicredit 2010]. It was confirmed that "companies with better management of and performance on ESG issues are likely to make better investments over the longer-term [...]. However, there is, as yet, no universal agreement on how best to integrate ESG issues into investment processes [...]. All of these factors mean that measuring the investment outcomes of integrating ESG issues into investment research and decision-making processes is very difficult. However, a number of studies have found positive results" [UNPRI 2013].

Hence high and very specific information requirements have been recommended to institutional investors in The Principles for Responsible Investment (PRI). PRI initiative has achieved over 180 leading institutional signatories from all around the globe, representing in excess of 8 billion US$ in assets under management [UNPRI 1 online] so as it is a significant voice in ESG reporting. This document obliges investors to seek appropriate ESG disclosures by entities in which they invest. Moreover, the request to the regulators to harmonize ESG reporting (based on the G3.1 Guidelines) was sent and request to the reporting entities to integrate ESG disclosures with financial information in annual reports as well [UNPRI 2 online]. One, and probably the best option under the present condition, seems to be Integrated Report, provided, however, some qualitative characteristics of information that make IR useful for stock market investors as well.

2. Qualitative characteristics of useful Integrated Report

In economic decision-making process, also investment, financial information is mainly used. Qualitative characteristics of financial information have been constituted for long time, for instance in IAS/IFRS[3] or US GAAP[4], and are defined as those properties of information necessary to make it useful.

[3] International Accounting Standards / International Financial Reporting Standards.
[4] United States General Accepted Accounting Principles.

According to Chapter 3 Qualitative Characteristics of Financial Reporting of the Conceptual Framework of Financial Reporting (a joint project between the International Accounting Standards Board and the US Financial Accounting Standards Board), the fundamental qualitative characteristics of financial information are: relevance and faithful representation. Moreover, materiality is an element of 'relevance'. However, the Boards have clarified that materiality is an entity-specific aspect of relevance based on the nature or magnitude of items to which the information relates, which cannot be specified in general terms to encompass every situation. Faithful representation replaces the previously used term 'reliability', as the Boards determined there is a lack of common understanding of reliability. Anyway, the point is still the same – to make the information trustworthy (reliable) and vital for its users.

According to Eccles [2011 p. 14] integrated reporting is "reporting in a single document the material measures of financial and non-financial (i.e. environmental, social and governance) performance and their relationships to each other [...], establishes the discipline for integrated internal management of financial and non-financial performance and best way to report on a sustainable strategy". In this way, IR combines the most relevant information that have been recognized in the financial statement and other business reports into a coherent whole.

According to the authored this article, for the success of the concept of integrated reporting involving the co-existence of financial and non-financial information there is a need of identical characteristics that ensure high quality of the information – materiality and reliability. Generally, the information is material if placed in the context of other information is relevant to making decisions, affect decisions [Eccles et al. 2011, p. 9].

Another characteristic that determine the usefulness of any information and Integrated Reports as well, is reliability. The reason for doubt or even denial, that the image of CSR achievements presented in business reports is reliable, is believed to be the absence of regulations. There is a plurality of many frameworks, recommendations and standards for the preparation of these reports. Consequently, the content of the reports differ one from another, the reports are not prepared regularly, which means that the information is not comparable; there is flexibility as to who prepares the report in the company, how the process of preparing the report looks like, how the selection of issues presented in the report is made, and finally, whether the reliability of the report is confirmed or not.

The reliability of the report, especially desired during the current economic crisis, also called the crisis of confidence, can be ensured by applying reporting standards and assurance standards. Therefore, the work of the International Integrated Reporting Committee (IIRC) is important. The ambition of this organization is to bring together financial, environmental, social and governmental information, prospective and retrospective as well, in a clear, concise, consistent, comparable and credible format to meet the needs of the investor community as the primary audience for Integrated Reporting and as a guarantor of a more sustainable, global economy. In 2011, IIRC launched a discussion paper *Towards Integrated Reporting. Communicating*

Value in the 21st Century, in which the idea of Integrated Reporting was widely announced. The purpose of this document is to support the development of an International Integrated Reporting Framework (IIRF). As stated in this document, "Integrated Reporting combines the most material elements of information currently reported in separate reporting strands (financial, management commentary, governance and remuneration, and sustainability) in a coherent whole, and importantly:

– shows the connectivity between them; and
– explains how they affect the ability of an organization to create and sustain value in the short, medium and long term" [International Integrated Reporting Committee 2011, p. 6].

To strengthen the reliability of Integrated Report, that may be prepared in accordance with IIRF, one should use at least one of the two currently used assurance standards:

– International Standard for Assurance Engagements 3000 „Assurance Engagements Other Than Audits or Reviews of Historical Financial Information" (ISAE3000), published in 2003 and currently revised in 2011 by International Federation of Accountants (IFAC) – International Accounting Assurance Standard Board (IAASB). ISAE3000 contains the basic rules and procedures for all assurance orders (other than audits or reviews of historical financial information) related to environment, social or sustainable development reports, informatics systems, internal control, and corporate governance, and compliance with awarding grants, agreements and regulations;
– AA1000 Assurance Standard 2008 (AA1000AS); published in 2003 and revised in 2008 by AccountAbility. AA1000AS provides extensive verification of the quality of reported information on sustainable development, particularly information on management and outcomes. Both of these standards can successfully attest credibility of Integrated Reports.

At the same time, market regulators should prepare the solid legal basis for the development of the practice of communicating corporate social responsibility in a form of Integrated Reports, one that could be realistic and implemented, not in compliance with the expectations of investors.

At the end of 2010, the European Union launched a public discussion on the issue of disclosure of non-financial information by companies, including the Integrated Report [The European Commission 2010]. The majority (about 70%) of the respondents supported the concept of integrated reporting. However, some respondents expressed hesitation towards the Integrated Reporting, which indicates that in order to make it the mainstream of reporting in companies, further efforts are needed for its development.

In 2011, integrated reporting became a subject of interest in the International Accounting Standards Board (IASB). In Board's agenda for the coming years, which underwent public consultation, it was suggested that integrated reporting can be one of the areas that can be tested, because of the opportunity to play a key role in the future development of financial reporting, and thus may be included by the Board in the process of creating standards [International Accounting Standards Board 2011, p. 10]. In general, the Board

received a number of responses to justify that, in the coming years, it would not engage in integrated reporting. All in all, it is quite improbable that the Board in the near future develops a standard for integrated reporting, or even enlargement of existing standards of social responsibility issues. Thus there is little chance in the near future to create a globally acceptable standard of Integrated Reporting, which, in addition, as MSSFs, could become widely mandatory. Undoubtedly, a certain force in pulling mandatory Integrated Reporting forward was South Africa with its first requirements for Integrated Reports for years commencing on or after 1 March 2010 from companies listed on the Johannesburg Securities Exchange (JSE).

Market regulator reserve to integrated reporting could not stop the development of this practice. In one of the biggest database with CSR reports yet in 2002 there was 1 Integrated Report registered among 132 all reports (less than 1 percent), in 2010 Integrated Reports accounted for 14 percent of all reports, and in 2012 – 17 percent (more than ever before) [Global Reporting Initiative]. Despite the fact that in the vast majority of countries, CSR reporting as well as Integrated Reporting is issued on the voluntary basis, the highest degree of Integrated Reporting is practiced in Brazil, Germany, South Africa, Sweden and the United Kingdom, therefore companies from these countries are recommended to continue to exercise leadership in order to help creating a more sustainable global society [Eccles and Serafeim 2011].

Moreover, the practice of reporting (understood as a part of the practice of accounting) cannot exist without theory of reporting (accounting), as confirmed by Burzym. "Accounting theory is closely related to accounting practice, because it is formulated on the basis of practice, and at the same time – provides the basis of the accounting practice..." [Burzym 2008, p. 76]. The development of the foundations of Integrated Reports of dimension to Conceptual Framework of Financial Reporting would allow for creation a global platform for tailor-made reporting [Sobczyk 2013, p. 164].

Conclusion

With a view to unquestionable interaction between companies and their environment (natural, social and internal), it is not surprising that this environment is interested in this interaction and its consequences. Specific information needs are expressed by stock market investors. Turbulent environment is fraught with risks of investing but a responsible investor is able to protect itself against it with appropriate information – primarily relevant and reliable, but also clear, up-to-date, comparable, verifiable, complete and consistent. Stock market investors should have a special consideration in listed companies because they play the key role in the capital market – one of the most important part of the modern, developed economy. A group of Socially Responsible Investors, who pay special attention to non-financial information, is growing in strength. On the other hands, companies that are conditional on the stock market or are just aware of the benefits of integrated reporting, listen to the information needs of investors. Thus integrated reporting practice is more and more popular all over the world. It seems that the best form of corporate communication with the investors is Integrated Report. It can be used

to reveal the relationships between financial and non-financial (environmental, social and corporate governance) aspects of the organization and broad and long-term consequences. Since the financial and non-financial information contained in Integrated Report, should coexist and interact, they should have identical qualitative characteristics, primarily relevance and reliability. The problem is quite conservative approach of market regulators to this new form of reporting. One of the few organizations really interested in development of integrated reporting regulations is International Integrated Reporting Committee. But certainly, in a long term Integrated Reports have a chance to become a required and satisfactory source of information ensuring transparency of enterprises.

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Public Debt under Financial Crisis in the New EU Member States

Abstract: With the growing imbalance of public sectors in the EU Member States, the public debt in the countries increased too. Public debt management institutions face the task of choosing the optimal debt structure in order to minimize the negative effects for the economy.
This article sets out to determine changes in the public debt structure in the EU Member States during economic crisis. It consists of four sections. Section one deals with public debt management under crisis conditions. In the next sections, the term, currency and lender structure of public debt in the new Member States are analysed and discussed. The last section presents major conclusions from the research.
Key-words: Public debt, financial crisis, new EU Member States.

Introduction

In today's world public debt is an inseparable characteristic of most free-market economies. Institutions managing public debt must determine its structures to minimize its negative impacts on the economy. This article seeks to identify changes in the structure of public debt in new EU Member States during economic crisis, which reflect the countries' approach to public debt management and the situation of their public finance sectors affected by economic instability. To accomplish this purpose, the following research hypotheses have been formulated:

- to cope with the rising borrowing needs of the public sector in the period of crisis, the public debt management institutions increased the value of short-term borrowing,
- most of the debt incurred by the public debt management institutions was denominated in national currencies in order to reduce the exchange risk.
- the share of financial institutions in the lender structure of public debt increased in the period of crisis, as these institutions sought for low-risk investment instruments,

In the article, the public debt in all the new EU Member States is analysed by its term, currency and lender structure. To ensure comparability between countries, the data on entire public finance (General Government) sectors are

used (and not only those showing the State Treasury's debt). The period of research covers the years 2007–2012. The "new EU Member State" is defined in the article as the country which joined EU structures in 2004 or later, with one exception: Croatia was excluded for the research, as it joined EU structures in 2013 (after the end of the research period).

1. Public debt management under economic crisis

Public debt management is extensively covered in both Polish and foreign literature [see, for instance, Marchewka-Bartkowiak 2011; Aldrich 1949]. In the broad sense, it can be defined as this part of the state's budget policy where decisions on how much of the projected spending will be funded with debt are made (this effectively translates into the amount of public debt); in the narrow sense, public debt management consists of all decisions on the manner of financing the state's borrowing needs (and thereby on the structure of public debt). In this article, public debt management is considered in its narrow meaning, given that the institutions managing countries' public debt do not make decisions about its amount (which is treated here as an exogenous variable the value of which is determined by the state's budget policy), but about its structure, including debt maturities, the type of lenders, or currency. These decisions have a bearing on the type of debt instruments and the type and values of interest rates that will be used, as well as having some effect on the future exposure to various risks (including refinancing or exchange risks).

The permanently imbalanced public finances causing public debt to grow have made investors less trustful in the Treasury debt instruments that until recently were considered non-risk or risk-free [Dębski 1997, p. 49]. The public debt management institutions have to work harder and harder to attract investors and to make the instruments more appealing to them. In most cases, the tool used to boost investors' demand is higher interest rates on public debt instruments. This approach increases financial strain on future budgets because more money will be needed to service debt, making public finances even more imbalanced. The interest rate on the Treasury debt instruments is losing its significance as a point of reference for financial market transactions [for details see: Fedorowicz 1997, p. 159; Scott et al. 2008, pp. 219–220] in many countries. Alternative solutions are sought instead, the need for which had been signalled in the literature long before the recent financial crisis occurred [see, for instance, O'Leary 2001].

The public debt-to-GDP ratio increased between 2007 and 2012 in all new EU Member States (see table 1). The increase ranged from ca. 8% in Bulgaria to over 350% in Lithuania. – the average for all the EU Member States rose form 59% in 2007 to 85,3% in 2012. These circumstances cause that public debt management becomes particularly important [Dooley 2000, pp. 45–59]. The literature on this subject emphasises its special role not only in periods of economic slowdown [Easterly, 2001], but also during economy's exposure to excessive debt [Sutherland 1997, pp. 147–162], currency crises [Benigno, Missale 2004, pp. 165–188], and even in times of sustainable development [Nicu, Georgeta 2011, pp. 365–371].

Table 1. Public debt in the new EU Member States (as % of GDP)

	2007	2008	2009	2010	2011	2012
EU	59,0	62,3	74,6	80,0	82,5	85,3
Bulgaria	17,2	13,7	14,6	16,2	16,3	18,5
Cyprus	58,8	48,9	58,5	61,3	71,1	85,8
Czech Republic	27,9	28,7	34,2	37,8	40,8	45,8
Estonia	3,7	4,5	7,2	6,7	6,2	10,1
Hungary	67,0	73,0	79,8	81,8	81,4	79,2
Latvia	9,0	19,8	36,9	44,4	41,9	40,7
Lithuania	16,8	15,5	29,3	37,9	38,5	40,7
Malta	60,7	60,9	66,4	67,4	70,3	72,1
Poland	45,0	47,1	50,9	54,8	56,2	55,6
Romania	12,8	13,4	23,6	30,5	34,7	37,8
Slovakia	29,6	27,9	35,6	41,0	43,3	52,1
Slovenia	23,1	22,0	35,0	38,6	46,9	54,1

Source: developed by the author based on the Eurostat data: *Government deficit/surplus, debt and associated data (gov_dd_edpt1)* – access date: 30. Sept. 2013.

It needs to be noticed that the institutions managing public debt can directly determine only the structure of the Treasury debt which is only one of the items making up the debt of the whole public finance sector. In practice, the Member States manage public debt based on one of three models which are called a ministerial model, a banking model and an agency model [for details see, for instance, Marchewka-Bartkowiak 2008, p. 139]. Regardless of the models' characteristics or the controversies concerning their use [see Piotrowska-Marczak, Uryszek 2009, pp. 64–65], none of them allows the direct control over the structure of subnational debt, which is shaped by regional or local governments borrowing in their own name and on their own account. The central government can control this component of public debt only indirectly by issuing orders and bans, or by imposing caps on its amounts. This mechanism, however, falls under the broad definition of public debt management. Institutions determining the structure of public debt at the central level have not powers over its local composition.

2. The term structure of public debt

Public debt is mainly managed through its term structure. One outcome of disproportionately large amount of short-term instruments in the structure of public debt is increased exposure to refinancing risk [Uryszek 2011, pp. 66–77] and interest rate risk [Uryszek 2010, pp. 73–87]. Public authorities choos-

ing to borrow short term have to seek funds relatively often and have to pay different prices. Sometimes such funds may not be achievable at all. The proportion of short-term debt (with maturity to one year) in the General Government debt structure in the new Member States is shown in table 2.

Table 2. The short-term debt (to 1 year) as a share of public debt in the new EU Member States (%)

		2007	2008	2009	2010	2011	2012
Bulgaria	%*)	0,1	0,2	0,2	2,5	2,8	0,1
	EUR mn**)	3,2	9,9	10,8	146,1	178,0	8,9
Cyprus	%	n/a	n/a	n/a	n/a	n/a	n/a
	EUR mn	n/a	n/a	n/a	n/a	n/a	n/a
Czech Republic	%	8,2	6,3	6,8	7,6	9,5	10,7
	EUR mn	3 133,6	2 575,6	3 297,5	4 354,4	5 784,9	7 448,8
Estonia	%	2,2	1,2	1,3	0,7	0,7	0,6
	EUR mn	11,7	139,0	12,9	6,3	7,2	9,5
Hungary	%	13,4	10,6	10,6	9,6	8,7	12,2
	EUR mn	8 824,7	7 701,2	7 967,6	7 514,4	6 278,9	9 320,9
Latvia	%	7,7	35,9	14,7	9,4	8,4	6,2
	EUR mn	146,5	1 613,9	993,7	751,3	721,2	560,1
Lithuania	%	2,5	7,9	4,4	6,3	6,0	6,5
	EUR mn	118,9	398,2	347,4	663,0	711,7	871,4
Malta	%	11,5	12,7	13,8	10,8	7,7	4,7
	EUR mn	388,4	461,5	545,3	458,4	354,4	226,9
Poland	%	4,4	8,4	6,9	3,4	1,1	0,7
	EUR mn	6 445,0	12 185,6	11 485,2	6 619,4	2 135,5	1 517,7
Romania	%	13,8	18,9	22,7	24,5	22,9	15,2
	EUR mn	2 006,3	3 220,7	6 290,0	9 181,4	10 242,5	7 592,9
Slovakia	%	0,4	4,9	5,0	5,5	4,5	3,9
	EUR mn	73,6	911,1	1 112,0	1 489,2	1 338,1	1 444,7
Slovenia	%	3,3	2,3	6,8	1,1	1,1	4,4
	EUR mn	270,0	192,5	847,3	154,7	183,0	844,7

*) – the share of short-term debt in the structure of the public debt (in %)
**) – the value of short-term debt (in millions of EUR)
n/a – data not available

Source: developed by the author based on the Eurostat data: *Structure of government debt (gov_dd_sgd)* – access date: 30. Sept. 2013.

Financial crisis augmented the share of short-term instruments in the structure of public debt in most new EU Member States. Between 2007 and 2009 the proportion of these instruments increased in 9 out of 11 new Member States (on which data were available). A considerably more frequent use of the short-term instruments as a means of financing public sector's borrowing needs in the years 2007–2009 was particularly distinct in countries where public debt was mounting very fast (e.g. Latvia, Lithuania, Romania, Slovenia). Compared with the other Member States, Poland's situation was relatively good in this respect.

After the first wave of the crisis was over and the public debt management institutions made preliminary assessments of the situation, the financing of the public sector with the short-term instruments was promptly abandoned. This was a positive decision that largely reduced the refinancing risk of public debt. In the new Member States most instruments had maturity of 7–10 years [see: Eurostat, *Structure of government debt (gov_dd_sgd)*], which was a little bit shorter than in the "old" EU members. This reveals distinct differences between countries with a long free-market tradition and the relatively "new" market economies regarding the preferred length of borrowing.

3. The currency structure of public debt

Whether investors willing to buy Treasury securities or to grant loans (credit) secured by public assets will be sought on the domestic market or abroad directly depends on the currency of the debt to be issued. Instruments denominated in national currencies reduce exchange risk, but issuers frequently choose foreign exchange in order to diversify the range of sources financing the borrowing needs of public authorities, to acquire less expensive capital abroad, or to avoid likely problems with borrowing domestically. Table 3 shows new Member States' debt denominated in national currencies as a proportion of the total public debt in these countries.

According to the data, all new EMU countries borrowed mostly in euro currency. Among the non-euro EU members, debt denominated in national currencies was chosen by countries with relatively stable currencies and well-developed economies, having high ratings from the international rating agencies (mainly by the Czech Republic and Poland).

"Smaller" economies (such as Lithuania or Latvia) seek to finance their borrowing needs abroad, so they have to use foreign currencies. In this case, the euro and – to some extent – the US dollar were chosen the most frequently. Besides Lithuania is going to join Eurozone soon. According to the Lithuanian government, it should happen in 2015 [see: *Lagarde*... 2013]. In such a case, Lithuania uses euro as the "main" currency for public borrowing. The similar example is Estonia, which used former national currency (Estonian Kroon) to a small extent. After joining EMU in the beginning of 2011, the whole public debt was denominated in euro.

Table 3. Public debt denominated in national currencies as a proportion of public debt in the new EU Member States (%)

	2007	2008	2009	2010	2011	2012
Bulgaria	23,2	24,4	23,4	25,7	26,3	22,4
Cyprus	n/a	n/a	n/a	n/a	n/a	n/a
Czech Republic	90,6	86,2	83,7	82,1	83,6	81,4
Estonia	n/a	17,1	3,8	11,1	100,0	100,0
Hungary	68,4	59,9	53,6	52,9	48,2	56,5
Latvia	40,2	41,4	25,3	18	16,3	14,4
Lithuania	n/a	17,6	8,5	12,1	13,5	16,9
Malta	99,9	99,9	100,0	100,0	100,0	100,0
Poland	75,8*)	73,7*)	73,3*)	73,0	69,1	69,6
Romania	34,4	40,1	39,5	39,6	40,7	44,0
Slovakia	72,1	75,6	99,7	99,7	99,7	94,3
Slovenia	n/a	99,4	99,8	99,8	99,8	90,9

*) data on the Treasury debt
n/a – data not available

Source: developed by the author based on the Eurostat data: *Debt by currency of issue (gov_dd_dcur)* – access date: 30. Sept. 2013.

Countries with "weaker" currencies and less favourable economic situation, such as Bulgaria or Romania, rarely used debt instruments denominated in national currencies, because their poor ratings made them unattractive for investors. Having to choose foreign currencies, they opted for the strongest of them: the euro and the US dollar. In Bulgaria and Romania, the euro-denominated debt accounted for around 50% and the USD-denominated debt accounted up to 20% of total public debt. It is noticeable, however, that along with the countries' improving ratings (despite continuing financial crisis), they take efforts to change the currency structure of their debt by making a wider use of instruments denominated in national currencies.

4. The lender structure of public debt

The lender structure of public debt is meant as the various groups of investors that purchase Treasury debt securities (TDS) or grant loans to public authorities. The TDS issuers can specify (in the information memorandum) the target groups of investors to whom particular instruments are addressed. Assessing financial institutions' involvement in lending to the public sector in the period of financial crisis and economic deceleration seems particularly interesting, because the institutions themselves faced major problems which made them considerably reduce their investment activity and attempt to diminish invest-

ment risk related to the structure of their assets. One option they could exercise was to purchase TDS carrying, if not zero, at least the lowest risk among all financial assets that were then available in the market. It can therefore be assumed that the financial sector could "absorb" a large part of the public debt increase. This assumption is particularly relevant to countries with high ratings from the international rating agencies. Table 4 shows the proportion of financial institutions in the lender structure of public debt in the Member States.

Table 4. Financial institutions in the lender structure of public debt in the new Member States

		2007	2008	2009	2010	2011	2012
Bulgaria	%*)	37,9	45,0	34,8	46,0	52,9	51,1
	EUR mn**)	1 992,2	2 186,9	1 778,3	2 693,8	3 322,5	3 756,1
Cyprus	%	n/a	n/a	n/a	n/a	n/a	n/a
	EUR mn	n/a	n/a	n/a	n/a	n/a	n/a
Czech Republic	%	73,8	70,5	70,0	63,2	61,8	63,2
	EUR mn	28 289,5	28 977,9	34 011,5	36 244,4	37 614,4	44 183,9
Estonia	%	58,2	57,3	48,1	58,7	56,3	34,2
	EUR mn	310,2	6 646,0	476,9	561,7	561,1	590,2
Hungary	%	44,1	41,6	39,5	38,7	30,6	31,5
	EUR mn	29 063,8	30 137,9	29 853,0	30 344,1	22 068,6	24 135,7
Latvia	%	26,5	45,9	21,0	16,7	14,9	14,7
	EUR mn	507,2	2 063,0	1 421,1	1 340,4	1 269,8	1 326,6
Lithuania	%	32,3	34,4	24,6	23,4	23,1	20,8
	EUR mn	1 564,3	1 730,9	1 921,6	2 451,3	2 745,3	2 773,6

Malta	%	68,3	63,6	66,3	66,9	65,2	60,8
	EUR mn	2 307,6	2 304,8	2 619,8	2 844,2	3 004,6	2 961,1
Poland	%	57,7	60,4	57,5	52,2	47,1	44,0
	EUR mn	84 751,8	87 355,8	95 798,7	101948,8	90 739,7	95 688,5
Romania	%	60,9	63,8	68,7	65,0	65,2	68,4
	EUR mn	8 842,6	10 888,9	19 029,9	24 332,9	29 137,4	34 184,2
Slovakia	%	60,1	59,3	63,4	61,8	58,8	51,4
	EUR mn	10 844,6	11 043,4	14 162,8	16 678,5	17 581,9	19 157,8
Slovenia	%	n/a	n/a	n/a	n/a	n/a	n/a
	EUR mn	n/a	n/a	n/a	n/a	n/a	n/a

*) – the share of financial institutions in the lender structure of the total public debt (in %)
**) – the value of the public debt incurred in the financial institutions (in millions of EUR)
n/a – data not available

Source: developed by the author based on the Eurostat data: *Structure of government debt (gov_dd_sgd)* – access date: 30. Sept. 2013.

The reason why two countries are omitted from the lender structure was the lack of data. As for the remaining 10 countries, in the years 2007–2010 (the "first wave" of crisis), only in four of them financial institutions increased their contribution to Member States' public debt and in the other six their share decreased. In several cases changes were minor, so it cannot be concluded that, on principle, financial institutions were increasing their share in public debt. Moreover, it has been found that even if investors considerably increased their purchases of Treasury debt securities they promptly withdrew from their investments as illustrated by the Latvian case. Despite the high interest paid on the Latvian Treasury debt securities (up to 12% in the research period) the poor economic situation (followed by poor ratings) made them unattractive to investors.

In contrast, the Czech Treasury debt securities enjoyed a lively (and increasing) interest from financial institutions. The fast swelling public debt in this country (both in nominal terms and in proportion to GDP) was „absorbed" in the analysed period in a large part by the financial sector, probably attracted by the relatively high ratings. Romanian Treasury securities were also attractive for financial sector. Relatively poor ratings were discounted by high interest rates in this case. The financial institutions' interest in the Polish TDS was relatively strong and fairly stable, because of the country's good rating („A" by Fitch) and the relatively high interest on its debt instruments (around 5% p.a. on average).

Basing on the data it is very hard to assess the involvement of financial institutions in the process of lending to the public sector. The conclusions of this part of the study remain ambiguous.

Conclusion

In the wake of the expanding borrowing needs of governments the shares of short-term instruments in the structure of public debt increased too. With the recession of the first wave of the financial crisis, the public debt management institutions started to limit their issues of short-term instruments as much as they could, which was a rational thing to do. Therefore, the first research hypothesis has been confirmed.

Public debt management institutions frequently borrowed in national currencies. In the EMU countries (as well as in the counties that were preparing to enter Eurozone in the near future), almost 100% of total public debt was denominated in euro. In the non-euro countries with relatively strong economies, national currencies accounted for most of the public debt. Countries with less advanced economies had to borrow in foreign currencies, their preferred currencies being the euro and the US dollar. The second hypothesis can be considered proven, however bearing in mind that the debt issued by the less developed economies was frequently denominated in strong foreign currencies (especially euro).

The share of financial institutions in the lender structure of public debt is not so straightforward to assess. In some countries the share either did not increase or, after it did, investors started withdrawing their funds once economies reached a relative balance and information about the market situation became available. However, financial institutions invested in the TDS issued by countries where public debt was swelling fast. In this case the probable reason was rather high interest rates on these instruments, and – in some cases – relatively high ratings of these countries (despite their expanding debt). These findings do not provide strong evidence for accepting the third hypothesis as true.

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