

IFRS: GLOBAL RULES & LOCAL USE

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Introduction

These proceedings accompany the **5th International Scientific Conference** entitled **IFRS: Global Rules & Local Use**, at Anglo-American University in Prague on October 19–20, 2017.

The proceedings include contributions authored by conference participants presented during the conference. These have been reviewed and accepted by the conference editorial team and international external reviewers.

The program is as follows:

Thursday, October 19th:

- Early registration, welcome session

Friday, October 20th

- Welcome by AAU president, Petr Jan Pajas
Morning section I – Opening plenary session
Presentation of conference keynote speakers (David Alexander, Anne Jeny, Jiri Strouhal, Alice Machová and Martin Tesar)
- Morning section II – Financial reporting
- Morning section III – Aspects of financial accounting I
- Afternoon section I – Entity appraisal
- Afternoon section I – Aspects of financial accounting I
- Afternoon section II – Publication of financial statements within the EU
- Afternoon section II – Adoption and use of IFRS
- Afternoon section III – From fraud and corruption to virtual assets
- Afternoon section III – Hedging and risk

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Beyond the Numbers

INTEGRATED REPORTING IN SCIENTIFIC PUBLICATIONS – PRESENTATION OF THE STATE OF THE ART

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Abstract

The aim of this study is to present the state of the art in the integrated reporting (IR) research. We analyzed the content of 124 articles indexed in Scopus and Web of Science databases, published between 2012 and 2016. We coded data based on a list of items. Our three main key findings are: (A) European academics are the most concerned authors in integrated reporting related issues and they place the content/archival analysis or normative studies mostly in their homeland. (B) An interesting negative tone on IR was found in 7 papers that prove IR is a tool to reshape a company's public image, to reduce the development of other types of non-financial reporting and a phenomenon to support the already defined position of multinationals and accountancy professionals, having limited potential because it only reconsiders old terms in a new form. (C) Researchers are expected to find answers at questions like: which are the internal determinants of IR adoption?; is IR improving or reshaping the corporate communication?; who is the true beneficiary of 'value creation' concept?; etc. We believe that our paper provides resources to start developing new ideas in the IR field based on solid and impartial evidence, in the final benefit of the society.

Keywords: *future research directions, integrated reporting, literature review*

1. INTRODUCTION

The realities of the contemporary period (social, environmental, the reversed ratio between the value of tangible and intangible assets owned by companies, etc.) have changed the organizations' reporting. The most complete form of reporting that is currently developing is the integrated reporting (IR). IR is an emerging paradigm that claims to be the next step in the evolution of corporate reporting. About 10% of the reports indexed in the database of the Global Reporting Initiative in the past five years are integrated.

In 2010 the International Integrated Reporting Council (IIRC) was created in order to develop a globally-accepted framework for IR. The first version of the framework was published in 2013 and began to be used by a pilot group of companies. There remain many issues that IIRC must explain before the referential proposed will be prepared for a global application: tools used for IR, IR's institutionalization, IR's regulation etc.

The objective of this paper is to present the state of the art in the subject of IR research in scientific publications. In order to do that, we studied 124 papers indexed in Web of Science and Scopus databases between 2012 and 2016 and coded data within a list of items. A lot of developments occurred after 2010, when the IIRC was formed. In line with this, the literature on this subject also developed.

Our motivation for this subject comes from the increasing number of papers written on IR in the last years and the existence of an increasing interest in this area. As far as we know, there are two literature reviews on IR papers (Dumay et. al., 2016; de Villiers et. al., 2014). Other literature reviews were conducted on CSR reporting. On one side, Dumay et. al. (2016) frame their research on 56 articles (25 conference papers and 31 academic journals articles) published or presented between 1 January 2011 and 1 March 2015 and their main conclusion is that few research approaches the practice of IR. The authors conclude that there is a need for further critical debate which will lead to an understanding of the impact of IR in practice. On the other side, de Villiers et. al. (2014) present insights of papers published in a special issue of *Accounting, Auditing and*

Accountability Journal on the theme of IR. This paper is built on presenting the main findings of IR articles and proposing a wide research agenda.

One of the advantages of our research is given by the fact that IR is an emerging practice and research in this direction can help to develop its global understanding and application. A literature review of the previous papers in this field can guide scholars to the remaining aspects to study and to provide qualitative answers required.

Our paper is structured as it follows: the literature review follows. Then, we describe the research method. Our results are presented afterwards. In the next section we include the future research directions identified in the papers read. Our article ends with discussion and final remarks.

2. LITERATURE REVIEW

Currently, International Financial Reporting Standards (IFRS) is the most used referential in financial reporting worldwide. However, the conceptual accounting framework of the International Accounting Standards Board (IASB) was designed several decades ago, and subsequent changes were not significant. Consequently, this referential does not include all the elements that a company must bring to the fore to present a true picture concerning: the nature of intellectual and relational capital, social and environmental reporting, risk reporting. Meanwhile, financial reporting addresses especially the needs of shareholders, but in the last two decades has been highlighting the importance of a business model focused on creating long-term value for a variety of users (WEF, 2011; Saghroun and Eglem, 2008). One way to improve reporting is IR, an approach that promises to be “holistic, strategic, sensitive, significant and relevant in multiple time horizons” (Adams and Simnett, 2011, p. 292).

This type of reporting has already mobilized significant material and intellectual resources, as the new trend at international level. Although IIRC was created only seven years ago IR became mandatory in South Africa and receives support from several countries (Brazil, Singapore, Malaysia, Japan – IIRC, 2014), but also large accounting and audit firms (Deloitte and Touche, 2011; Ernst and Young, 2013; KPMG, 2013; PriceWaterhouse Coopers, 2013), professional bodies (e.g. ACCA, 2012; CIMA et al., 2013; ICAEW, 2013; AASB 2013; IAAER, 2014; IFAC, 2014), regulators (e.g. IASB, 2013; SASB, 2013; FASB, 2013; IPSASB) and deregulation (GRI, 2013; CDP, 2013; CDSB, ISO – IIRC, 2014).

The importance of research in the field of IR results for several reasons. Today, only about 20% of the market value of a company can be accounted for by its financial and physical assets (as opposed to 80% in the 70's – King and Roberts, 2013). Other factors such as existing relationships in a company, intellectual capital and human data represent an important share of the value of an entity. Also, there is a more pronounced pressure generated by social and environmental issues (environmental degradation, pollution, global warming, waste of resources, population growth, work by adolescents, social inequality, labor accidents, incidents, discrimination etc.). Facts other than financial information have become increasingly requested by users and are important information for decision making. This has increased the amount of information presented in the annual reports, especially in the notes and management's commentary, but the presentation is done in a piecemeal way. IR proposes the integration and connectivity of heterogeneous information. Investment funds are also interested in those businesses that take into account social and environmental responsibility. In April 2012, 1,100 investment firms managing 32 trillion dollars had signed the United Nations Principles for Responsible Investment (UNPRI) (King and Roberts, 2013). In this context, IR facilitates access to capital (Koellner et al., 2005). Another consideration which supports the need for IR is that the number of social and environmental regulations increased, and companies require additional support to cope. An International <Integrated Reporting> Framework (IIRF) recognized globally is important because it promotes understanding unified integrated reports, assists neutral and impartial reporting, integrated reports more comparable

between companies and countries etc. Without standards, reports are less useful to interested parties.

As Dumay et. al. (2016) also identified, IR experienced different definitions: South Africa's perspective in King III (2009) on IR is a holistic and integrated representation on company's performance.

Abeysekera (2013) considers that IR makes an organization "accountable about its performance to stakeholders in reaching its vision (long term) through the use of multidimensional resources".

Regarding the geographical distribution of the research conducted on IR, various studies on IR are conducted in South African context or companies (Ackers, 2016; Ahmed Haji and Anifowose, 2016; Atkins and Maroun, 2015; Babourkardos and Rimmel, 2016; Buys and Van Niekerk, 2014; Clayton, Rogerson and Rampedi, 2015; Esterhuyse and Wingard, 2016; Ahmed Haji and Hossain, 2016; Lee and Yeo, 2016; Meintjes and Grobler, 2014; Moloi, 2015; Raemaekers, Maroun and Padia, 2016; Rensburg and Botha, 2014; Schörger and Sewchurran, 2015; Setia et. al., 2015; Steyn, 2014; Veltri and Silvestri, 2015). This is not a surprising result given that in this country issuing an integrated report is mandatory for the companies listed at Johannesburg Stock Exchange. Most of the studies analyze the impact of IR on the companies, the benefits that brought this adoption and what patterns can be identified regarding its implementation process.

There are few studies conducted in Central and Eastern European (CEE) countries, mostly in Poland (Bluszcz and Kijeswka, 2015; Krasodomska, 2015; Lorenc and Sorokina, 2015; Szczepankiewicz and Mućko, 2016), but they are referring to CSR reporting and not IR. As regards Western Europe, there are papers written on IR in countries like UK, Germany, Denmark, Italy, France, Netherlands (Beattie and Smith, 2013; Ellwood and Greenwood, 2016; Hąbek and Wolniak, 2016; Lueg et. al. 2016; Mio, Marco and Pauluzzo, 2016; Müller and Stawinoga, 2015; Robertson and Samy, 2015; Slack and Munz, 2016; van Bommel, 2014; Wulf, Niemöller and Rentzsch, 2014), but very few are actually approaching IR related issues. A reason to explain this research distribution of papers related to IR is that scholars tend to conduct studies in their homeland and there are very few companies that adopted IR in CEE countries.

3. RESEARCH METHOD

In order to conduct this research, we chose the articles included in two databases: Web of Science and/or Scopus. We selected these databases as they are the best recognized in the academic assessments, being taken into account in many countries. Using this criterion for the selection, we consider that we conferred our research objectivity. We chose the period 1 January 2012 – 31 December 2016. We only selected the articles published in English. Thus, we obtained a database consisting of 124 articles. The papers were selected on January 7, 2017. In the two databases mentioned we searched for the following terms: IR, integrated reporting, integrated thinking. In Web of Science we searched for this words in the title (as there was no other option), while in Scopus we searched in the title, key words and abstract. The list of articles included in our analysis is presented in Appendix 1.

We read each article and we prepared a database in Excel containing the information presented in Appendix 2. The list of analyzed items was prepared based on Dumay et al. (2016), Lungu et al. (2016) and the authors' own experience.

4. FINDINGS FROM PUBLICATIONS ON INTEGRATED REPORTING

This paper presents the study of 124 articles published between 2012 and 2016 (Table 1). We noticed that most of the sample returned by our selection criteria (69%) is published in the last two years (2015 and 2016).

Table 1. Publication years of the articles from the sample

Year	Number of articles
2012	5
2013	13
2014	20
2015	46
2016	40
Total	124

Source: own elaboration

As regards the authors of the papers included in the sample, we found an average of 2.2 authors per paper. The minimum number of authors is 1 (27.78% of the articles) and the maximum is 6 (1 article).

As given in Table 2, it seems that the IR topic and related aspects are a research subject for university professors. 114 (90.48%) papers are written by academics and only 7 articles are co-written by practitioners and consultants. There was also found co-authorship between academics, consultants and practitioners, but only in the case of 5 articles (3.96%). Hence, practitioners or consultants have a small contribution to the IR research. This is consistent with the findings of Dumay et. al. (2016) that there is a need for a better communication between the accounting profession, practice and academics in order to understand the theory of IR in practice.

Table 2. Authors of the papers published in the IR area between 2012 and 2016

Items	Number
Academics	113
Practitioner(s) and consultant(s)	6
Academics, practitioners and consultants	5
<i>Authors' provenance</i>	
Europe, of which	76
United Kingdom	20
Australia	19
North America	13
South Africa	13
Asia	9
Other	6

Source: own elaboration

The majority of the authors are from Europe, so this continent resulted as the most active region in the IR area. 76 (61%) papers have European authors and almost a quarter of these are from the UK. The second place goes to Australian authors with 19 articles. USA and Canada also contribute to this type of research with 13 papers. A surprising result is that only 13 papers (10.32%) belong to authors from South Africa where IR is mandatory which would have been expected to transform this country in the main focus of this type of research.

In terms of themes analyzed by the articles, the list of topics considered for this research is presented in Table 3. When a paper referred to a different topic than the ones considered, we classified that paper in the category 'Other'.

Table 3. Themes of the papers published in IR area between 2012 and 2016

Item	Number
IR in action	26
External reporting	17
Factors determining IR initiatives	10
Fundamental concepts	9
Framework as a whole	9
Tools	6
Auditing and assurance	5
Meaning, definitions, models	5
Principles	3
Accountability and governance	2
Management control/Strategy	2
Performance measurement	2
Corporate governance	2
Risk	2
Other	22

Source: own elaboration

The summary of the results indicate that most of the articles (20.96%) mirror the practice of IR, namely the category 'IR in action'. An interesting result is that next in line is the item 'Other' which suggests that 17.74% of the articles don't refer to IR issues detailed in the table. Moreover, 13.71% of the papers included in the sample are in the field of external reporting, meaning that they approach IR as part of the corporate reporting. Less present are themes like risk, corporate governance, performance measurement, management control/strategy, accountability and governance (only 2 articles each).

The analysis of the theory used is presented in table 4.

Table 4. Theory used in the papers from IR area between 2012 and 2016

Item	Number
<i>Economics theories</i>	37
Legitimacy theory	7
Stakeholder theory	7
Institutional theory	7
Agency's theory	6
Other economics theories	10
<i>Normative accounting theory</i>	8
<i>Math and statistics theory</i>	10
<i>Behavioral theories</i>	1
<i>No explicit theory</i>	70

Source: own elaboration

The analysis of the theory used to develop the research in the articles (Table 4) shows that more than half of the papers (55.56%) there is no reference to a theory. The most used theories are math and statistics theories and other general economic theories (8.06% of total each). Normative accounting theory is approached in 8 papers (6.45%) and the less used theories in IR articles are behavioral theories (only 1 paper).

In terms of research methodology, we considered the ones enumerated in Table 5.

Table 5. Research methods used to collect data and present the results of the study

Item	Number
<i>Methods used to collect data</i>	
Content analysis/archival analysis	26
Case study/field study	13
Interview	11
Survey/questionnaire	10
Literature review	6
<i>Methods used to present the results of the study</i>	
Commentary/normative/policy/conceptual	22
Econometric analysis/regression	17
Other/multiple/not specified	14
Other quantitative methods and statistics	7
Discursive reasoning	5

Source: own elaboration

As presented in Table 5, there is a tendency to adopt qualitative methods in studying IR issues. 40% of the sample is framed on a qualitative method. The most used research method is the content analysis/archival analysis: 20.97% of the papers. 22 articles (17.74%) are commentaries or conceptual studies. 13.71% of papers employ econometric models. Also, 16 papers (12.90%) were developed using more than one research method or a method which was not included in our enumeration or no specific method. Case studies (13 articles), interviews (11 articles) and surveys (10 articles) were employed to obtain an IR study too.

Table 6. Top 11 journals in which IR papers were published between 2012 and 2016

Journal	Number of articles published
Accounting, Auditing and Accountability Journal	10
Journal of Cleaner Production	9
Journal of Business Ethics	6
Critical Perspectives on Accounting	5
Sustainability Accounting, Management and Policy Journal	5
Accounting Education	4
Journal of Intellectual Capital	4
Amfiteatru Economic	3
Business Strategy and the Environment	3
Managerial Auditing Journal	3
Meditari Accountancy Research	3

Source: own elaboration

The articles we studied are published in 70 international journals between 2012 and 2016. Table 6 presents top 11 journals according to the number of articles published. The numbers reveal the diversity of our sample.

As IR is an emerging practice, we considered interesting to study the tone of the papers related to it. There are a lot of studies and organisations that support IR and state it's numerous benefits, but it is important to consider also the discovered deficiencies. In this way, scholars may find future directions for research and also propose improvements in this area.

Alexander and Blum (2016) suggest that IR field may be too narrow and provides a mechanism for establishing a broader framework. Brown and Dillard (2014) argue that IR in the form proposed by IIRC is a too limited concept.

Flower (2015) argues that IIRC approach summarizes the concept of value creation as ‘value for investors’ and not ‘value for society’, so within an integrated report, sustainability issues are disregarded. In addition, it criticizes the composition of IIRC’s council as being a way to support the established position of multinationals and accountancy professionals. Thomson (2015) supports Flower’s vision over the IR phenomenon. He states that IR has a limited potential because it is ‘too deeply rooted in the business case for sustainability rather than the sustainability case for business’.

Maniora (2015) demonstrates that IR highlights environmental, social and governance issues in a more theoretical way than in a practical one and that companies that already have an ESG reporting won’t benefit from IR. The study also reveals that, once a company chooses to issue an integrated report, non-financial information loses the attention of stakeholders and that stand-alone ESG reporting seems to be a better instrument to increase their perception and interest in ESG aspects.

Morros (2016) associates IR with world peace. He states that the focus on value creation puts IR far from accountability and that the capitals should be called resources because otherwise IR only changes the words used to describe how companies create money. There is still a confusion between integrated and sustainability reporting and that there will be less disclosure on ESG information if IR becomes mandatory. He also mirrors the different publics that integrated and sustainability reports address to. IR serves capital providers and potential investors because it seeks to present information about risk evaluation and future value growth, while sustainability reporting targets various stakeholders giving social, environmental and economic information.

Stachchezzini, Melloni and Lai (2016) claim that IR is a mean to reshape public image on corporate behavior. They prove that companies choose IR as an impression management tool to detract attention from a low social and environmental performance. Their study also reveals that firms provide few quantitative indicators and little forward-looking information about their sustainability actions and performance.

Table 7. Subject population/unit of analysis in the IR research papers between 2012 and 2016

Item	Number
<i>Countries</i>	
Supranational/International/Comparative – General	15
Supranational/International/Comparative – Industry	2
Supranational/International/Comparative – Organisational	6
National – General	22
National – Industry	6
National – Organisational	15
One organisation	10
Not applicable	48
<i>Companies</i>	
Publicly listed	33
Private	5
Public sector	4
Other	20
Not applicable	62

Source: own elaboration

Most of the papers don’t have as unit of analysis countries (39%) or companies (50%). The subject population is represented by users, stakeholders, specialists or there is a presentation of theoretical

aspects concerning IR and related issues. 37 articles are focused on general studies, at international or national level. 31 papers focus on organisations, using different approaches: a comparison between different countries, within the same country or a case study on a specific company. Authors of these studies usually construct their sample from publicly listed companies. 16.13% of the articles have other type of entities as unit of analysis (than publicly listed, private or public sector). There were also found 4-four articles centered on institutions from public sector. The IIRC Examples Database (<http://examples.integratedreporting.org/home>) contains only one IR published in 2013 by HM Revenue & Customs, the UK's tax, payments and customs authority, so this is an area where integrated reporting could be developed. Although, even though theoretically this type of reporting is related with an activity domain, in more than a half of the sample the authors do not analyse entities.

Table 8. Place of research in the papers published in the IR area between 2012 and 2016

Item	Number
Europe, of which	25
United Kingdom	6
South Africa	17
Australia	8
North America	7
Asia	4
Other/not applicable/multiple	62

Source: own elaboration

As regards the place of research (Table 8), half of the articles studied don't refer to a specific region. As expected due to the fact that Europeans are the authors of 61% of the papers, the most used area of research is Europe. Although South Africans published only 10% of the articles from our sample, it seems that this country was studied by other nations too, being present in 17 papers (13.71%). Australia, North America and Asia are considered place of research in a lower degree, within less than 10% of the papers.

Table 9. Specific industries studied in IR papers between 2012 and 2016

Item	Number
Mining	5
Banking	4
Nonfinancial	4
Agriculture	2
Construction	2
Financial services	2
Children's wear and accessories	1
Energy, mining	1
Extractive petroleum	1
Government, local authorities and charities	1
Health	1
Institutional investment	1
Manufacturing, mining, chemicals, energy, forestry/pulp and pipelines	1
Mining and metallurgy	1
Total	27

Source: own elaboration

As given in Table 9, 27 papers frame their research based on one or various industries. As expected, mining is the most analyzed industry because it's the main component of South Africa's economy

and because IR is mandatory in this country. Mining is also co-studied with metallurgy, energy, manufacturing or chemicals industries, as a sensitive domain from the environmental point of view, being the focus of eight articles in total. Banks and financial services are ranked second with six papers. The third place belongs to studies that exclude financial companies from their samples due to 'the existence of significant differences in the evaluation of their wealth and in their corporate structure'. Nonfinancial industries are approached in four articles, all belonging to Spanish authors. Agriculture and construction are the focus of 2 papers each. Other studies are conducted in the area of children's clothing, health or charity.

Table 10. General statistics of the sample

Items	Number of articles	Average	Minimum	Maximum	Standard deviation
Number of references	124	58.79	0	161	36.31
Number of citations according to Google	124	14.49	0	114	22.88
Number of downloads	46	1,624.52	116	7,695	1,579.08
Number of pages	124	19.31	4	52	10.43
Number of authors	124	2.20	1	6	1.04
Sample size	83	267.37	1	7,344	880.67

Source: own elaboration

As the purpose of an article is to be read and the number of citations and downloads are features that can give quality to it, we sourced this information on 16 January 2017. The number of downloads was only available for 46 papers.

The minimum number of citations according to Google is zero and the maximum is 114 citations, with an average of 14.49 citations per paper. According to Metcalf et. al. (2015) cited by Lungu et. al. (2016), research on accounting education received, on average, between 7.47 and 35.49 citations per publication. The minimum number of downloads is 116 and the maximum is 7,695, with an average of 1,624.52 downloads per article.

Another dimension of the quality of an article is provided by its documentation background. Hence, we studied the number of references of the sample. 124 papers have cited a total number of 7,290 references. The average number of references is 58.79 per paper, with a minimum of zero and a maximum of 161 references.

Between 2012 and 2016 there were written 2,413 pages on IR and related issues. The smallest number of pages of paper included in our sample is 4-four pages and the greatest is 52, with an average of 19.31 pages.

5. FUTURE RESEARCH DIRECTIONS IDENTIFIED

The papers analyzed mention various future research directions. This shows how important IR is as field of study and the research possibilities that it involves it.

We found a need to focus on the reasons that convince a company to choose IR (Jensen and Berg, 2012; Lai, Melloni and Stacchezzini, 2016; Frias-Aceituno, Rodríguez-Ariza and García-Sánchez, 2014) and there is also needed future research to explain the adoption of IR through internal and qualitative determinants (opinion from managers, employees, leadership style, etc.) (Lai, Melloni and Stacchezzini, 2016; Turcu, 2015; Frias-Aceituno, Rodríguez-Ariza and García-Sánchez, 2014; Adams, 2015).

Another potential area to study is the connection between publishing an integrated report and ethical corporate behavior (Maniora, 2015; Melloni, 2015). There are findings that prove that companies use IR to manipulate corporate communication, covering deficient social and

environmental performance (Stacchezzini, Melloni and Lai, 2016). Hence, there is a need for research in how IR improves company's communication and also in how this practice detracts attention from other poor areas of its activity and performance.

Also, other evidence for the good impact of an integrated report over firm valuation is requested in order to fulfill its stated role of creating value over short, medium and long term (Lee and Yeo, 2016; Sierra-García, Zorio-Grima and García-Benau, 2015). In addition, the concept of 'value creation' is still debated regarding its beneficiary: how much is value for the organization and how much is for others and society (Flower, 2015; Coulson et. al., 2015).

The quality and reliability of business model disclosure within integrated reports represents other subject for future research, also in relation with ethical corporate behavior (Melloni, Stacchezzini and Lai, 2016). Among the capitals, intellectual capital is another potential topic of discussion (Melloni, 2015). Further, previous researchers ask about the effects of IR practice on internal risk assessment process (Sierra-García, Zorio-Grima and García-Benau, 2015).

In some papers, there are studies on stakeholders' perspective over this practice and scholars identified a focus on the investors within the content of integrated reports (Steyn, 2014; Esterhuyse and Wingard, 2016, Atkins and Maroun, 2015). This is why research should investigate what expect from an integrated report the other categories of stakeholders (Steyn, 2014; Stubbs, Higgins, 2015; Adams et. al., 2016). In addition, there is also a need of comparison between financial markets reaction to IR information disclosure and to non-IR information disclosure (de Villiers, Rinaldi and Unerman, 2014).

More analyses about companies' reporting on risks, strategy and forward-looking information are also needed as there has been found a deficiency in this area in the case of the studied firms (Sierra-García, Zorio-Grima and García-Benau, 2015; de Villiers, Rinaldi and Unerman, 2014).

Another issue that was found as future direction for research is the link between IR, CSR reporting and sustainability reporting (Lueg et. al., 2016; Higgins, Stubbs and Love, 2014). The questions asked are: to what extent 'IR is a simple reflection of a CSR implementation' and to what extent 'IR is a driver of changes to CSR implementation' (Lueg et. al., 2016) and if 'IR is an extension of the sustainability reporting field, or [...] it is an entirely new one' (Higgins, Stubbs and Love, 2014).

The role of the accountants and other professions in the context of the IR development and in assurance standards setting (de Villiers, Rinaldi and Unerman, 2014), metrics of a good integrated report (de Villiers, Rinaldi and Unerman, 2014; Davidyuk et. al., 2015) and how to design a concise integrated report following all the guidance of the IIRC (Turturea, 2015; de Villiers, Rinaldi and Unerman, 2014) are also part of the future research agenda proposed through the articles from our sample. Question marks were also identified related to the marketing function of IR (Dumitru et. al., 2015) and to which theories can be used to explain IR (Jensen and Berg, 2012).

Not least, there is a need to conduct a research in the area of auditing an integrated report and its role to provide credibility and trust in a company's disclosures (Ahmed Haji and Anifowose, 2016; Ahmed Haji, 2015; Adams, 2015).

The articles also suggest increasing the dimension of the samples, extending the observation period, changing the industry chosen for the case study, repeating the same research among other type of organizations or between different countries to facilitate comparison (Meintjes and Grobler, 2014; Melloni, Stacchezzini and Lai, 2016; Melloni, 2015). Among these, evidence is required to sustain the role of IR in the public sector (Cohen and Karatzimas, 2015; Adams, 2015). In addition, more comparisons between IR and non-IR adopters, between voluntary and mandatory IR are considered to be subjects for future research in the following topics: difference in the value added of mandatory versus voluntary IR (Jensen and Berg, 2012; Lueg et. al., 2016), differences in terms of business model disclosure for IR and non-IR adopters (Melloni, Stacchezzini and Lai, 2016), relationship with other stakeholders for non-IR companies (Frias-Aceituno, Rodríguez-Ariza and García-Sánchez, 2014).

6. DISCUSSION AND FINAL REMARKS

This paper aims to present the state of interest in the IR research area by analyzing the content of 124 articles indexed in the best academic recognized databases, Web of Science and Scopus, and published between 2012 and 2016. Our study brings a contribution through the proposed approach on reviewing scientific publications on IR. As far as we know, no other paper follows the same issues to be analyzed. This section is structured in three subsections considering the key findings of the study.

European academics – the most active researchers in the IR area

More than a half of our sample consisted in articles published during the last two years. This shows that the literature in the field is developing and the subject becomes more attractive for researchers. Hence, we are expecting many interesting ideas to occur.

Only seven articles were co-written with practitioners and consultants. Many academics asked for a more substantial contribution from the specialists involved in practice as they bring a different perspective. This is in line with Dumay et al.'s (2016) finding, which states that there is little research examining IR practice. Contrary of the small engagement of practitioners and consultants, the majority of the sample (21% of the articles) approach IR in practice.

One of the main findings is that the majority of the authors (more than a half) are from Europe which suggests that this is the most active continent in IR area. An explication for this could be the provenance of the promoter entity – IIRC – that is located in England. Another explanation could be that Europe provided 58% of the total participants for the Integrated Reporting Pilot Programme (IIRC, 2013). Hence, scholars studied IR's impact on companies from their homeland, probably because it was more accesible. It would be interesting to compare the findings in the papers written by the Europeans with the ones from other authors to identify different perspectives on IR. Also, the place of research is Europe in most of the papers.

Not everyone supports the emerging practice of IR

A study is more reliable if it refers to a theory that can explain the analyzed phenomenon. An interesting finding was that, so far, there is no theory used predominantly in the papers dedicated to IR. We expect that as the field matures, we will have more papers which employ one theory.

The papers from our sample also provided critical perspectives on IR. First, the promoter of IR – IIRC – is criticized for its composition and for supporting the already defined position of multinationals and accountancy professionals (Flower, 2015). Second, IR is perceived as a limited concept (Alexander and Blum, 2016; Brown and Dillard, 2014) with no explicit beneficiary of the value created (Flower, 2015; Tomson, 2015). It is also proved to be a tool to reshape companies' public image, detracting attention from a low environmental and social performance (Stacchezzini, Melloni and Lai, 2016). In addition, there is not clear yet the link between IR and sustainability reporting (Morros, 2016), IR being understood as an aspect that reduces the development of other types of non-financial reporting (Flower, 2015). Moreover, the companies with good ESG reporting seem to have no benefits from issuing an integrated report (Maniora, 2015). These visions on IR show that scholars were concerned to identify both, pro and contra arguments for the real benefits of this practice.

What it is expected from IR researchers?

As detailed above in the paper, our sample provided different perspectives regarding IR. The heterogeneous opinions (evidence) found highlights the various possibilities that this field offers for research. Hence, IR is an important area to study. We identified numerous future directions of research, but we consider that the most interesting aspects to study are detailed in the following.

First, there are stil questions about the factors that convince a company to adopt IR, both internal and external. Studies were conducted in order to find and describe perspectives of external

agents (stakeholders, especially investors), but a promising and interesting future research could be conducted in order to identify the internal determinants of IR.

Second, the concept of value creation is still under debate regarding its true beneficiary. As Flower (2015) observes, the IIRF defines as principle purpose of IR to be reporting the value created over time. The Framework states that IR is focused on improving the quality of information available to providers of financial capital. Therefore, the value created seems to be ‘value to investors’. But the same framework mentions that an integrated report should benefit “all stakeholders interested in organization’s ability to create value over time”. Hence, the value might be ‘value to society’. This is one of the most important issues remained unclear until now that requires future research.

Third, various studies were conducted in order to identify the characteristics of the company’s public image shaped by the IR option. On one side, based on impression management techniques, Melloni (2015) and Melloni, Stacchezzini and Lai (2016) concluded that integrated reports reshape public impression over corporate behavior through the disclosure on business model or intellectual capital. On the other side, Lee and Yeo (2016) found a positive association between IR and firm valuation which leads to an improvement of a company’s public image. Therefore, more studies are needed to find answers at the following question: is IR improving or reshaping the corporate communication?

Moreover, it seems that qualitative methods suit better this field, since 40% of the sample is framed on such methodologies. Our three most interesting future research directions seem also to fit better within a qualitative method. This leads to the idea that maybe it would be interesting to apply quantitative research methods in order to provide new evidence in the IR area.

Limitations and future research

Our approach has a few limits. For instance, we only selected the articles using the key words “integrated reporting”, “integrated report” and “integrated thinking”, but there may be other similar terms (for instance, one report, strategic reporting etc.). This can generate the small number of articles in the sample with a negative tone. Also, we selected only the journals indexed in two databases (Scopus and Web of Science), but there are other important journals in the accounting field (for instance, Journal of Accounting and Management Information Systems). On the other hand, other databases (for instance, DOAJ), returned a very small number of articles corresponding with our research criteria.

Other analysis can be made in the future. For instance, we can correlate the provenance of the authors with some factors which were analyzed here.

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Appendix 1

List of articles studied

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Appendix 2

Data extracted from the articles

- Received (date)
- Accepted (date)
- Journal in which the article was published
- Publication year
- Theme of the articles published
 - o External reporting
 - o Auditing and assurance
 - o Accountability and governance
 - o Management control/Strategy
 - o Performance measurement
 - o Other
 - o Meaning, definitions, and models;
 - o Factors determining IR initiatives;
 - o IR in action;
 - o Tools used for the preparation of the integrated reports;
 - o IR principles;
 - o IR fundamental concepts;
 - o IR framework as a whole;
 - o Corporate governance;
 - o Risk;
- Theory used:
 - o Positive accounting theory;
 - o Normative accounting theory;
 - o Legitimacy theory;
 - o Stakeholder theory;
 - o Institutional theory;
 - o Agency's theory;
 - o Other economics theories;
 - o Finance;
 - o Math and statistics theories;
 - o Behavioral theories;
 - o No explicit theory;
- Research method
 - o Analytical modelling;
 - o Case study/field study;
 - o Content analysis/archival analysis;
 - o Discursive reasoning;
 - o Interview;
 - o Econometric analysis/regression;
 - o Survey/questionnaire;
 - o Other quantitative methods and statistics;
 - o Literature review;
 - o Commentary/normative/policy;
 - o Other/multiple/not specified;
- Subject population/unit of analysis:
 - o Countries:
 - Supra-national/International/Comparative – General;
 - Supra-national/International/Comparative – Industry;
 - Supra-national/International/Comparative – Organisational;

- National – General;
 - National – Industry;
 - National – Organisational;
 - One organisation;
 - Not applicable;
- Companies:
 - Publicly listed;
 - Private;
 - Public sector;
 - Not-for-profit;
 - Other;
 - Not applicable;
- Average sample size;
- Place of research:
 - North America;
 - Australia;
 - Asia;
 - Europe, including UK;
 - UK;
 - South Africa;
 - Other;
- Analyzed industries;
- Number of authors;
- Authors:
 - Academic(s);
 - Practitioner(s) and consultant(s);
 - Academics, practitioners and consultants;
- Author(s) provenance:
 - North America;
 - Australia;
 - Asia;
 - Europe, including UK;
 - UK;
 - South Africa;
 - Other;
- Number of pages;
- Number of references;
- The articles' citations according to Google Scholar (16 January 2017);
- The articles' downloads according to the journal's website;
- Tone:
 - Positive;
 - Negative.

ANTI-CORRUPTION DISCLOSURES AS PART OF CSR REPORTING IN EUROPE: INITIAL INSIGHTS

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Abstract

This study investigates the change in the corporate practice of disclosing information on anti-corruption in CSR reports consequent to the EU Directive on non-financial reporting. In order to improve corporate reporting and, particularly, the disclosures on anti-corruption, the EU issued in 2014 a directive requiring member states to mandate disclosure on anti-corruption as part of non financial reporting. Against this development, this study empirically examines, for a sample of 55 European listed companies, whether there is a change in such voluntary disclosures from period previous to the directive (2012) in comparison to period after the issuing of the directive and before its transposition in national legislation (2015). Following a legitimacy theory perspective, we expected companies to improve the amount and quality of disclosures. Further, we expected disclosures to be associated with legitimacy variables i.e.: negative disclosures, exposure to corruption and firm size. We assessed and compared the quantity, breadth and informational quality of the disclosures and conducted the analysis on the whole sample and on two sub-samples including respectively firms exposed and not exposed to corruption. Results show a growth of the quantity, scope and informational quality of the disclosures on anti-corruption and a positive association of quantity, scope and informational quality of anti-corruption disclosure with time effect, propensity of a firm towards voluntary negative disclosure on corruption information, corruption-risk exposure and firm size.

Keywords: Anti-corruption; CSR reporting; EU directive; informational quality; legitimacy

1. INTRODUCTION

Corruption has received increasing attention over the last decades with a number of studies trying to identify its determinants and consequences for society and firms (Jain, 2001; Svensson, 2005; Galang, 2012) and several international institutions and initiatives addressing the fight of corruption, e.g.: World Bank, International Monetary Fund, Organization of Economic Cooperation and Development, Transparency International and United Nations (Everett et al., 2007). Companies were also affected by this development. As the private sector is the major source of corruption, companies are expected to contribute in combating this phenomenon through the adoption of adequate preventive measures and through transparent reporting (TI, 2016).

Openness of companies on their engagement in anti-corruption is a prevention instrument itself and increases the credibility of the policies the companies has implemented. Such disclosures are usually part of the (voluntary) corporate social responsibility (CSR) reporting and usually follow the Global Reporting Initiative (GRI) reporting framework or the United Nations Global Compact (UNGC) reporting guidance on the 10th principle against corruption (Barkemeyer, 2015). Research considering this reporting practice is not extensive and focuses on the disclosure of GRI indicators showing that such disclosures are different in their coverage and not comprehensive (Barkemeyer et al., 2015; TI Deutschland, 2012; 2014; 2016).

The relevance of corporate disclosure on this topic has been acknowledged also by the European Union (EU) in the European directive regarding non-financial reporting (Directive

2014/95/EU). In order to enhance the quality of non-financial reporting, the EU mandates non-financial reporting and among others corporate disclosures on anti-corruption and bribery (Directive 2014/95/EU, p.2). After the transposition of the directive in national legislation¹ and starting from the reporting year 2017 certain European large companies and groups shall provide information regarding their policies, outcomes and risks regarding corruption prevention or they shall motivate, why they do not. Rather than including detailed requirements regarding the content of the disclosure, the directive refers to nationally or internationally accepted frameworks on CSR-reporting, on which the report may rely on (e.g. GRI guidelines, UNGC principles).

In consideration of this European development, this study focuses on the reporting practice of European companies and investigates the extent to which voluntary corporate disclosures on corruption have been changing over time due to the European directive. Framed in the legitimacy theory, the study analyzes and compares the breadth, quantity and the quality of voluntary disclosures on anti-corruption included in CSR reports from the reporting years 2012 and 2015 of a sample of 55 European companies listed in the EuroSTOXX 200 index and selected by controlling for size and industry membership as well as for their possible exposure to corruption. The empirical analysis has been carried out on the whole sample, as well as on two sub-samples that include firms exposed to corruption risk (25 units) and not exposed to such risk (30 units) basing on the ranking provided by Transparency International (Bribe Payers Index 2011). Empirical evidence documents: a growth of the quantity, scope and informational quality of the disclosure on anti-corruption over time and a positive association of quantity, scope and informational quality of anti-corruption disclosure with time effect, propensity of a firm towards voluntary negative disclosure on corruption information, corruption-risk exposure and firm size.

The study is structured as follows. The next section reviews the status quo of reporting on anti-corruption in Europe by considering existing frameworks and the development of legislation. An overview of the theoretical framework underlying the study and the development of hypothesis is presented in section three. Section four illustrates the empirical analysis of the change in the disclosure on anti-corruption. Finally, in section five, we discuss our findings and draw the conclusions.

2. ANTI-CORRUPTION AS PART OF THE CORPORATE SOCIAL RESPONSIBILITY REPORTING

Corruption is a complex phenomenon difficult to define and to identify (Tanzi, 1995, for a review see Jain, 2001; Everett et al., 2007).² Indeed, it can have different connotations covering a broad range of acts e.g.: bribery, extortion, nepotism, accounting fraud, electoral fraud, exchange of favors and conflict of interest (Rose-Ackermann and Palifka, 2016, p. 8–9).

The prevention of this phenomenon at the firm level encompasses the implementation of different instrument and measures integrated in the internal control system, i.e. the adoption of a code of conduct, the training of employees on anti-corruption issues, corruption risk analysis and identification, control and monitoring measures, adequate internal and external communication instruments (TI, 2016). A key issue in corruption prevention is increasing transparency of both processes and corporate reporting (TI, 2016; see also Wu, 2005). In particular, corporate reporting on anti-corruption efforts is a prevention instrument itself, because it contributes to raise the awareness of this problem among stakeholders. At the same time, it shows company's commitment in the initiative itself and increases its credibility, as it allows investors to monitor the efforts made (Barkemeyer et al., 2015).

¹ The term to transpose the directive was December 6th 2016. Most of the European countries issued the national law in the period between the end of 2016 and the beginning of 2017.

² A common definition for corruption refers to the 'abuse of public office for private gain' (see for example: IMF, 2016; Svensson 2005; The World Bank, 1997), thus focusing on corruption in public sector and excluding the acts involving only private parties (IMF, 2016). A broader view is proposed by Transparency International (2017), which considers corruption as 'the abuse of entrusted power for private gain'.

Disclosing information on anti-corruption initiatives is a diffused practice among companies (TI, 2016). Such disclosures are usually part of CSR reports and dealt with also in specific not mandatory framework developed for CSR reporting i.e.: the Global Reporting Initiative's (GRI) guidelines and standards and the UN Global Compact, 10th principle. The first include specific indicators concerning the corruption prevention measures implemented in the company, while the second provides specific guidance in reporting on the engagement in corruption prevention according to the UN Global Compact principles. Until recent years CSR reporting and, specifically, the disclosure of information on anti-corruption initiatives were not mandatory in most countries.

Due to the profound differences in the content and quality of CSR reports some countries enacted legislation mandating the CSR disclosure. In Europe, Denmark in 2008 (see Danish Commerce and Companies Agency, 2009) and France in 2012 (Décret n° 2012-557) led the way to mandate non financial reporting including corporate disclosure on corruption prevention. For the same reason, since 2011 mandatory CSR reporting had been debated in the EU. The discussion resulted in 2014 in the CSR- Directive of the EU (Directive 2014/95/EU of the European Parliament and of the Council) requiring member countries to mandate the disclosure of non-financial information for certain public interest entities with more than 500 employees. Anti-corruption and bribery matters are among the contents to be covered in the report called 'non – financial statement' (Directive 2014/95/EU, p. 2).

According to the directive, mandating CSR reporting by setting minimum information content was deemed necessary in order to improve the consistency and comparability of CSR reporting among European companies. Further, an improvement in disclosure quality is motivated by the relevance of CSR information for shareholders and other stakeholders (Directive 2014/95/EU, p. 2). The transposition phase of the Directive ended in 2016, that meaning that starting from reporting year 2017 CSR disclosures, in general, and particularly disclosures on corruption and bribery are mandatory at least for certain large companies and groups in all Europe. Following a 'comply or explain' approach companies shall provide information about the instruments in place and policies pursued to fight corruption or in case they do not have them, they have to provide explanation for it (Directive 2014/95/EU, p. 5). The directive does not further specify the content for the required disclosures, but refers to internationally and nationally accepted frameworks or guidelines (e.g. UN Global Compact, GRI guidelines, the ISO 26000) and to non binding guidelines to be developed by the European Commission.³

Research considering disclosure on anti-corruption is not extensive and focuses on the voluntary disclosure of GRI indicators. In particular, an international study analyzed the disclosure of the GRI indicators regarding anti-corruption initiatives in CSR reports (presented in the years 2006–2009) across a sample of international companies, showing among others country- and sector-level differences in the coverage (Barkemeyer et al., 2015). A series of studies conducted by Transparency International on a sample of large German companies focused on the compliance of corporate disclosures concerning anticorruption with the GRI-requirements and showed that disclosures are different in their extent and focus and are not comprehensive (TI Deutschland, 2012; 2014; 2016).

The present study takes into account the current European development and aims at contributing to the literature by analyzing the change in the disclosure on anti-corruption over time consequent to the EU intervention in the field of non financial reporting.

3. THEORY AND HYPOTHESIS DEVELOPMENT

Legitimacy theory

Likewise a vast part of the body of literature dealing with CSR disclosure practices (for a review see for example Deegan 2002; 2014), this paper is framed in the legitimacy theory. This theory is based on a system-oriented view of organization and society, that sees organizations having

³ The European Commission issued to consultation a first draft of the guidelines for reporting in July 2017.

influence upon and to be influenced by society. Specifically, the survival of organizations is dependent on the extent society perceives their operating as acceptable and confers them the state of legitimate (Deegan, 2002). Legitimacy is in fact defined as a ‘generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs and definitions’ (Suchman, 1995, p. 574). In case of potential or actual divergence between societal values and organizational behavior, there is a legitimacy threat (Dowling and Pfeffer, 1975). In this case, society might revoke the organizations’ license to operate through e.g.: the reduction of the supply of productive factors (financial capital and labour), increasing taxes, (Deegan, 2002), or it can use the legal system to issue laws prohibiting certain operations or activities or establishing improved performance standards (Patten, 1992). Thus, legitimacy is considered a resource conferred on organizations by society and sought by organizations, as it is necessary to their existence because it ensure the inflow of capital, labor and customers (Dowling and Pfeffer, 1975; Neu et al., 1998). In addition, it can prevent or mitigate the intervention of the state with regulatory activity (Neu et al., 1998).

Legitimacy is related to a specific social system, to a specific time and place, as it is based both on societal perceptions and on the values and norms shared in society that can change over time (Deegan, 2014). In particular, public values might change due to different reasons, O’ Donovan (2002, p. 348) identifies the following issues: evolving social awareness, regulatory or institutional pressures, media influences, interest groups pressures and corporate crises.

Because legitimacy is important to organizations, these are likely to adopt the necessary practices and policies to conform to or to influence the perceptions shared in society and ensure legitimacy over time. According to Dowling and Pfeffer (1975; p. 127) organizations might adopt the following tactics in managing legitimacy threats:

- Adaptation of outputs, goals and operations to conform to expectations shared in society;
- Attempt through communication to change the definition of social legitimacy;
- Attempt through communication to become identified with symbols, values or institutions having a strong legitimacy.

Therefore, corporate disclosure policies, e.g. those related to CSR reporting, are among the actions an organization can take to influence external perception in order to increase legitimacy (Deegan, 2002; Michelon et al., 2015). Legitimacy is indeed influenced not only by a change in corporate actions complying with (changed) societal values and norms, but more specifically by the disclosure of information about how the company is meeting the (changed) societal expectations (Deegan, 2014). Previous studies show that organizations particularly exposed to social and political pressures have an incentive to use social disclosure to legitimacy purposes and, in particular, to affect public policy avoiding further regulation in the field (Patten, 1991; 1992; see also Guthrie and Parker, 1990). More specifically, firm size and industry grouping, used as proxy of the amount of social exposure, seem to be associated with the extent of CSR disclosure (Patten, 1991). The next section presents some approaches developed to assess the extent of the disclosure and disclosure quality.

Measuring the changes in corporate disclosures

Social and environmental accounting literature includes several studies aiming at evaluating CSR disclosures by adopting different approaches to capture its quality. Some contributions focus on the amount of the disclosure, measuring it in term of space allocated to the disclosure (number of words, sentences, pages) (e.g. Patten, 1991; Deegan and Gordon, 1996; Deegan and Rankin, 1996; Patten and Zhao, 2014). Other studies consider the content of the disclosure (Smith and Taffler, 2000) and develop a disclosure-scoring measure by identifying and scoring the topics dealt within it (e.g. Cho and Patten, 2007; Clarkson et al., 2008). Other studies tried to overcome this problem by developing modified scoring models, which assign different weights to the information provided (e.g. Al-Twaijiry et al., 2004). Recent studies observed that both quantity and the content of the disclosure are potentially important for managers and report users, but they alone are not able to capture the quality of the information disclosed. For this reason, Michelon et al. (2015) and Chauvey et al. (2015) developed more comprehensive approaches to measure disclosure quality.

The first adapted to CSR disclosure a framework proposed by Beretta and Bozzolan (2004) for risk disclosure and measure quality by considering the content, the type of measures used to describe the activities and the corporate approach or managerial orientation to CSR.

The approach followed by Chauvey et al. (2015) is relevant to this study, because it was developed to assess the improvement of CSR disclosure over time. The authors evaluate the improvement of the disclosure by identifying the topics dealt with in the reports (breadth of the disclosure), counting the number of pages (quantity) and measuring the quality of disclosures. Specifically, they assessed the quality of the disclosure through a scoring model based on the qualitative characteristics for decision useful information drawing their evaluation criteria from the IASB and FASB conceptual frameworks of financial reporting standards and the principles to define reporting quality of the GRI-Guidelines for CSR reporting. They focused on relevance, comparability, verifiability, clarity and neutrality of the information provided.

In light of the theoretical arguments described above, this study investigates if the issuing of the EU-Directive with its particular requirement concerning anti-corruption disclosures has been influencing the voluntary disclosure practices of EU-reporters regarding anti-corruption issues. In addition, we verify if the disclosure practices are associated to legitimacy concerns.

We argue that the EU-directive reflected a change in societal expectations about CSR-reporting, which might have provoked a legitimacy threat for CSR reporters, in particular for those reporters that are explicitly addressed by the directive. Further, the directive represented only a starting point for national legislation, as national government were free to decide to issue more detailed requirements on this topic. We can assume that companies may have been trying to react to this legitimacy threat by improving their disclosures on anti-corruption (i.e. adaptation to societal expectations see Dowling and Pfeffer, 1975). At the same time, by proactively improving their disclosure they might try also to avoid strict or detailed national regulation (i.e. exerting influence on public policy, see Patten, 1991, 1992).

In this respect, we expect a growth of the quantity, scope and informational quality of the disclosure on anti-corruption over time.

According to previous studies on legitimacy and CSR reporting, the disclosure is connected to the social exposure of the companies, i.e. socially exposed companies may use the disclosure to reduce their exposure (Patten, 1991; Chauvey et al., 2015). The literature tested this relation with regard to social disclosure and social exposure (Patten, 1991); with regard to environmental disclosure and environmental exposure (Cho and Patten, 2007); with regard to the whole CSR disclosure package and social exposure (Chauvey et al., 2015). In addition to social exposure, Chauvey et al. (2015) considered the disclosure of negative information in assessing the change in the amount and quality assuming that the disclosure of negative information may be accompanied to more extensive and high quality disclosures. Basing on these considerations we expect that the quantity, scope and informational quality of the disclosure on anti-corruption are associated with negative disclosure on corruption and to the corruption exposure of the company.

4. RESEARCH METHODS

Sample selection

The analysis focuses on a sample of companies listed in Europe and being constituents of the index EuroSTOXX 200⁴ in the year 2012 and 2015. We excluded companies operating or being listed in France and Denmark, as in these countries providing information about anti-corruption in CSR reports is mandatory respectively since 2012 and 2008. We did not consider companies operating in both the banking and the insurance sector. Due to the societal impact of their activity, their

⁴ The index is a fixed component index designed to provide a representation of large capitalisation companies in Europe. It is derived from the STOXX Europe 600 Index and covers Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

reporting might be subjected to additional specific national laws and regulations, which might vary over countries.⁵ As these regulations might influence the content and quality of reporting of companies, we decided to exclude these sectors from the sample.

We built a sample of size-matched groups of companies based on industry membership. We distinguished industries exposed to corruption risk and not exposed to such risk.

To evaluate corruption risk exposure, we referred to the ranking (Bribe Payers Index 2011) provided by Transparency International, the worldwide organization whose mission is to fight corruption and promote transparency, accountability and integrity at all levels and across all sectors of society (www.transparency.org). The Bribe Payers Index ranks the likelihood of companies from 28 leading economies to win business abroad by paying bribes. We used the outcomes obtained for this index in 2011 to identify the sectors more exposed to corruption risks, their ranking in the index. For the sake of completeness, the sectors exposed to corruption risk in the index were 19: the most exposed one was “Public works contact and Corruption” while the less exposed one was “Agriculture”. Next, we matched the activity sectors of companies listed in the EuroSTOXX 200 in 2012 with the 19 sectors reported in the Bribe Payers Index and verified that 65 companies listed in the index were operating into one of the 19 most exposed activity sectors. Of these, some were excluded from sample selection: we excluded 12 companies operating or listed in France and Denmark, as in these countries information about anti-corruption in CSR reports was mandatory respectively since 2012 and 2008. In addition, we did not consider 5 companies operating in both the banking and the insurance sector, as well other 23 companies presenting financial reports in a currency different from Euro (like, for example, companies listed in the UK, Switzerland or Scandinavian countries). Following these deletions, the number of companies operating in activity sectors exposed to corruption risk was reduced to 25. These firms represent the “cases” part of our matched sample in the case/control study. The “control” part of the sample is obtained from the remaining 135 companies operating in sectors not exposed to corruption risk. Of these, 105 were not selected because of the same elimination rules applied for the selection of the cases: 30 firms were listed in France or Denmark, 29 firms were operating in the banking and insurance industry and 46 presented financial reports in a non-Euro currency. Thus, the control group is composed of 30 firms. Sample selection ended up with 55 firms selected in both years (25 cases + 30 controls). Thus, the total sample comprises 110 firm-year observations. Of these, 16 observations refer to firms which did not provide any CSR information in both reporting years and 20 observations to firms which include disclosure on anti-corruption in one reporting year only. The remaining 74 observations refer to companies that provide information on anti-corruption in both reporting years.

Data collection

To identify the disclosure on anti-corruption, the authors searched in the reports for the keywords ‘corrupt’, ‘corruption’ and ‘bribery’. Similarly to Chauvey et al. (2015), these disclosures were then analyzed and coded in order to evaluate the quantity, the scope and informational quality.

We measured the quantity or space of the disclosure by counting the words included in the text section addressing the topic anti-corruption. Specifically, we considered those text sections including the words corruption ‘corrupt’, ‘corruption’ and ‘bribery’. As we are considering only one particular area of the CSR disclosure, using the number of words as unit of analysis seems to be an adequate solution⁶. Further, according to Deegan and Gordon (1996), measuring the quantity of disclosure by counting words achieves the maximum robustness to errors.

In order to evaluate the scope of the anti-corruption disclosure, we first identified the main issues that might potentially be covered in such disclosures (see Chauvey et al., 2015). In particular, we identified seven main areas by combining the topics considered in internationally accepted

⁵ For example, in Italy exists a standard for CSR reporting specific for the banking sector, issued by the Italian Banking Association.

⁶ This differentiates our approach from the one followed by Chauvey et al. (2015), that considers the number of pages in order to measure the amount of the whole CSR disclosure.

guidelines dealing with anti-corruption reporting, i.e.: the GRI-Guidelines and the UN Global Compact:

- Corruption risk assessment;
- Corruption risks;
- Employee-training on anti-corruption matters;
- Anti-corruption measures related to the supply chain management;
- Whistleblowing systems for corruption cases;
- Corruption cases and corporate reaction to them;
- Other anti-corruption policies.

We analyzed the disclosures and identified which of the above listed seven areas were covered in the reports and gave one point for each topic addressed. The measure of the breadth of the disclosure could range from zero to seven.

Informational quality

Our measure of informational quality is based on a scoring model similar to the one adopted by Chauvey et al. (2015).⁷ The model assesses the extent to which CSR disclosures are fulfilling some key qualitative characteristics of useful information, drawing from both the conceptual frameworks for financial reporting (IASB and FASB) and the principles for CSR reporting (GRI), i.e.: relevance, comparability, clarity, verifiability and neutrality. We discuss in the following each characteristic identified and explain the way we use them in our analysis. The scoring criteria are presented in table 1.

Relevance. According to the IASB's conceptual framework for financial reporting, relevance of information is a fundamental qualitative characteristic, which refers to information "capable of making a difference in the decisions made by users" (IASB, Conceptual Framework, QC6). Materiality of information is an entity specific component of relevance, which refers to information that if omitted or misstated 'could influence decisions that users make on the basis of financial information about a specific reporting entity' (IASB, Conceptual Framework, QC11). These characteristics are considered also in the GRI's CSR reporting guidelines. In particular, relevant topics to report on are 'those that may reasonably be considered important for reflecting the organization's economic, environmental and social impact or influencing the decisions of stakeholders'. Relevant aspects may be potentially included in a report. Materiality is the threshold at which the aspect becomes so important that it should be included in the report (GRI, 2013, p.11). Decision regarding the content of the report shall be based on a materiality assessment, which considers internal and external factors. Among other, the materiality analysis should involve stakeholders, to identify their information needs and take in account regulations and agreement the organization is expected to comply.

Neutrality. This characteristic, called balance in the GRI guidelines, is classified as fundamental in financial reporting and concerns the selection and presentation of information without bias or manipulations aiming at increasing the probability that it will be received favorably or unfavorably by report users. (IASB, Conceptual Framework, QC11). In the context of CSR reporting neutrality implies disclosing both positive and negative aspect, in order to provide an unbiased picture of CSR performance of the company and enable a reasonable assessment of companies' impacts (GRI, 2013). However, firms seem to be reluctant in disclosing negative aspects as it can endanger corporate legitimacy (Hahn and Lülfs, 2014). In addition, they seem to be incentivized to provide together with negative information more positive disclosure (Chauvey et al., 2015).

Comparability. This characteristic plays a central role and is explicitly mentioned in the EU-Directive, as enhancing comparability of CSR reporting represent the motivation for the EU intervention in non –financial reporting (Directive 2014/95/EU, p. 2). The conceptual framework for financial reporting states that 'information is more useful if it can be compared with similar

⁷ However, differently from Chauvey et al. (2015) we focus only on one issue included in CSR reports (anti-corruption) and not on the whole CSR report.

information about other entities and with similar information about the same entity for another period' (IASB, Conceptual Framework, QC20). The provision of comparable information is valued also by the GRI, because it allows stakeholders to analyze change in the performance over time and to evaluate performance relative to other organizations. In order to allow comparison, it is essential to provide information with time references, benchmark references and boundaries definitions. In addition, referencing to a particular disclosure framework enhance comparability.

Verifiability. Information is verifiable when 'different knowledgeable and independent observers could reach consensus, although not necessarily complete agreement, that a particular depiction is a faithful representation (IASB, Conceptual Framework, QC 26). In particular, information can be verified directly, (i.e. through direct observation) or indirectly, i.e. by verifying the input and recalculating the outputs. In case of narrative disclosure is necessary to provide the necessary factors and circumstances supporting the information.

Clarity. This characteristic, also known as understandability of information, allows the range of stakeholder to find information without unreasonable effort and to understand and use it for their decision making. According to the IASB classifying, characterizing and presenting information in a clear and concise way increases its understandability (IASB, Conceptual Framework, QC30). According to GRI, an appropriate level of detail, the use of graphics and table and the inclusion of explanations of terms may help make information more accessible and understandable (GRI, 2013). We examined the disclosures and verified the presence of each of the attributes listed below. The presence of each of the attributes was awarded one point. More specifically, we evaluated the relevance of information (three attributes) with regard to the whole anti-corruption disclosure, while we examined for the presence of the other characteristics (eight attributes) relative to each of the seven issues identified above. This distinction was necessary because the attributes related to relevance of information can be assessed only with regard to the whole disclosure. Therefore, the maximum score for informational quality is 56 points.

Figure 1. Attributes to informational quality

Qualitative Characteristics and attributes	Explanations
Fundamental qualitative characteristic	
Relevance	
<ul style="list-style-type: none"> Materiality assessment 	Corruption is a material topic according to a materiality analysis
<ul style="list-style-type: none"> Dialogue with stakeholders to define informational needs 	Stakeholders are involved in this materiality assessment
<ul style="list-style-type: none"> Reference to specific law and regulations 	Indication of specific laws, which make corruption relevant to the reporting company
<i>Enhancing qualitative characteristics (assessed for each of the above listed topic areas)</i>	
Comparability	
<ul style="list-style-type: none"> Temporal features and comparisons 	The data provided present temporal features and comparisons also with other companies
<ul style="list-style-type: none"> Comparisons with other companies 	
<ul style="list-style-type: none"> Reference to external norms or standards 	The topic is dealt with by referencing to a particular disclosure framework or standard.
<ul style="list-style-type: none"> Clear definition of disclosure boundaries 	Indication of the parts of the company the information is referring to.
Verifiability	
<ul style="list-style-type: none"> The information is verifiable 	Supporting information for verification is provided
Clarity	
<ul style="list-style-type: none"> Definition of concept 	General description of the topic/instrument
<ul style="list-style-type: none"> Clear presentation of data and indicators 	Provision of concrete data and quantitative indicators related to the topic
<ul style="list-style-type: none"> Explanation of the methods 	Provision of additional explanations and definitions

In addition, we measured the neutrality of the whole disclosure on anti-corruption by verifying the presence of information on negative events or indicators.

The scoring model was first tested on 10 reports (5 for each year), in order to evaluate its applicability and adequateness to capture the scope of the disclosure and its informational quality. This pilot test involved three researchers and one of the authors, which reviewed and scored the disclosures. Discrepancies emerging from the tests were discussed and based on them the attributes were improved.

5. RESULTS

Descriptive Statistics

Table 1 summarizes descriptive statistics for the main variables used in the statistical analysis. Observed variables are: the number of words included in the text section addressing the topic anti-corruption (NWords); the measure of the breadth of the disclosure ranging from 0 to 7 (Breadth); the overall anti-corruption informational quality score (TotalScore) ranging from 0 to 56 and presented in Table 6; a dummy variable (Corrupt Exp IS) indicating if a firm operates in a corruption exposed industry sector; a dummy variable (Neg Disc) indicating if a firm did negative disclosure on a voluntary basis; net sales or revenues (Sales); a variable related to the dimension of a firm (Size) computed as the logarithm of Sales; the return on assets (ROA); the ratio between total debt and total capital (Leverage) and the ratio of the total value of assets to the generated sales revenues (Capital Intensity).

Table 1. Descriptive Statistics

<i>Variables</i>	2012					2015				
	<i>n</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std.dev</i>	<i>n</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std.dev</i>
NWords	55	0.00	1361.00	321.50	380.89	55	0.00	2000.00	417.00	440.10
Breadth	55	0.00	7.00	2.71	2.25	55	0.00	7.00	3.46	2.34
TotalScore	55	0.00	24.00	6.76	6.45	55	0.00	28.00	9.29	7.92
Corrupt Exp IS	55	0.00	1.00	0.45	0.50	55	0.00	1.00	0.45	0.50
Neg Disc	55	0.00	1.00	0.25	0.44	55	0.00	1.00	0.36	0.49
Sales(Euro/1000)	55	472	361,900	38,170	61,051	55	1,375	240,200	36,770	50,592
Size	55	13.07	19.71	16.56	1.41	55	14.13	19.30	16.69	1.23
ROA	55	-10.31	19.23	5.20	5.33	55	-8.49	17.94	5.72	4.83
Leverage	55	0.03	84.95	44.20	20.01	55	0.10	95.91	43.07	20.04
Capital Intensity	55	1.11	296.50	12.77	40.61	55	1.07	54.57	7.90	8.55

As indicated in the table, our sample companies are relatively large with a mean sales revenue of 38,170 million Euros in 2012 (36,770 million Euros in 2010) and profitable with a mean ROA of 5.20 % in 2015 (5.72 % in 2012). The mean leverage of the firms stands at 44.20 % of total assets in 2015 (43.07 % in 2012), whereas the mean capital intensity is 12.77% in 2015 (7.90% in 2012). There were about 25 firms (in both years) from corruption exposed industry sectors (variable Corrupt Exp IS) corresponding to a proportion of about 45% in each year) and, w.r.t. the variable Neg Disc, about 14(20) firms who did negative disclosure on a voluntary basis in 2015 (2012). Finally, the mean scores for quality are 321.5, 2.71 and 6.76 in terms of total number of words, breadth and informational quality score in 2015, respectively (417.00, 3.46, and 9.29, respectively, in 2012).

Number of Words used in the anti-corruption topic

Table 2 summarizes the mean number of words included in the text section addressing the topic anti-corruption for our sample firms across years 2012 and 2015.

Table 2. Mean Words for anti-corruption disclosure 2012 versus 2015

	All sample	Corrupt Exp IS = NO	Corrupt Exp IS = YES
n	110	60	50
2012	321.49	223.37	439.24
2015	417.00	359.00	486.60
pvalue	0.11	0.06	0.36

The magnitude of differences in the number of words has been assessed statistically through the t-test for differences between means. The tests consider paired samples since, as explained in the section about sample selection, we observe 55 firms in each of the two reporting years. Among these, 30 firms operate in corruption-exposed risk sectors and 25 in sectors not exposed to corruption risk. For the whole sample, the mean number of words increased from 321.5 in 2012 to 417.00 in 2015. This difference is not statistically significant. To more carefully assess the extent of changes in space devoted to the anti-corruption topic, we separately tested for changes in the number of words for a sub-group of firms belonging to industry sectors not exposed to corruption (Corrupt Exp IS = “NO”) either in 2012 or 2015, and for firms belonging to corruption exposed industry sectors in both years (Corrupt Exp IS = “YES”). The second and third rows of Table 2, respectively, report the results of these additional analyses. It is possible to notice that the mean number of words included in the width of the space addressing the topic anti-corruption for firms belonging to sectors not exposed to corruption increased, on average, of about 136 words (from about 223 words in 2012 to 359 words in 2015). This difference is significant at conventional levels. Contrariwise, the width of the same space for firms belonging to sectors exposed to corruption increased, on average, of about 47 words only (from about 439 words in 2012 to 487 words in 2015). This (limited) increase is not statistically significant.

Overall, the assessments of changes in the number of words included in the text section addressing the topic anti-corruption indicate that firms increased the width of the space devoted to this information, but not significantly. Results of the subgroup analysis support the idea that the increase in the number of words is more pronounced (and significant) for firms operating in industry sectors typically not exposed to corruption.

Breadth of disclosure of information about anti-corruption

Data related to the extent of disclosure of information on anti-corruption across the 7 areas are presented in Table 3. Once again, the analysis is carried out for all sample firms and, separately, for firms with Corrupt Exp IS = NO and Corrupt Exp IS = YES. We counted how many firms were reporting information about a specific area in 2012 and 2015 and tested for the significance of the difference in proportions.

Table 3. Breadth of disclosure on anti-corruption: 2012 versus 2015

All sample	RiskAsses	Risks	Training	OthPol	SupplyChain	Whistlebl	CasesReaction
n	53	14	71	73	42	32	54
2012	26	6	32	33	19	11	22
2015	27	8	39	40	23	21	32
pvalue	0.50	0.39	0.12	0.11	0.28	0.03	0.04
<i>Corrupt Exp IS = NO</i>							
n	24	7	37	39	14	18	25
2012	12	3	17	17	6	7	10
2015	12	4	20	22	8	9	15
pvalue	0.50	0.50	0.34	0.21	0.39	0.39	0.18
<i>Corrupt Exp IS = YES</i>							
n	29	7	34	34	28	16	29
2012	14	3	15	16	13	4	12
2015	15	4	19	18	15	12	17
pvalue	0.50	0.50	0.27	0.42	0.41	0.03	0.19

Notes: RiskAsses = Corruption risk assessment; Risks = Corruption risks; Training = Employee-training on anti-corruption matters; OthPol = Other anti-corruption policies; SupplyChain = Anti-corruption measures related to the supply chain management; Whistlebl = Whistleblowing systems for corruption cases; CasesReaction = Corruption cases and corporate reaction to them.

Results reported in Table 3 shows that, for all areas, the number of firms reporting information increases from 2012 to 2015. This result holds for the whole sample as well as for the two sub-samples. Looking at statistical significance, it emerges that: a) differences in *Whistleblowing systems for corruption cases* (Whistlebl) and for *Corruption cases and corporate reaction to them* (CasesReaction) are significant for the whole sample; b) for the firms belonging to industry sectors not exposed to corruption (Corrupt Exp IS = “NO”) the analysis for the 7 areas shows that there is no significant increase in the proportions of firms from 2012 to 2015; c) for the firms belonging to industry sectors exposed to corruption (Corrupt Exp IS = “YES”) only the increase in the number of firms providing information about the *Whistleblowing systems for corruption cases* is significant.

The different scopes identified for the information about anti-corruption concur to the definition of a score ranging from zero to 7. Table 4 reports the results of the t-test for the difference in the mean score measuring the breadth of the disclosure of information about anti-corruption in 2012 and 2015. For the whole sample (sample of firms belonging to sectors exposed to corruption) the increase in the average score from 2.71(3.08) in 2012 to 3.45(4.00) in 2015 is significant at conventional levels.

Table 4. Mean scores for Breadth of disclosure on anti-corruption 2012 versus 2015

	<i>All sample</i>	<i>Corrupt Exp IS = NO</i>	<i>Corrupt Exp IS = YES</i>
n	110	60	50
2012	2.71	2.4	3.08
2015	3.45	3.0	4.00
pvalue	0.05	0.14	0.09

Relevance

As previously reported, we evaluated the relevance of anti-corruption information disclosure by considering three attributes: the materiality assessment, the dialogue to define materiality topics and the reference to law and regulations dealing with anti-corruption issues. For each firm, all these attributes can be coded as a 0/1 variable and allow us to define a relevance score for each firm ranging from zero to 3. We checked for the significance of the differences between average values of the relevance score in 2012 and 2015 through the t-test (Table 5). For the whole sample, the mean number relevance score increased from 0.69 in 2012 to 1.05 in 2015. This difference is significant at conventional levels. Next, we separately tested for changes in the relevance score for a sub-group of firms belonging to industry sectors not exposed to corruption, and for firms belonging to corruption exposed industry sectors in both years. The second and third rows of Table 5, respectively, report the results of these additional analyses. It is possible to notice that the mean relevance score for the first group of firms increased, on average, of 0.40 points (from 0.43 in 2012 to 0.83 in 2015). This difference is significant at conventional levels. Contrariwise, the relevance score for firms belonging to sectors exposed to corruption increased, on average, of 0.32 points (from 1.00 in 2012 to 1.32 in 2015). This increase is not statistically significant. Overall, results of these tests are in line with those obtained from the analysis of the changes in the number of words used to disclose anti-corruption information.

Table 5. Mean scores for Relevance of disclosure on anti-corruption: 2012 versus 2015

	<i>All sample</i>	<i>Corrupt Exp IS = NO</i>	<i>Corrupt Exp IS = YES</i>
n	110	60	50
2012	0.69	0.43	1.00
2015	1.05	0.83	1.32
pvalue	0.04	0.05	0.16

Informational Quality

Next step of the empirical analysis is the measurement of the informational quality of anti-corruption disclosures.

Table 6. Quality of disclosure on anti-corruption by attribute and area: 2012 versus 2015

Attribute by area	RiskAsses	Risks	Training	OthPol	SupplyChain	Whistlebl	CasesReaction	Average Score (max=7)
Panel A: 2012								
<u>Comparability</u>								
TempFeat	0	0	6	1	2	0	3	0.22
Comparisons	0	1	0	0	0	0	0	0.02
Reference	21	1	20	5	3	1	20	1.29
DefDisclBound	11	1	9	7	3	1	2	0.62
<u>Verifiability</u>								
VerifInf	1	1	1	9	1	1	3	0.33
<u>Clarity</u>								
DefConcept	20	6	29	33	18	10	15	2.38
DefDatas	3	1	22	3	4	2	14	0.89
ExplanMeth	6	2	21	12	6	2	7	1.02
Average Score(max=8)	1.27	0.25	1.96	1.27	0.67	0.31	1.16	Average TotalScore (max 56) 6.76
Panel B: 2015								
<u>Comparability</u>								
TempFeat	0	0	5	2	0	0	3	0.18
Comparisons	0	0	0	0	0	0	0	0.00
Reference	22	3	27	9	9	8	27	1.91
DefDisclBound	5	2	13	9	7	3	4	0.78
<u>Verifiability</u>								
VerifInf	2	2	1	18	0	5	2	0.55
<u>Clarity</u>								
DefConcept	20	7	37	40	24	20	28	3.02
DefDatas	5	2	21	5	9	6	18	1.20
ExplanMeth	8	4	24	15	10	8	12	1.47
Average Score(max=8)	1.27	0.36	2.33	1.78	1.07	0.91	1.71	Average TotalScore (max 56) 9.29

Notes:

- RiskAsses = Corruption risk assessment; Risks = Corruption risks; Training = Employee-training on anti-corruption matters; OthPol = Other anti-corruption policies; SupplyChain = Anti-corruption measures related to the supply chain management; Whistlebl = Whistleblowing systems for corruption cases; CasesReaction = Corruption cases and corporate reaction to them.
- TempFeat = Temporal features and comparisons; Comparisons = Comparisons with other companies; Reference = Reference to external norms or standards; DefDiscBound = Clear definition of disclosure boundaries; VerifInf = The information is verifiable; DefConcept = Definition of concept; DefDatas = Clear presentation of data and indicators; ExplanMeth = Explanation of the methods

Table 6 summarizes the attributes and areas of anti-corruption disclosure quality for our sample firms (Panel A depicts the data for 2012 disclosures whereas 2015 data are summarized in Panel B). Individual cells identify the number of sample firms that are awarded points for each characteristic within each area of disclosure. The final column of the table indicates the sample average score (out

of a possible 8 points) for each of the quality characteristics while the final row shows the average quality score (out of a possible 7 points) by area of disclosure. The bottom right cell of the table shows the mean overall anti-corruption informational quality score (out of a possible 56 points).

As for the numerical results, it is worth observing that the overall anti-corruption informational quality score is rather low in both years: The mean informational quality score is only 6.76 (out of a possible 56) in 2012, and still only 9.29 in 2015. For 2012, the informational quality item most reflected in the disclosures of anti-corruption information is the *Definition of concept* (DefConcepts) related to the attribute Clarity of information, presenting a sample mean of 2.38 (out of a possible 7), and only two other attributes, the *Reference to external norms and standards* (Reference) for Comparability and the *Explanation of the method* (ExplanMeth) for Clarity, exhibit an average score higher than one. With respect to the areas of anti-corruption disclosure, *Employee training on anti-corruption matters* (column Training) has the highest score in 2012 (an average score of 1.96 out of a possible 8) followed by *Corruption Risk assessment* (RiskAsses) and *Other anti-corruption policies* (OthPol) with an average score of 1.27 out of a possible 8.

Overall, informational quality scores across six areas showed increases in 2015 relative to the 2012 scores; the only exception is *Corruption Risk assessment* (RiskAsses) that obtained the same score in both years. Although consistent with the earlier period, *Employee-training on anti-corruption matters* (Training: an average score of 2.33) and *Other anti-corruption policies* (OthPol: mean of 1.78) disclosures continued to show the highest quality in 2015, but the most pronounced increase is observed for the areas *Whistleblowing systems for corruption cases* (Whistlebl) and *Corruption cases and corporate reaction to them* (CasesReaction), whose score reaches respectively 0.91 and 1.71 in 2015 (from 0.31 and 1.16 in 2012).

As for the comparisons across quality attributes, it is worth to notice that all the scores are increasing in 2015 but not those related to the attributes *Temporal features and comparisons* (TempFeat) and *Comparisons with other companies* (Comparisons) related to Comparability of information. For the latter, the attribute *Reference to external norms or standards* (Reference) is that presenting the highest increase in average score (+0.62) together with the attribute *Definition of concept* (DefConcept) related to Clarity of information (+0.64).

Table 7. Mean anti-corruption disclosure information quality scores: 2012 versus 2015

	All sample	Corrupt Exp IS = NO	Corrupt Exp IS = YES
n	110	60	50
2012	6.76	5.10	8.76
2015	9.29	6.80	12.28
pvalue	0.03	0.13	0.07

Table 7 presents comparisons of mean informational quality scores across 2012 and 2015 for the total sample, firms operating in sectors not exposed to corruption (Corrupt Exp IS=NO), and firms operating in sectors exposed to corruption (Corrupt Exp IS=YES). For all sample firms, the difference in overall informational quality scores between 2012 (mean of 6.76) and 2015 (average score of 9.29) is statistically significant at the .003 level, one-tailed. Similarly, mean scores across 2012 and 2015 for the 50 firms in sectors exposed to corruption (means of 8.76 and 12.28, respectively) are significantly (at $p = .007$, one-tailed) different. On the contrary, informational quality scores for the 60 companies operating in sectors not exposed to corruption are lower, on average, than those in the other sub-group, and they show a limited improvement over time. The mean informational quality score for these firms was 5.10 in 2012 and rose to only 6.80 by 2015. This difference is not statistically significant at conventional levels.

Legitimacy analysis

In this Section, we check if there has been a relevant growth of quantity, scope and informational quality of the disclosure on anti-corruption in time and, at the same time, if the same measures of disclosure on anti-corruption are associated with negative disclosure on corruption and to the corruption exposure of the company. Furthermore, this association is measured taking also into account if the size of the company is a discriminating factor of the propensity towards disclosure on anti-corruption. Table 8 presents the results of our regression analyses on the three disclosure measures (number of words, breadth and informational quality) for the 74 sample firms reporting on anti-corruption in both years 2012 and 2015. The restriction of the analysis to companies reporting on anti-corruption in both years is necessary to evaluate the time effect explained by the first explanatory variable, denoted as year, which has been coded as equal to zero if the information about anti-corruption comes from year 2012, otherwise it has been set equal to 1. The three columns of Table 8 report the estimated coefficient and t-statistics for the regression model estimated considering as dependent variable the number of words (NWords), the breadth of disclosed information (Breadth) and the total score obtained w.r.t. scopes and areas (TotalScore), respectively.

Table 8. Regression results for the relation between anti-corruption disclosure and observed variables

$\text{Discl}_i = b_0 + b_1 \text{year}_i + b_2 \text{NegDisc}_i + b_3 \text{Corrupt Exp IS}_i + b_4 \text{Size}_i$			
	Dependent variable		
	Nwords	Breadth	TotalScore
Intercept	-885.92 (-1.59)	2.14 -0.87	-3.84 (-0.49)
year	70.35 -0.83	0.65 (1.75)*	2.49 (2.08)**
NegDisc	298.79 (3.21)***	0.78 (1.90)*	4.89 (3.71)***
Corrupt Exp IS	47.85 -0.55	0.47 -1.21	3.34 (2.69)***
Size	72.28 (2.12)**	0.07 -0.49	0.6 -1.25
Adj. R ²	0.25	0.11	0.36
n	74	74	74

As shown in the table, all the four explanatory variables – year, negative disclosure on corruption (NegDisc), corruption exposure (Corrupt Exp IS) and firm size – are positively related to the dependent variable in the three estimated models. When looking at estimated coefficients in the different models, the following considerations can be drawn:

- the time effect (variable year) is significantly related to the dependent variables Breadth and TotalScore, but not with NWords. Thus, it could be argued that a significant average change in time is observed for the breadth and quality of reported information on anti-corruption, but not for the quantity (number of words) of the same information.
- the variable indicating negative disclosure on corruption (NegDisc) is significant at conventional levels in all the estimated models. Intuitively, it indicates that the propensity of a firm toward voluntary disclosure of anti-corruption information is significantly associated with the quality of quantity of the same information provided in both years 2012 and 2015.
- the variables Corrupt Exp IS and Size are significantly associated with the dependent variable only if the latter is specified as TotalScore and NWords, respectively.

At the same time, it is possible to consider the results by comparing each model with the others in terms of adjusted R².

7. DISCUSSION AND CONCLUSION

This study investigates the change in the corporate practice of disclosing information on anti-corruption policies and initiatives as part of CSR reporting. We explained that corporate reporting on anti-corruption contributes to corruption prevention; however, the few studies investigating this issue pointed out the differences in the coverage and lack of comprehensiveness of the disclosure. In order to improve corporate reporting, the European Union issued in 2014 a directive, requiring member states to mandate non-financial reporting including among others also the disclosures on anti-corruption. In consideration of this development, we examine if the voluntary disclosures in periods previous to the transposition of the directive in national legislation have been changing over time consequently to the European intervention. Following a legitimacy theory perspective, we expect companies to disclose more (in term of quantity and breadth) and to improve the quality of the information provided, in order to manage the legitimacy threat represented by the European directive. Further, we expect disclosures to be associated to legitimacy variables i.e. the disclosure of negative aspects related to anti-corruption issues, the sensitivity of the industry to corruption and company size.

While previous contributions about the disclosure of information on anti-corruption issues analyzed the disclosure at a particular point in time (Barkemeier et al., 2015; TI Deutschland, 2016, 2014, 2012), this study aims at capturing the change in the disclosure, by considering two reporting years. Further, the above mentioned pieces of literature focused on the content and compliance of information with the GRI guidelines. In contrast, this study adopts a more extensive approach to assess the disclosure drawing from Chauvey et al., (2015). Indeed, the study analyzes the change in disclosures by comparing the quantity (number of words), breadth (topics covered) and the informational quality (fulfilling of qualitative characteristics of information) of the disclosures on anti-corruption included in CSR reports referring to the year before and after the directive, respectively 2012 and 2015. Specifically, we considered a sample of 55 European companies listed in the EuroSTOXX 200 index and selected by controlling for size, industry membership and their exposure to corruption. We conducted the analysis on the whole sample as well as on two subsamples including firms operating in sectors exposed (25 firms) and not exposed (30 firms) to corruption risks.

The results show that the disclosure practice is changing over time, confirming our expectations. Specifically, the quantity, the scope of the information provided and its quality are increasing over time both in the whole sample as well as in the two subgroups. The statistical tests provide us additional insights. When considering the whole sample, the increase in scope and quality is statistically significant, while the increase in the space dedicated to the disclosure is not. We observe similar results in the subsample of companies operating in corruption sensitive sectors. This suggests an increase in the conciseness of the disclosures that is companies are dealing with more topics and improving the quality of the disclosure without devoting them more space.

The tests conducted on the other subsample of companies confirm a statistically significant increase only in the number of words. Further, we observe that this subgroup is characterized by lower scores concerning the space, the informational quality and to some extent the scope of the disclosure. These results suggest that the practice of disclosing information on corruption is new among companies not exposed to corruption. They developed their disclosures after 2012, probably as a reaction to the directive. This is also supported by the increase in the score of the relevance assessment, which is significant for the whole sample and for this subgroup. By contrast, companies exposed to corruption seem to have more experience in this field and are expanding the content and improving the quality of their disclosures.

As regards the topics dealt with in the disclosures, we observe an increase in the number of companies providing information for each of the seven areas considered in the analysis. However, the increase is statistically significant only for certain topics i.e. *whistleblowing systems for corruption cases* and for *corruption cases and corporate reaction to them*, when considering the whole sample and *whistleblowing systems for corruption cases* for the subsample of companies

exposed to corruption risks. In the subsample of firms not exposed to corruption risks, the difference is not statistically significant.

A deeper analysis of the assessment of informational qualitative characteristics (comparability, verifiability, clarity) shows an improvement in most of the seven areas analyzed. In general, the most reported topics in 2012 (employee training and other policies) show the highest quality scores. The disclosures concerning *whistleblowing systems* and *corruption cases*, which are showing in 2015 a significant increase in the number of reporters, show the most pronounced quality improvement. The comparison across the quality attributes shows that the comparability of information is increasing, in particular, due to the explicit reference to external standards for disclosures (e.g.: GRI-guidelines), which is also recommended in the EU directive. The improvement in clarity is mainly due to the increase in the disclosures of basic information about a particular topic (definition of concept).

The legitimacy analysis considered the association of growth in quantity, scope and quality with negative disclosures and the exposure on corruption risk. This association has been confirmed by the empirical tests. In line with the legitimacy theory, the disclosure of negative information is associated with broader and higher quality disclosures in both years. Further, particular socially exposed firms, firms exposed to corruption and larger firms, are dedicating more space and have higher quality disclosures.

Overall, the results suggest that companies are reacting to the change in social expectations disclosed in the EU directive, by proactively improving their reporting on corruption. It is worth noting, that despite the mentioned increase, companies are still reluctant when dealing with corruption issues in their reports. Indeed, the score we used to evaluate the scope and the quality of the disclosure increases but remains very low over time. Legitimacy factors play a role in explaining the amount and quality of the disclosure.

These results are consistent with and add to previous research. A certain reluctance in reporting on anti-corruption has been in fact pointed out both internationally (Barkemeyer et al., 2015) as well as among German companies (TI Deutschland, 2016, 2014, 2012). Further, such studies show that companies seem to be more prone to deal with anti-corruption training than on corruption cases and reaction, which is consistent with our results. In addition to it, our analysis shows an evolution and in which extent and directions the disclosure practice is changing.

This study is only a first step in analyzing the change in this disclosure practice and provides only initial insights; thus, several limitations must be noted. We examine only a limited sample of 55 European listed companies, which represents only a part of the population affected by the European intervention. In addition, the empirical analysis considers only two reporting years and does not allow the observation of the changes in reporting patterns taking place over time. Further, the analysis does not consider alternative causality relations, which might provide additional explanations for the change in the disclosure. Future research could deepen the analysis by considering additional explanatory factors such as the varying intensity of anti corruption policies over time, whether company faced corruption scandals in recent periods, whether companies are orienting their reporting to particular frameworks. These aspects potentially influence the disclosure strategies adopted by companies and might explain the increase or decrease in the amount disclosed and in the quality of information. Moreover, as stated also by Chauvey et al. (2015), the scoring model represents a subjective evaluation of informational quality. As such, improvement and alternative formulation of the criteria can also affect the explanatory power of the model. Finally, the classification criteria we adopted to distinguish corruption sensitive sectors are one of the alternatives available in the field. Testing other classification criteria, for example a more strict classification, may yield more insights for the evolution. Future research may consider these limitations to further develop this study and to improve the generalization of empirical findings.

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CORPORATE SOCIAL RESPONSIBILITY IN PHARMACEUTICAL INDUSTRY

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Abstract

Corporate social responsibility (CSR) and sustainability issues are nowadays present in the activity of organizations. It is interesting to study which is the relationship between a sector of activity which promise to improve the health of the people, but it is still criticized. In achieving this objective, we analyse the sustainability indicators and we also present the limits of CSR and future research opportunities. The main purpose of the present work is to ascertain the implementation level of the reporting in accordance with the GRI Index of the top ten drugs manufacturers, based on a content analysis method. The findings reveal that 70% of the drugs manufacturers analysed reported CSR actions and activities according to GRI Reporting Principles and Standards, while 30% of them disclosed their sustainability and CSR actions and activities in their annual reports, in vision or mission or corporate social responsibility reports or on their websites. Future research should take into account to collect data through interviews or surveys within drugs manufacturers and potential shareholders or stakeholders. The present work is rising awareness regarding CSR. The originality and the added value of this paper is that provides some practical information regarding CSR in the drugs manufacturers sector.

Keywords: citizenship, corporate social responsibility, drugs manufacturers, sustainability

1. INTRODUCTION

Corporate social responsibility and sustainability issues are nowadays present in the activity of organizations. It is interesting to study which is the relationship between a sector of activity which promise to improve the health of the people, by offering drugs at a high quality and at affordable prices, but it is also criticized. In achieving the objective of the research, we analyze the sustainability indicators and we also present the limits of corporate social responsibility and future research opportunities.

The pharmaceutical industry is one of the sector of activity which both direct and indirect impact on whole society (Droppert and Bennett, 2015).

Regarding the famous scandals, we can mention the case of GlaxoSmithKlein, one of the most important pharmaceutical company, which payed 3 billion dollars fine, because of the fact that was guilty for promoting an antidiabetic drug and antidepressants for unapproved uses (Paxil and Wellbutrin). Pfizer payed from similar reasons a fine of 2,3 billion dollars. Pharmaceutical companies are also known for false advertising or misreporting.

Besides the negative issues discovered within this sector of activity, it seems that more companies are involved in corporate social responsibility actions and activities. Like we can observe from their reports, the pharmaceutical companies started to donate money or drugs, cut down the prices of drugs, and also invested in healthcare infrastructure (Tolve, 2011).

Many organizations are investing their profits into corporate social responsibility actions and activities. The main objectives of this paper is to deliver the link between pharmaceutical industry and corporate social responsibility.

The trust in pharmaceutical companies of different customers is formed on the brand assessment, on the reputation and credibility of the company. It is well known that most drugs present the benefits within ads, but the risks are not presented (Fisher, 2009, Kietzmann et al.,

2011). This aspect has an influence on the fact that the drugs are the one of the main causes when talking about urgent medical hospitalization, or maybe death (Greene et al., 2012).

Organizations try to incorporate within their current activity practices regarding corporate social responsibility. These actions and activities are not stipulated by law. Organizations adapt to new business practices in order to create a better world, or to increase their performance or their image.

Many companies create corporate social responsibility reports, in order to disclose the actions and activities developed. In this way organization are motivated to perform better and to improve their activity, in order to become more socially responsible.

The main factor involved in the implementation of corporate social responsibility actions and activities is communication, because it helps organizations to make progresses. Communication ensures high standards, feedback and performance.

Pinney developed a model of report disclosed in four domains such as values, mission, principles and policies, community support, operations and products and services (Pinney, 2009).

The pharmaceutical industry is a part of service sector, which plays an important role, because is operating within a competitive environment.

The pharmaceutical sector is one of the most dynamic one from the industry. The global market in pharmaceuticals is worth US \$300 billion per year, and is expected to rise (World Health Organization, 2016).

Drug manufacturers, being involved in production, are seen not to be in accordance with corporate social responsibility. We can observe a conflict between actions, activities and words (Grougiou, Dedoulis, Leventis, 2016).

The studies in pharmaceutical industry research issues such as the customer perception and attitudes regarding corporate social responsibility (Wang, 2011), ethics (Nussbaum, 2009, Countess, Fort, 2014), advantages of corporate social responsibility in pharmaceutical industry (Droppert, Benett, 2015).

Companies inform their stakeholders about corporate social responsibility actions and activities through different communication channels, such as corporate social responsibility reports, press releases, a dedicated section on their websites, corporate governance reports, sustainability reports, citizenship reports, tv commercials, magazines, product packing.

A question is arising: it is good for companies to imitate and practice social responsibility like a natural state? Maybe this imitation is affecting the brand and the culture of organization. It is interesting to discover which are the interests of organizations in developing practical corporate social responsibility actions and activities, since corporate social responsibility is becoming an attractive strategy of communication with stakeholders. In this regard, through the present study we research what are the corporate social responsibility actions and activities developed within pharmaceutical industry and also what are the indicators disclosed in reports of the pharmaceutical companies.

There are many forms of corporate social responsibility. We can talk about internal corporate social responsibility and external one. The internal one is linked with employees, and refers to safety health and stability of workplace, salary payment, medical and health insurance, trainings offered, teambuilding organised. Sponsorships, quality products, environmental issues refer to external corporate social responsibility. Both of them are important for the company.

Another fact that it is well known is that there is a relationship between pharmaceutical companies and doctors. It is something controversial, but there are doctors that are close to drug manufacturers. They work together. Sale representatives from drug manufacturers are coming to the doctors' offices in order to present the newest drugs, to sponsor research and education. This is a question of conflict of interest, because doctors receives money from prescribing certain drugs. Nevertheless, many companies from pharmaceutical sector are concerned about corporate social responsibility (Kang, Lee, Huh, 2010).

There are also “orphan drugs”, that ones that need to treat rare diseases. These require large investments, because we talk about a niche market, about lack of information regarding treatments, so they demand also a special attention from a corporate social responsibility point of view.

In Europe it is considered a rare disease that one that concerns only 1 person out of 2000. There are over 7.000 rare diseases, according to European Organization for Rare Diseases (EURODIS).

The quality of drugs is a humanity concern. There are counterfeit drugs especially in Africa, but the falsification is a worldwide problem. Fake drugs are difficult to be identified, as the internet is used by everybody and there are plenty of drugs which are sold without any prescription. The danger related to fake drugs refers to the active substance, or toxic packaging, wrong formulas, problems with storage conditions, absence of active substance. From this point of view, using them represent a crime against patients. One of the solution in this regard could be the existence of an effective patent protection. This ensure safe drugs, high quality drugs, new drugs to treat new diseases. But obtaining a patent is time consuming and also patience consuming.

In our paper we start with the literature review regarding sustainability and corporate social, economic, environmental responsibility aspects, followed by the research methodology. We also presented the results and some discussions, together with the conclusions and future research.

2. LITERATURE REVIEW

Within the literature, there are opposite opinions regarding the implementation of corporate social responsibility and sustainability issues. It is well known the debate between Dodd and Berle and Manne and Berle (Berle, 1931). In Berle’s opinion, the only responsibility of the managers is to obtain profit. Dodd considers that besides this aspect it is important for a manager to be responsible with the employees, customers and other stakeholders (Berle, 1962).

Other different views of corporate social responsibility are those of Milton Friedman and Friedrich Hayek, which consider that the mission of the organization is to obtain profit and other activities are only for disturbing for the core objective of the company (Hayek, 1969). This is fundamental on the study realized which investigates the correlation between financial performance and corporate social responsibility.

Corporate social responsibility actions and activities become a core principle of any organization. From this point of view, these issues have also an influence when establishing the performance of that company (Benavides-Velasco et al., 2014).

We try to fill a gap from the literature by investigating the role of corporate social responsibility in manufacturing companies, from a specific sector of activity, using the disclosed data on their websites and within different reports, such as integrated report, annual report, citizenship report, corporate social responsibility report, sustainability report.

Corporate social responsibility is industry specific and depends also on the organizational culture. From this point of view, it is difficult to develop an universal reporting model for all companies (Nijhof et al., 2007).

The core objective of pharmaceutical companies are to develop, to research and to manufacture quality drugs in order to improve the health of the people (increasing the life expectations, decrease the infant mortality, improve the treatment methods) and to obtain gain (Leisigner, 2009).

Drugs try to cure different diseases, in order to improve the health of the people. This is possible only with safety and high quality products.

The pharmaceutical industry is one of the fastest growing sector of activity and is both a chemical and a manufacturing one. From an environmental point of view, not polluting or reduction of pollution is an important aspect, but it is known the fact that such an organization pollutes water, air, land (Oger, 2009) and also consumes natural resources or contaminates the nature.

Studies demonstrated that the pharmaceutical sector is one of the most profitable one (Dukes, 2006).

Both in emerging and developed countries the pricing of drugs creates controversy (Puig-Junoy, 2005). A sensitive topic on corporate social responsibility is represented by the tests on animals. They should be replaced by computer simulators, in order to not kill those animal or to not suffer of any side effects. Some studies demonstrated that this kind of testing do not ensure the same results like a living body (Taylor, 2005).

Clinical tests are also sensitive. The participants in the research studies should be well informed regarding the objective of the study carried out, the estimated results, the consequences, the safety and the confidential aspects. Within developed countries these studies might be accepted by patients, out of any financial reason (Helmchen, 2011).

Another sensitive issue is represented by the bribery of doctors in different forms, in order to deliver information regarding drugs and different side effects (Russo, 2014).

The stakeholders within the pharmaceutical industry are represented by shareholders, creditors, suppliers, employees, doctors, distributors, patients, hospitals, medical insurance institutions, media, community.

Corporate social responsibility practices do change over time. In this regard it is needed research in this field and the drugs manufacturers should integrate in their strategy and policy corporate social responsibility practices.

The pharmaceutical sector has some characteristics, due to the variety of stakeholders and regulations. In this sector of activity we can observe the presence of corruption, of different scandals, fraud, manufacturing practices violation, price reporting violation, changing contracts stipulations, false invoices, favouring relatives.

There are researchers that demonstrated that corporate social responsibility actions and activities has a positive influence on company reputation (Spence, 2002).

There are other studies in the literature that show the positive influence of corporate social responsibility on reputation of the company (Yoon et al., 2006, Stanaland et al., 2011, Park, Lee and Kim, 2014).

An organization involved in corporate social responsibility actions and activities has quality products (Raithel and Schwaiger, 2015). This have been demonstrated by studies developed in different sectors of activity, such as restaurants, hospitality (Su et al., 2017, Benavides-Velasco et al., 2014, Guillet and Mattila, 2010; King et al., 2011;) energy, retail, airline (Walsh et al., 2006), tourism (Garay et al., 2011), pharmaceutical industry (Min et al., 2017).

Corporate social responsibility has been researched all over the world, in order to establish the relationship between business and society (Chamber et al., 2003). When talking about corporate social responsibility an important place is taken by transparency of the organizations involved in such actions and activities (Dubbink et al., 2008). This is translated into creating a long term relationship with the customers of that company (Mittal et al., 2015).

Our research investigates the implementation of GRI Principles within pharmaceutical sector, by taking into account top ten drugs manufacturers at global level, after total revenues of the 2016 financial exercise, such as Pfizer, which relieve trachoma, Merck, that delivered HIV treatment and HPV vaccination free of charge for Rwanda, Johnson & Johnson, F. Hoffmann-La Roche, Ag Sanofi Novartis, Ag Abbvie Inc, Astrazeneca Plc, Gilead Science Inc, Amgen Inc.

Thus, we can affirm that the pharmaceutical companies are involved in corporate social responsibility actions, even if we can talk here about consuming resources, on long run, all these actions and activities can drive revenue back to the company and also to the community.

At international level, the pharmaceutical industry is a competitive environment, and managers try to behave in a social responsible way. (O'Riordan, Fairbrass, 2008).

The pharmaceutical sector manufactures products which directly affect the health of the people (Smith, 2008). From this point of view, a behaviour that is not according to corporate social responsibility issues is more destructive (Blomback, Scandeliuss, 2013).

3. DESIGN/METHODOLOGY/APPROACH

Regarding the research, we should discover the answers to the following questions: *How can we assess the corporate social responsibility practices? What are the corporate social responsibility actions and activities developed within pharmaceutical industry? What are the indicators disclosed in reports of the pharmaceutical companies?*

Through the present paper we developed an empirical study, regarding the sustainability indicators, in accordance with the research methodology. We centralized data from sustainability reports of top ten drugs manufacturers (Table 1).

Among the motivation to involve in corporate social actions and activities, which contributes to sustainability on long run, Sprinkle and Maines (2010) mentioned increasing investments, increasing customers, turnover, reputation, employment, cost reduction (Bauman and Skitka, 2012).

Like a method of research was used the content analysis, which is one of the most used one for financial reports (Giannarakis et al., 2011).

In order to address all the research questions, we selected top ten drugs manufacturers at global level, after the total revenues realized as of the end of the 2016 financial exercise. We used a qualitative research, we analysed in content the sustainability reports of the pharmaceuticals companies, at group level.

We took into consideration some criteria when selecting the sector of activity. We tried to ensure the homogeneity of the selected sample. Another argument was the fact that this is one of the most important industry sector.

Table 1. Selected drug manufacturers

NO.	NAME	HEADQUARTERS	TURNOVER
1.	PFIZER	USA	52,824
2.	MERCK	USA	39,807
3.	JOHNSON & JOHNSON	USA	71,890
4.	F. HOFFMANN-LA ROCHE AG	SWITZERLAND	51,082
5.	SANOFI	FRANCE	35,850
6.	NOVARTIS AG	SWITZERLAND	48,518
7.	ABBVIE INC	USA	25,638
8.	ASTRAZENECA PLC	UK	23,002
9.	GILEAD SCIENCE INC	USA	30,390
10.	AMGEN INC	USA	22,991

Source: the authors

4. FINDINGS/RESULTS

The Global Reporting Initiative (GRI) guidelines present the reporting principles and also specific guidelines regarding sustainability reporting. The structure of a sustainability report consists of economic, environmental and social performance reporting, and is also known as triple bottom line reporting. GRI reporting is based on eleven principles like: accuracy, auditability, clarity, comparability, completeness, inclusiveness, neutrality, relevance, sustainability context, timeliness, transparency.

Not all pharmaceutical companies have the same level of indicators within their reports. Economic indicators are based on the annual financial statements. The environmental indicators refers to the manufacture features of these companies, such as waste, consumption or conservation

of energy and water, packing materials, recycling, investments in renewable resources, emissions, quality standards. The social indicators reflect the relationship with the employees, with the customers, as well as with the local community.

Regarding triple bottom line, we divided the indicators into three main categories, economic (economic performance, market presence, indirect economic impacts, procurement practices), environmental (materials, energy, water biodiversity, emissions, effluents and waste, products and services, compliance, transport, overall, supplier environmental assessment, environmental the grievance mechanisms), social (labor practices and decent work, human rights, society, product responsibility).

Table 2. CSR issues within the organization

No	Company	Percentage
1	CSR activities	70%
2	Specific policies	70%
3	CSR department	70%
4	Separate philanthropy entity	70%
5	Partnerships	70%
6	Integrated reporting	40%

Source: the authors

The findings reveal a total number of 90 indicators, which were used in these reports. We analysed the Global Reporting Initiative (GRI) indicators used by 10 companies. The most reported indicators are EC1, EC9, EN8, EN23, EN27, EN33, LA1, SO3, SO6, PR1, while the last reported indicators are EC10, EN15. The results obtained are important for future research in this area, for both managers and researchers. The sources of information that were used, were the drugs manufacturers, which provided the basic information on studying the sustainability indicators in the pharmaceutical sector.

The research revealed that not all companies from our sample reported on all three areas of the triple bottom line. Findings are in accordance with the research of Brown et al.'s (2009), who said that the GRI is becoming an established institution. The Sustainability Report, The Integrated Report, The Citizenship Report or the Corporate Social Responsibility Report highlight more environmental indicators. The environmental category was by far the most represented with 33 disclosed indicators, followed by the labour practices category, with 16 indicators.

Table 3. The GRI Indicators by Aspects from the Sample

No.	Symbol	Indicator	Degree of compliance
1	EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments	60%
2	EC2	Financial implications and other risks and opportunities for the organisation's activities due to climate change	40%
3	EC3	Coverage of the organisation's defined benefit plan obligations	30%
4	EC4	Significant financial assistance received from government	20%
5	EC5	range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation	30%
6	EC6	policy, practices and proportion of spending on locally based suppliers at significant locations of operation	30%
7	EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation	30%

8	EC8	development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in kind or pro bono engagement	40%
9	EC9	description of significant indirect economic impacts, including the extent of impacts	60%
10	EC10	understanding and describing significant indirect economic impacts, including the extent of impacts	0
11	EN1	Materials used by weight or volume	40%
12	EN2	Percentage of materials used that are recycled input materials	30%
13	EN3	direct energy consumption by primary energy source	40%
14	EN4	indirect energy consumption by primary source	40%
15	EN5	energy saved due to conservation and efficiency improvements	40%
16	EN6	initiatives to provide efficient or renewable energy based products and services and reductions in energy requirements as a result of these initiatives	40%
17	EN7	initiatives to reduce indirect energy consumption and reductions achieved	30%
18	EN8	total water withdrawal by source	70%
19	EN9	water sources significantly affected by withdrawal of water	40%
20	EN10	percentage and total water volume of water recycled and reused	50%
21	EN11	location and size of land owned, leased, managed in, or adjacent to, protected areas and area of high biodiversity value outside protected areas	10%
22	EN12	description of significant impacts of activities, products and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	10%
23	EN 13	habitats protected or restored	20%
24	EN14	strategies, current actions, and future plans for managing impacts on biodiversity	0
25	EN15	number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	50%
26	EN16	total direct and indirect greenhouse gas emissions by weight	50%
27	EN17	other relevant indirect greenhouse gas emissions by weight	50%
28	EN18	initiatives to reduce greenhouse gas emissions and reductions achieved	50%
29	EN 19	emissions of ozone-depleting substances by weight	50%
30	EN20	NOx, SOx, and other significant air emissions by type and weight	40%
31	EN21	Total water discharged by quality and destination	40%
32	EN22	total weight of waste by type and disposal method	50%
33	EN23	Total number and volume of significant spills	60%
34	EN24	weight of transported, imported, exported or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, VIII, and percentage of transported waste shipped internationally	50%
35	EN25	identity, size, protected status and biodiversity value of water bodies and related habitats significantly affected by the reporting organisation's discharges of water and runoff	40%
36	EN26	initiatives to mitigate environmental impacts of products and services and extent of impact mitigation	40%
37	EN27	percentage of products sold and their packaging materials that are reclaimed by category	70%
38	EN28	monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	40%
39	EN29	significant environmental impact of transporting products and other goods and materials used for the organisation's operations	50%
40	EN30	total environmental protection expenditures and investments by type	50%

41	EN 31	Total Environmental Protection Expenditures And Investments By Type	30%
42	EN 32	Percentage Of New Suppliers That Were Screened Using Environmental Criteria	40%
43	EN 33	Significant Actual And Potential Negative Environmental Impacts In The Supply Chain And Actions Taken	60%
44	EN 34	Number Of Grievances About Environmental Impacts Filed, Addressed And Resolved Through Formal Grievance Mechanisms	40%
45	LA1	total workforce by employment type, employment contract and region	40%
46	LA2	total number and rate of employee turnover by age group gender and region	30%
47	LA3	benefits provided to full time employees that are not provided to temporary or part time employees by major operations	30%
48	LA4	percentage of employees covered by collective bargaining agreements	40%
49	LA5	Minimum notice period regarding significant operational changes, including whether it is specified in collective agreements	40%
50	LA6	Percentage of total workforce represented in formal joint management worker health and safety committees that help monitor and advise on occupational health and safety programs	50%
51	LA7	Rates of injury, occupational diseases, lost days and absenteeism and number of work-related fatalities by region	30%
52	LA8	Education, training, counselling, prevention and risk-control programs in place to assist workforce members, their families or community members regarding serious diseases	30%
53	LA9	Health and safety topics covered in formal agreements with trade unions	50%
54	LA10	average hours of training per year per employee by employee category	70%
55	LA11	programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	40%
56	LA12	percentage of employees receiving regular performance and career development reviews	50%
57	LA13	composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership and other indicators of diversity	40%
58	LA14	ratio of basic salary of men to women by employee category	40%
59	LA 15	Significant Actual And Potential Negative Impacts For Labor Practices In The Supply Chain And Actions Taken	50%
60	LA 16	Number Of Grievances About Labor Practices Filed, Addressed And Resolved Through Formal Grievance Mechanisms	40%
61	SO1	nature, scope, effectiveness of any programs and practices that assess and manage the impact of operations on communities	40%
62	SO2	percentage and total number of business units analysed for risks related to corruption	40%
63	SO3	Percentage of employees trained in organization's anti-corruption policies and procedures	60%
64	SO4	Actions taken in response to incidents of corruption	50%
65	SO5	public policy positions and participation in public policy development and lobbying	40%
66	SO6	Total value of financial and in-kind contributions to political parties, politicians and related institutions by country	70%
67	SO7	Total number of legal actions for anti-competitive behaviour, anti-trust and monopoly practices and their outcomes	50%
68	SO8	monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	50%

69	SO9	Operations with significant potential or actual negative impacts on local communities.	50%
70	SO10	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities	40%
71	PR1	life cycle stages in which health and safety impacts of products and services are assessed for improvement and percentage of significant products and services categories subject to such procedures	70%
72	PR2	total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes	50%
73	PR3	type of product and service information required by procedures and percentage of significant products and services subject to such information requirements	50%
74	PR4	total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labelling, by type of outcomes	40%
75	PR5	practices related to customer satisfaction, including results of surveys measuring customer satisfaction	50%
76	PR6	programs for adherence to laws, standards and voluntary codes related to marketing communications, including advertising, promotion and sponsorship	40%
77	PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion and sponsorship by type of outcome	40%
78	PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	40%
79	PR9	monetary value of significant fines for non-compliance with laws and regulations concerning the provision and the use of products and services	40%
80	HR1	percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights clauses or that have undergone human rights screening	30%
81	HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken	40%
82	HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees that are trained	50%
83	HR4	total number of incidents of discrimination and actions taken	40%
84	HR5	operations/units identified in which the right to exercise freedom of association and collective bargaining may be at significant risk and actions taken to support these rights	40%
85	HR6	operations/units identified as having significant risk for incidents of child labour and measures taken to contribute to elimination of child labour	40%
86	HR7	measures to contribute to the elimination of forced or compulsory labour	20%
87	HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations	20%
88	HR9	total number of incidents of violations involving rights of indigenous people and actions taken	40%
89	HR10	Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments	50%
90	HR11	Number of grievances related to human rights filed, addressed and resolved through formal grievance mechanisms	30%

Source: the author, based on the empirical study

5. CONCLUSIONS

Drugs manufacturers are fragile from the point of view of sustainability and corporate social responsibility issues. In this regard, this sector of activity should invest more in research and development area, should take into account the expensive development of drugs, the environmental performance, such as reduction of greenhouse gases emission, biodiversity, waste, social performance, like training, employability, ethics and transparency in relationship with the patients, access to drugs, dialogue with interested parties, should also improve some practices (for example regarding the price of the drugs) and also the pharmacovigilance in order to reduce or eliminate the counterfeiting risks. It is not only the drug manufacturer responsible for the well-being of the people that take drugs, are also involved other actors on this market, such as the ones that prescribe, dispense and use the drugs.

From a corporate social responsibility point of view we can observe both short term benefits, such as improving the image of the company, the reputation, reducing the conflicts with different stakeholders, compliance with different regulations, developing new markets, but also benefits on long run, in terms of research and development actions and activities, prevent damages to public health.

The research can be a basis for further studies in this respect, to collect data through interviews or surveys within drugs manufacturers and potential shareholders or stakeholders, which can take into consideration other industry sectors, in order to be compared with, to show the similarities and the differences that appear.

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Entity Appraisal

PROFITABILITY AND WORKING CAPITAL MANAGEMENT OF CZECH SMEs: EMPIRICAL EVIDENCE IN THE PERIOD OF FINANCIAL CRISIS

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Abstract

In this study we attempt to measure the link between working capital management and profitability on a sample of Czech SMEs during the time of financial crisis. As the period of our measurement coincides with the worst financial crisis that affected developed economies at the beginning of the 21 century, we expect the profitability of Czech firms and corresponding variables of working capital management to be also affected. In this conjuncture we want to discover the role working capital management on microeconomic in-company level. Some negative relations and increased volatility of results can be expected during the crisis years, even when Czech companies were found to be profitable in general. The results of our analysis show that, the working capital management performs in the same manner as in “normal times”, which can be interpreted is a sign of long term stability of Czech economic environment. Nevertheless our results need to be verified and contrasted with subsequent (non- crisis) periods of data, which could be a topic for future research.

Key words: cash conversion cycle, financial crisis industrial structure, macroeconomic background, working capital management, Czech industry, SMEs

1. INTRODUCTION

This study explores the link between working capital management and profitability on a sample of Czech SMEs during the time of financial crisis. 2008–2012. Financial crisis had harmful effect on companies in general. It would be interesting to see whether and how did this event affect the features of short term financial management of companies. As the period of our measurement coincides with the worst financial crisis that affected developed economies at the beginning of the 21 century, we expect the profitability of Czech firms and corresponding variables of working capital management to be also affected. Macroeconomic conditions have worsened during the crisis and in this conjuncture we want to discover the role working capital management on microeconomic in-company level. Some negative relations and increased volatility of results can be expected during the crisis years, even when Czech companies were found to be profitable in general. The results of our analysis show that, the working capital management in selected companies performs in the same manner as in “normal times”, which can be interpreted is a sign of long term stability of Czech economic environment.

SMEs represent about 99 per cent of all the companies worldwide and provide job opportunities for an increasing number of persons in various sectors. In Europe they account for about two-thirds of total employment, ranging from 53 % in the United Kingdom to 86 % in Greece. SMEs represent a big category and cover enterprises with different ownership structures and varying numbers of employees and levels of economic activity.¹ SMEs contribute 57 % of value added in the EU. They frequently face capital constraint with regard to their funding, so it seems that the nature of business of most enterprises would be rather short term oriented. This may be one

¹ http://ec.europa.eu/eurostat/statistics-explained/index.php/Statistics_on_small_and_medium-sized_enterprises#cite_ref-1

of the reasons for the special role of working capital management in these companies. SMEs are also frequently the basis of innovation and creation of new job opportunities. Even though the SMEs are a very important part of the economy, they frequently face financial and operational problems. Most small and medium sized enterprises are independent and do not belong to an enterprise groupings. Industrial groupings or industrial clusters are most common in manufacturing and to a lesser degree in knowledge-intensive business services even though economic clusters and innovation induced by big enterprises create new opportunities due to very frequent outsourcing and spinoffs. In Czech Republic many SMEs were created in 1990s after so called Velvet Revolution bringing the change of ownership which did not bring only prosperity. This could be seen especially after economic crisis, as small firms became more vulnerable without any support of state.

Table 1. Classification of companies in line with ES 70/2001

Category	Maximum annual turnover in mil. €	Maximum balance size in mil. €	Number of employees (full-time equivalent)
Microenterprise	0–2	0–2	0–10
Small enterprise	2–10	2–10	10–50
Medium sized enterprise	10–50	10–43	50–250

Source: Committee regulation ES n.70/2001

Trade integration, globalisation and industry consolidation have the potential to make large enterprises ever larger and thus more important in explaining business cycles and economic developments. SMEs are frequently the most affected segment of economy SMEs are pro-cyclical in general, due to low capitalization and low potential for business expansion. The Czech Republic was also influenced by financial crisis, which allows them more flexibility as the same time (Koráb, & Pomenková, 2014).

Nevertheless we want to see how this segment of Czech SMEs did perform. Czech Republic is the traditional industrial country where over 70 percent of GDP is constituted by industrial production and GDP is pulled by country export of industrial production. Special position of SMEs of our production is economic whether the stability of estimated indicators was the same or diminished especially by ongoing slowdown.

Working capital management is important in period of crisis because it deals with short term financial management – management of short term funds and as such it has an impact on liquidity of companies. After performing the analysis of the working capital management on 1940 representative Czech SMEs, we have found out that the companies perform in the same manner as in “normal times” with regard of working capital management, which can be interpreted is a sign of long term stability of Czech economic environment and also as a sign of internationalization of many Czech businesses.

This paper is structured as follows part one is the introduction, the following part provides summary of previous literature, part three describes the macroeconomic background of Czech Republic together with industrial structure of Czech economy. The fourth part introduces data and methodology. Part five is our analysis and part six concludes.

2. PREVIOUS LITERATURE

As to previous studies from recent years Michalski (2008) uses the Czech sample with the premise that the basic financial purpose of an enterprise is maximization of its value. Trade credit management should also contribute to the realization of this fundamental aim. There are many of the current asset management models in the financial management literature and majority of them assume that book profit maximization as the basic financial purpose. Michalski (2008) asserts

a method to determine the level of accounts receivable in a firm by using the portfolio management theory. An increase in the level of accounts receivables in a firm increases both networking capital and the costs of holding and managing accounts receivables. Both of these decrease the value of the firm, but a liberal policy in accounts receivable coupled with the portfolio management approach could increase the value. Efforts to assign ways to manage these risks were also undertaken; among them, a special attention was paid to adapting the assumptions from the portfolio theory determining the potential effect on the firm value.

Gill, Biger and Mathur (2010) explore the relationship between working capital management and profitability on a sample of 88 American firms listed on New York Stock Exchange for a period of 3 years from 2005 to 2007. The authors found statistically significant relationship between the cash conversion cycle and profitability, measured through gross operating profit. It follows that managers can create profits for their companies by handling correctly the cash conversion cycle and by keeping accounts receivables at an optimal level. This implies that managers can create value for their shareholders by reducing the number of days for accounts receivables. In addition, the negative relationship between accounts receivables and firm's profitability suggest that less profitable firms will pursue a decrease of their accounts receivables in an attempt to reduce their cash gap in the cash conversion cycle. On the basis of findings of this paper the authors conclude that profitability can be enhanced if firms manage their working capital in a more efficient way.

Mathuva (2010) investigated the influence of working capital management components on corporate profitability. The data collected from Nairobi Stock Exchange (NSE) for the period 1993 to 2008 and 30 firms is used which are listed in NSE. The author used both the pooled OLS and the fixed effects regression models. The key findings from the study were, that there exists a highly significant negative relationship between the time it takes for firms to collect cash from their customers (accounts collection period) and profitability. This implies that more profitable firms take the shortest time to collect cash from their customers; furthermore there exists a highly significant positive relationship between the period taken to convert inventories into sales (the inventory conversion period) and profitability. It is concluded that in the production process and loss of business due to scarcity of products, the firms which keep sufficiently high inventory levels reduce costs of possible interruptions. This reduces the firm supply costs and protects them against price fluctuations. Furthermore there exists a highly significant positive relationship between the time it takes the firm to pay its creditors (average payment period) and profitability. Therefore it means that the longer a firm takes to pay its creditors, the more profitable it is.

Bieniasz and Gołaś (2011) explored the influence of working capital management on profitability of the food industry enterprises. The authors use selected Eurozone countries and Poland. The research data collected from Polish Central Statistical Office's unpublished data. The data consist of trade structure and dimension of food industry enterprises in Poland and comparatively, in respect of the food sector in selected Eurozone countries. The working capital management efficiency was assessed by means of the inventory, accounts receivables, current liabilities turnover cycles, cash conversion cycle, and in respect of the obtained rates of return from non-financial assets. The research results show that relatively higher rates of profitability were found in the food industry sectors with the shortest working capital cycles. Authors use a regression analysis and find that positive influence of working capital cycles has a negative effect on the profitability.

Ugurlu, Jindrichovska and Kubickova (2014) explored the relation of profitability and management of short term assets and funds on a sample of Czech companies. The authors confirmed that managers can create profits for their companies by handling correctly the cash conversion cycle and keeping each different component to an optimum level.

Korab and Pomenkova (2014) investigate whether small and medium-sized enterprises in Visegrad countries experienced decline of access to external financing during the financial crisis. The authors find that economic recession was the driving factor of financial constraints in Slovakia and the Czech Republic. However there is no sizeable difference in access to credit of SMEs in Hungary and Poland before and during the crisis. In Slovakia and the Czech Republic our results

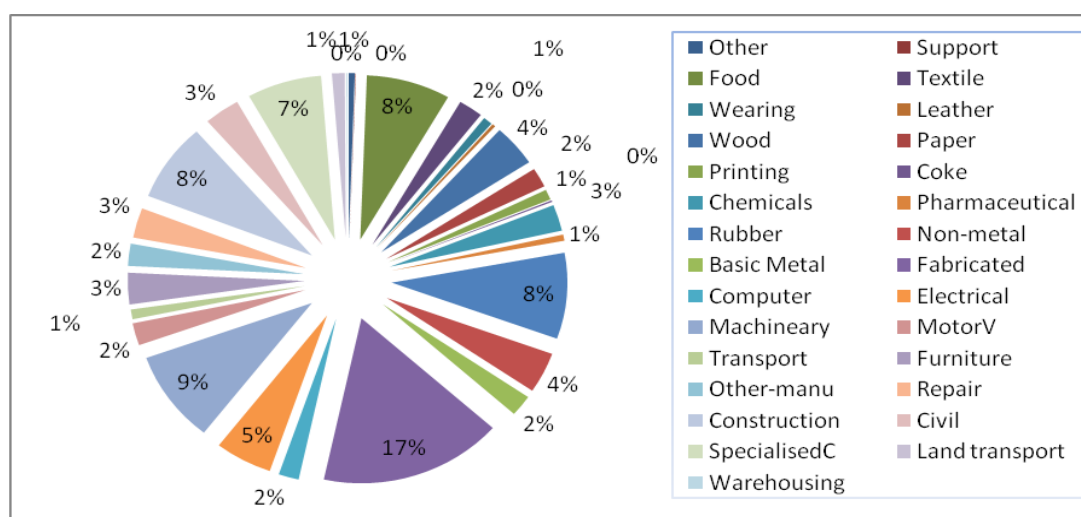
suggest that firms were more constrained during the crisis and their financing constraints did not largely improve after the end of financial crisis.

3. MACROECONOMIC BACKGROUND

Czech Republic is the traditional European industrial country where over 70 percent of GDP is constituted by industrial production and GDP is pulled by country export of industrial production. Special position of SMEs of our production is economic whether the stability of estimated indicators was the same or diminished especially by ongoing slowdown.

Most important and dominant industries of Czech economy are machinery and transportation. Industrial structure of our sample mirrors the structure of Czech. In general we can observe the strong dominance of manufacturing sector, which is also dominant in country export therefore our sample reflects the industry distribution dominated by machinery and transport and wholesale industries.

Figure 1. Industrial Structure of Czech Companies used in this Research



Source: own research

Table 2. Abbreviation of Industries

Number	Industry	Abbreviation
1	Other mining and quarrying	Other
2	Support activities for petroleum and natural gas extraction	Support
3	Food and beverages	Food
4	Manufacture of textiles	Textile
5	Manufacture of wearing apparel	Wearing
6	Manufacture of leather and related products	Leather
7	Manufacture of wood and of products of wood	Wood
8	Manufacture of paper and paper products	Paper
9	Printing and reproduction of recorded media	Printing
10	Manufacture of coke and refined petroleum products	Coke
11	Manufacture of chemicals and chemical products	Chemicals
12	Manufacture of basic pharmaceutical products and pharmaceutical preparations	Pharmaceutical
13	Manufacture of rubber and plastic products	Rubber
14	Manufacture of other non-metallic mineral products	Non-metal

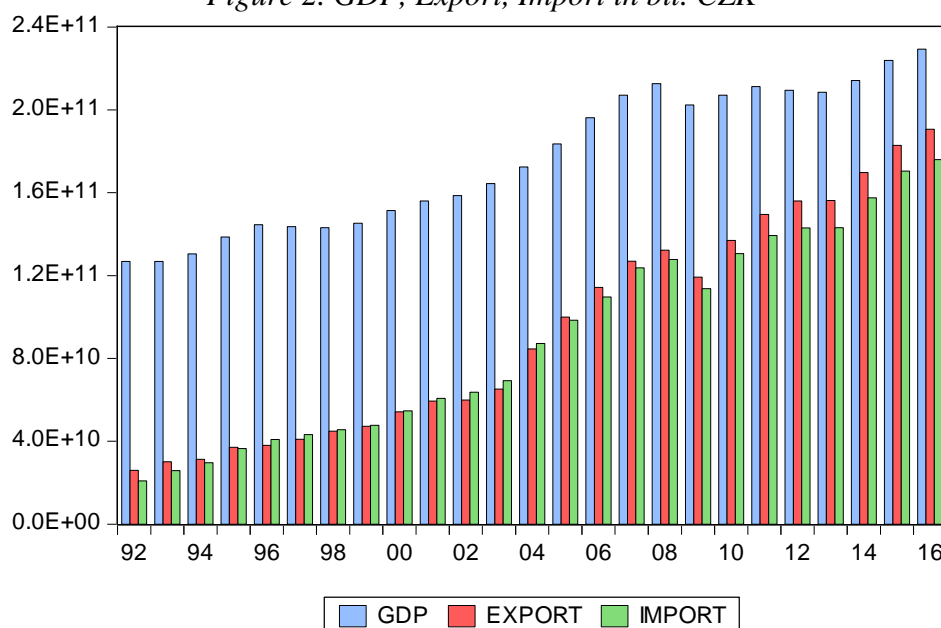
15	Manufacture of basic metals	Basic Metal
16	Manufacture of fabricated metal products, except machinery and equipment	Fabricated
17	Manufacture of computer, electronic and optical products	Computer
18	Manufacture of electrical equipment	Electrical
19	Manufacture of machinery and equipment n.e.c	Machineary
20	Manufacture of motor vehicles, trailers and semi-trailers	MotorV
21	Manufacture of other transport equipment	Transport
22	Manufacture of furniture	Furniture
23	Other manufacturing	Other-manu
24	Repair and installation of machinery and equipment	Repair
25	Construction of buildings	Construction
26	Civil engineering	Civil
27	Specialised construction activities	SpecialisedC
28	Land transport and transport via pipelines	Land transport
29	Warehousing and support activities for transportation	Warehousing

Source: own research

As to the macroeconomic indicators, the Czech Republic is open export oriented economy. The balance of payments has been positive during recent decades, which underscores the production trend of an industrial country with a long tradition of industrial production. The economy returned to full growth after the financial crisis of 2008/9 in 2014, after it overcame a repeated moderate slowdown in 2011, caused by some internal administrative hiccups (Spěváček and Vintrová, 2010, Spěváček 2013, Makovsky, 2011).

Czech international trade is diversified, but the main export sectors remain machinery and transportation industries. The Ministry of trade and industry strives to increase the volume of trade and increase its diversity by removing barriers to trade, simplification of access to information and government missions. As a result, the Czech export totals have been growing in recent years, especially after the crisis that culminated in 2009, which was caused mainly by the unfavourable global situation. The full growth returned in 2014. Since 2013 the Czech industrial sector is growing even though in recent years the big international companies are bringing in their technologies and organizational style (Rusnok, 2017).

Figure 2. GDP, Export, Import in bil. CZK



Source: World Development Indicators (WDI), The World Bank

4. DATA AND METHODOLOGY

4.1 Working Capital Management and Profitability

Working capital management influences profitability of enterprise. It deals with questions about short term sources and use of funding e.g. Brealey et al. (2012); Hillier et al. (2013); or Ehrhardt and Brigham (2016). As we can see in many financial textbooks and practical booklets the term working capital refers to a firm's short-term assets. These include inventory and receivables and its short-term liabilities – such as money owed to suppliers. Managing the firm's working capital is a day-to-day activity that ensures the firm has sufficient resources to continue its operations and avoid costly interruptions. Working capital management involves a number of activities related to the firm's receipt and disbursement of cash.

Accounts payable is a spontaneous source of funding which grows as the company increases its sales. Sometimes these funds are overused by dominant companies in the sector (typically in wholesale trading, or machinery) who actually save on their cost of funding by using short term funds provided by their suppliers - simply extending their payables.

Short term assets are negatively influencing profitability of companies – because the company in question has to fund the asset. Therefore some questions about working capital that must be posed, like: (1) How much cash and inventory should we keep on hand? (2) Should the company sell on credit to their customers, (3) How should the company obtain any needed short-term financing to maintain the operation? These questions concern the short term assets and liabilities – components parts of short term capital – working capital.

4.2 Analysis

Profitability is negatively influenced by size of short term assets (positive or increasing working capital) and corresponding length of cash conversion cycle.

This study was prepared with use of yearly data using the period 2008–2012. As the variable sales growth is used to approximate for impact of sales dynamic we effectively measure the variables in the period 2009–2012. The data was collected from 1940 Czech small and medium sized companies in sectors see chart 2. The data was provided by company BISNODE, which is administering database, specializing in investigation of receivables collection.

The used dependent variable measuring profitability is the return on assets (ROA). Some of the latest papers about working capital management are Teruel and Solano (2007), Ugurlu et al (2014), Mai and Gama (2015), Altaf and Shah (2017). Majority of these papers use ROA as a dependent variable in addition to this Mai and Gama (2015) uses Tobin's Q. However they used different independent variables. If we aggregate independent variables of these papers are number of days accounts receivable, inventory, number of days accounts payable, cash conversion cycle, firm size, sales growth, leverage (DEBT) as the ratio of debt to total liabilities, annual GDP growth, current assets ratio and current liabilities ratio, firm age, inventory conversion period, cash conversion squared, current ratio, asset tangibility.

The independent variables used in this paper are AGE, AR, CCC, DEBT, INV, SGR and SIZE. The acronym, definition and calculation of the independent variables are shown in Table 3.

Table 3. Independent Variables

Acronym	Definition	Calculation
AGE	Firm Age	-
AR	Accounts Receivable	$\frac{\text{Accounts receivable}}{\text{Sales}} \times 365$
CCC	Cash Conversion Cycle	Days Receivable + Days in Inventory - Days Payable
DEBT	Debt	Days in Payables = Payables/sales*365
INV	Inventory	$\frac{\text{Inventories}}{\text{Purchases}} \times 365$
SGR	Sales Growth	$\frac{\text{Sales}_t - \text{Sales}_{t-1}}{\text{Sales}_{t-1}}$
SIZE	Size Of The Firm	Logarithm of assets

Figure 3. Graphs of Data Series

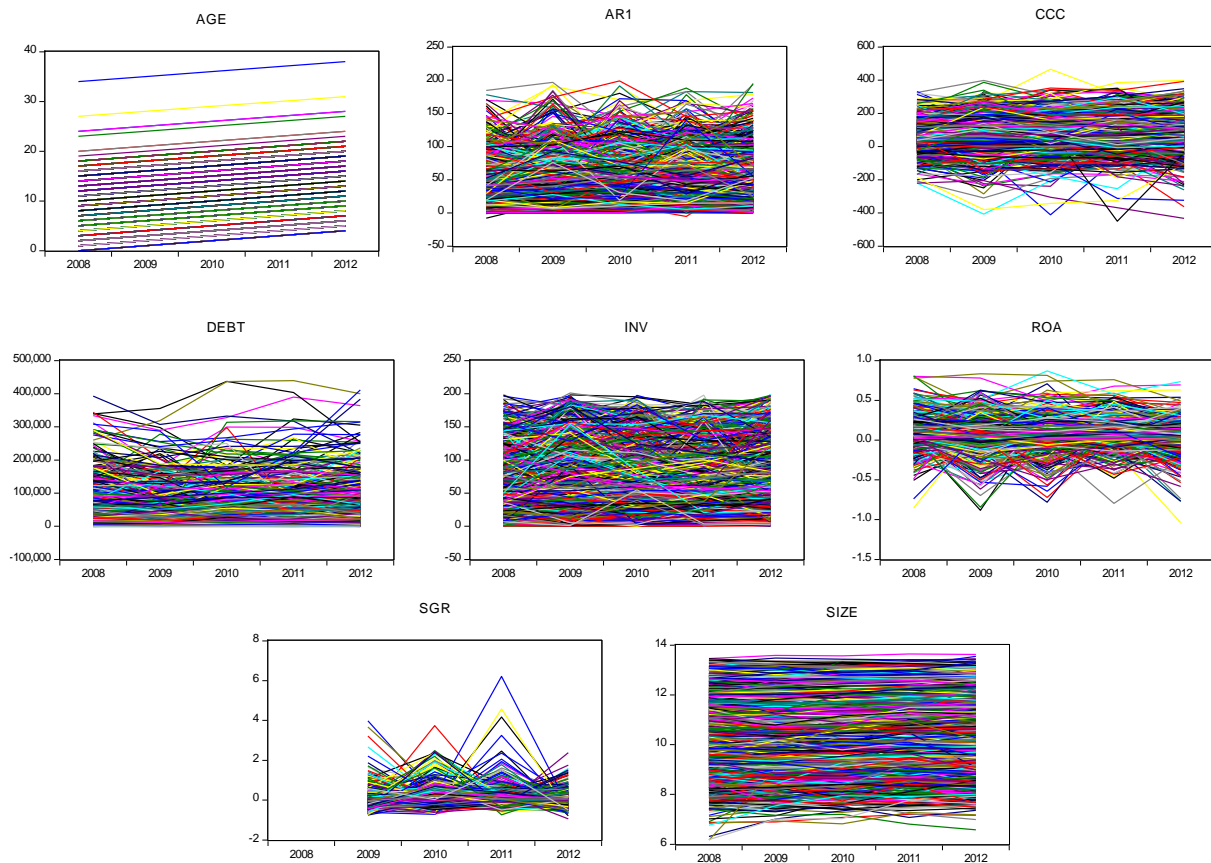


Figure 3 shows time trend patterns, indicating potential long-run relations between variables. The graphs of the series show the general pattern of the series and it is useful to see range of the series and outliers. Nevertheless it is better to investigate descriptive statistics to have preliminary information.

Table 4. Descriptive Statistics of the Series

	AGE	AR	CCC	DEBT	INV	ROA	SGR	SIZE
Mean	13.8601	51.57910	81.9118	31277.36	65.5984	0.0632	0.0298	10.6621
Median	15.0000	47.39387	79.3768	14077.50	57.3584	0.0498	0.0014	10.7774
Maximum	38.0000	198.9722	465.4293	439281.0	201.0475	0.8688	6.2161	13.6390
Minimum	1.0000	-5.246055	-449.6726	-2112.000	0.0000	-1.0371	-0.9441	6.5778
Std. Dev.	4.9797	30.67438	79.9064	44313.40	42.6721	0.1266	0.3358	1.3230
Observations	7896	7896	7896	7896	7896	7896	7896	7896

Table 4 presents a summary descriptive statistics of the variables used in the analysis. The mean value of AGE is 13.86, AR is 51.57, CCC is 81.91, DEBT is 31277 and INV 65,60. Further, the mean sales growth of the firms is 0,003 and the mean size is around 10.66. Furthermore, maximum of time since the company was incorporated is 38 years in the sample. According to standard deviation of the variables it is concluded that DEBT variable is very volatile in comparison with its mean value.

Table 5 reports the results of correlation coefficients for all variables. It is expected to have significant and high correlation between dependent variable and independent variables and low correlation coefficient between independent variables or no significant correlation between them.

Table 5. Correlation Matrix

	AGE	AR	CCC	DEBT	INV	ROA	SGR	SIZE
AGE	1							

AR	0.0065	1						
	0.5745	-----						
	0.5656	-----						
CCC	0.0917	0.5421	1					
	8.1904	57.324	-----					
	0.0000	0.0000	-----					
DEBT	0.0474	0.1549	-0.1531	1				
	4.2226	13.934	-13.763	-----				
	0.0000	0.0000	0.0000	-----				
INV	0.0843	0.0087	0.3916	0.0814	1			
	7.5221	0.7780	37.816	7.2551	-----			
	0.0000	0.4366	0.0000	0.0000	-----			
ROA	-0.0893	-0.0698	0.1396	-0.0587	-0.0572	1		
	-7.9655	-6.2190	12.531	-5.2265	-5.0879	-----		
	0.0000	0.0000	0.0000	0.0000	0.0000	-----		
SGR	-0.0584	-0.0303	-0.0368	0.0910	-0.0877	0.2728	1	
	-5.2005	-2.6999	-3.2796	8.1233	-7.8264	25.202	-----	
	0.0000	0.0069	0.0010	0.0000	0.0000	0.0000	-----	
SIZE	0.1970	0.1479	0.1331	0.6595	0.1744	0.0549	0.0522	1
	17.855	13.2898	11.937	77.9519	15.742	4.8927	4.6452	-----
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-----

It can be seen from the table all the independent variables are statistically significantly correlated with the dependent variable ROA in 1% significance level. AGE, AR, DEBT and INV have a negative correlation, CCC has the positive correlation between ROA. Except for correlation of CCC, the correlations between dependent and independent variables are very low. If the correlations between independent variables take in consideration majority of the dependent variables has a significant relationship but has a very low correlation coefficient. Only correlation between AGE and AR and correlation between INV and AR are not statistically significant.

4.3 The Model

The papers mentioned above from the previous literature we estimate these three regression model.

$$ROA_{it} = \beta_0 + \beta_1 AR_{it} + \beta_2 AGE_{it} + \beta_3 DEBT_{it} + \beta_4 SGR_{it} + \beta_5 SIZE_{it} + \varepsilon_{it} \quad (1)$$

$$ROA_{it} = \delta_0 + \delta_1 CCC_{it} + \delta_2 AGE_{it} + \delta_3 DEBT_{it} + \delta_4 SGR_{it} + \delta_5 SIZE_{it} + \omega_{it} \quad (2)$$

$$ROA_{it} = \alpha_0 + \alpha_1 INV_{it} + \alpha_2 AGE_{it} + \alpha_3 DEBT_{it} + \alpha_4 SGR_{it} + \alpha_5 SIZE_{it} + \eta_{it} \quad (3)$$

where: i subscript shows firm, and t subscript shows time and ε_{it} , ω_{it} , η_{it} are the error terms.

At first, we estimate these equations using random effect model and fixed effect model. To decide to use FEM or REM the Hausman (1978) test is used. If the null hypothesis is rejected, the effects are considered to be fixed.

Table 6 shows Hausman test results between FEM and REM models and the results show that the FEM model is relevant. Breusch – Pagan Lagrange Multiplier (LM) (1980), Pesaran Cross Sectional Dependence (CD) (2004), Pesaran Scaled LM (2004) and Baltagi, Feng and Kao Bias Corrected Scaled LM (2012) are cross sectional dependence tests. Although the tests are particularly applicable in different contexts according to a number of individuals or time (Raihanet al. 2017) we used all of them and get same results. In the three model estimated using FEM have a cross sectional dependence.

Table 6. Model Testing Statistics

	Model 1	Model 2	Model 3
Hausman	97.998241***	88.177896***	97.477433***
Breusch-Pagan LM	2717919***.	2739224***.	2718144. ***
Pesaran scaled LM	390.4578***	401.2531***	390.5718***
Bias-corrected scaled LM	34.05389***	72.25305***	61.57176***
Pesaran CD	2717919. ***	28.40911***	25.22736***

The null hypothesis of cross sectional dependence tests is rejected for all three test then we estimate Cross-section SUR(PCSE) (Seemingly unrelated regression, panel corrected standard errors) standard errors model with no weights to correct cross section heteroskedasticity and correlated period effect. Psillakiand and Daskalakis (2009) use period SUR – pooled EGLS model and state that this method corrects arbitrary period serial correlation and period heteroscedasticity between the residuals for a given cross-section.

5. RESULTS

Table 7 shows PCSE model results. Model 1, Model 2 and Model 3 indicate that the model equations are used from equations (1), (2) and (3) respectively. All the coefficients of the independent variables are statistically significant in 1% level significance.

Table 7. Estimation Results

Dependent variable: ROA			
Method: Panel Least squares Cross-section SUR (PCSE) standard errors & covariance (d.f. corrected)			
Variable	Model 1	Model 2	Model 3
	Coefficient	Coefficient	Coefficient
AR	-0.000248***	-	-
CCC	-	0.000133***	-
INV	-	-	-0.000189***
AGE	-0.002992***	-0.005989***	-0.002879***
DEBT	-6.42x10 ⁻⁷ ***	-7.78 x10 ⁻⁷ ***	-6.60 x10 ⁻⁷ ***
SGR	0.096376***	0.090649***	0.094944***
SIZE	0.023191***	0.073568***	0.023660***
C	-0.112602***	-0.627408***	-0.118960***
Weighted Statistic			
R squared	0.116897	0.600647	
F stat	208.8805****	4.499227***	

Notes: *** indicate significance at the 1% level for the coefficients and rejection of null hypothesis for the test statistics.

AR, INV, AGE, and DEBT have a negative coefficient, implying that ROA decreases with increases of these variables. Mainly results are in line with expectation apart from age as we would expect that the profitability increases with the age of company.

Besides them, CCC, SGR, and SIZE have a positive coefficient, implying that ROA increases with increases of these variables. Altaf and Shah (2017) stated that studies about the CCC are divided into two competing camps. One camp asserts that shorter CCC may improve firm performance and the other camp asserts that working capital may also have a negative impact on firm profitability. Altaf and Shah found that positive CCC coefficient where the dependent variable of the model is ROA for Indian firms, parallel to our finding. However, Pais and Gama (2015) finds negative coefficient for CCC, in addition, this paper use AR and INV variables and find negative and significant coefficient for this variables.

While the coefficient of CCC in Pais and Gama's paper has the contradiction between our papers the other two coefficients are consistent with our results. Teruel and Solano (2007) find all these three coefficients are negative. Furthermore the directions of all the coefficients are similar with Ugurlu et al. (2014).

6. CONCLUSION AND IMPLICATIONS:

Overall the results obtained are affected by ongoing financial crisis, which mitigated the effect and probably caused that the size of coefficient is rather small or even negative. In general, financial crisis contributed to greater volatility of studied data and obtained results. It is interesting to observe that increases with cash conversion cycle and is negatively related with accounts receivable and inventories. Profitability (ROA) is positively related to sales growth, CCC and size of companies. We find the same features in the Czech Republic as in non-crisis times. In general the relation between profitability and working capital management is as expected but the results are more volatile.

Our study is basically in line with the previous literature. For future research we would like to extend the sample and compare the results obtained for subsequent period to find whether the results are more stable. It would be also interesting to perform the analysis for specific industries to observe the specific trends and differences.

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USING EBITDA MULTIPLIER FOR VALUATION OF COMPANIES

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Abstract

This paper focuses on an issue of corporate valuation. There are several approaches used for the valuation of companies. The methods can be based on owned property, future incomes and cash flows or market values followed by intercompany comparison. This paper will deal with the market values presented by multipliers (multiples). The approach of multipliers is especially presented by the ratio Value/EBITDA and therefore this most used and discussed multiplier is used for further analysis. First general advantages and disadvantages will be introduced. The time stability of the multiplier and differences among markets will be analysed. This paper uses publicly available data published by Damodaran and the own verification is processed on selected industry branches. Tools of descriptive statistics are used for this research. As a conclusion, this paper shows possible threats of using EBITDA multiplier. The values of the multiplier heavily depend on the time and specific market location.

Keywords: chemistry and food processing industry, EBITDA, emerging markets, enterprise multipliers, valuation of companies

1. INTRODUCTION

EBITDA is an acronym which presents one kind of corporate earnings. This indicator has already existed since the 1960s (Greenberg, 1998) but it became famous in the 1980s (Greenberg, 2000). The main reason was the market development when EBITDA was used as a valuation technique for highly leveraged buyouts. MacDonald (2003) argues that EBITDA has stayed an obsession among Wall Street analysts and corporate managers. It is surprising that there is no regulation how to recognize or calculate EBITDA. Engle (2010) mentions neither the Securities and Exchange Commission nor the Public Company Accounting Oversight Board regulate that in USA. We can find worldwide some customs how to calculate EBITDA. The customs are based on the acronym itself. EBITDA is an abbreviation representing earnings before interest, taxes, depreciation, and amortization. Mostly used technique is to start from net income (EAT – earnings after taxes) and add items as interest, taxes, depreciation and amortization. Brealey, Myers and Allen (2012) present not only the bottom up but also the top to bottom approach. It is possible to calculate EBITDA as a difference between sales and operating costs which do not contain depreciation and amortization. A gained result is heavily dependent on accounting principles and therefore Engle (2010) warns that there is a huge space for a manipulation. However, even the computation itself does not have to provide the same result. Running a business is a complex task nowadays. It has a consequence that also accounting items consists of many kinds of transactions. There can be different opinions how to work in this case with reserves creating, other financial costs than only interest etc. Other obstacles are differences among national and international accounting standards. The comparison between Czech accounting standards and international accounting standards is provided for example by Strouhal (2009).

This paper focuses on the corporate valuation derivation from the EBITDA multiplier. The introduction has already provided several discussion remarks about this kind of profit. The next chapter called Literature review will provide a detailed description. It will consist of current use of

EBITDA, of its advantages followed by disadvantages and valuation procedure based on EBITDA. The third chapter discussed data and methods used for own research which is included in chapter number 4. The main aim of the paper is to focus on the credibility of the corporate value based on the EBITDA multiplier. This approach uses average values of multipliers computed for different industry branches. It means that the approach reflects industry specifics because it is known that the multiplier itself is heavily influenced by an industry to whose valuated enterprises belong. There can be also other threats of this multiplier that not only the precise industry selection. It seems that the multiplier could be influenced by the specific market location (in geographic and developed sense) and shocks influencing the economy. These factors (shocks) are usually not permanent and therefore the multiplier is also influenced by the time. Descriptive statistical methods will be used for an analysis of these suggested differences. The results will be summarized in discussion which will show also some limitations. The aim of this paper is to show limitations of EBITDA multiplier which seem important at emerging markets.

2. LITERATURE REVIEW

EBITDA belongs to very famous financial indicators which are used by external analysts, corporate managers or investors how it is referred by Engle (2010), MacDonald (2003) or Greenberg (2000). EBITDA can be used for comparison of profitability between businesses and industry branches because it eliminates effects of financing and some accounting decisions (Engle, 2010). According to Cormier, Demaria and Magnan (2017) EBITDA has the force to reduce the information asymmetry between managers and investors, the value relevance and the prediction ability of earnings. Frezatti and Aguiar (2007) formulate that EBITDA is the indicator derived from the Income Statement which links effective financial performance with operating cash flows. Assaf Neto (2009) goes further and postulates that EBITDA is similar to operating cash flows before income taxes. Business is nowadays very complex task and therefore the results of the Income Statement do not have to fully correspond with cash flows. EBITDA just have its limitations which should be respected by the users. Stumpp (2000) summarizes disadvantages of EBITDA into 10 points which she calls ten critical failings of EBITDA. They are postulated as following:

- 1) EBITDA ignores changes in working capital and overstates cash flow in periods of working capital growth.
- 2) EBITDA can be a misleading measure of liquidity.
- 3) EBITDA does not consider the amount of required reinvestment – especially for companies with short lived assets.
- 4) EBITDA says nothing about quality of earnings.
- 5) EBITDA is an inadequate standalone measure for comparing acquisition multiples.
- 6) EBITDA ignores distinctions in the quality of cash flow resulting from differing accounting policies – NOT all revenues are cash.
- 7) EBITDA is not a common denominator for cross-border accounting conventions.
- 8) EBITDA offers limited protection when used in indenture covenants.
- 9) EBITDA can drift from the realm of reality.
- 10) EBITDA is not well suited for the analysis of many industries because it ignores their unique attributes.

There can be a huge difference between EBITDA and cash flows. MacDonald (2003) illustrates that as if both capital expenditures and repayment of principal can be postponed and there is no need of working capital expansion then EBITDA can be turned to owners. The derivation of EBITDA from the Income Statement leads also to the conclusion that EBITDA helps mask accounting frauds (MacDonald, 2003). Greenberg (1998) mentions that EBITDA can be used as the valuation method in cable or media industries which belong to capital intensive industries. However, Lonergan and Chu (2016) open a discussion that there are problems with using EBITDA-based valuation in capital

intensive industries. It depends on the investment cycle which should be extremely long without a need of incremental reinvestments. MacDonald (2003) even talks about dozens of years in this case.

The current use of EBITDA can be summarized according to Aeternus as following:

- 1) Using EBITDA in pricing mechanism.
- 2) Expressing a financing opportunity as the EBITDA multiple which can be gained from a creditor.
- 3) For the company valuation.
- 4) To compare the result of valuation using a DCF model.

It can be added to pricing mechanism Cormier, Demaria and Magnan (2017) confirm that EBITDA reporting enhances the positive relationship between earnings and stock pricing as well as future cash flows. The company valuation should be seen in a broader perspective because there are also other factors than only EBITDA. Engle (2010) says that investors must consider a wide range of factors as the market growth, competition, quality of the management and key employees. Still EBITDA valuation approach remains very popular. There can be detected several reasons for this state of the world.

Experts in valuation can use several approaches to come to the value of a company. The choice of the method depends on the user and the purpose of the valuation. The basic approaches are presented by property approach, income approach and market approach (Pratt and Niculita, 2000). It is also possible to work with their combination known as the multiple approach because none valuation method fits for every company. Market approaches have a high popularity due to their use of market data and their simplicity. The simplicity can be illustrated by the example of comparison with the income method using discounted cash flow (DCF). It measures the present value of future benefits brought by the ownership of the valuated company and its assets. The basic idea is clear but in practice there come issues as future cash flows computation accompanied often by option models and discount rates computation. EBITDA brings stability and understanding among analysts, investors etc. in this complicated process (Aeternus and Maverick, 2015). EBITDA multiplier approach belongs to the market valuation methods. These approaches are based on the principle of comparability (Kelly, 2009). It is necessary to choose comparable companies with similar characteristics as industry, size, kind of ownership or product and also operating in the same territory. The publicly available data about stock prices or disclosed sale prices create fundamental metrics used in the valuation process. A connection between market data and enterprise data could be presented by net profit (P/E ratio), EBIT (Value/EBIT), EBITDA (Value/EBITDA) etc. The knowledge of EBITDA multiplier x or others enables everyone to calculate the value of a company within 10 seconds. This quickness establishes the popularity of this indicator (Engle, 2010, Aeternus or Kelly, 2009). The main reason why EBITDA and not other metric is based on the EBITDA comparability which is not influenced by taxation, financing (level of debts and interests) and depreciation and amortization (company age and property value).

It remains to answer how to get a multiplier value. MacDonald (2003) and Damodaran (2017) recommend to compute the enterprise market value as a sum of market value of equity plus value of debt. The value of equity is equal to stock price multiplied by the number of enterprise shares. The value of debt is adjusted by cash which is extracted. Afterwards, this estimated enterprise market value is divided by the chosen metric which is EBITDA in our case. By the dividing the multiplier is gained. This process can be repeated for several comparable companies and the final multiplier could be the average of the individual multipliers. There is no obstacle anymore to get a value of a company. The company's EBITDA is multiplied by the multiplier value which has been computed in the previous step.

This approach has several critical steps which should be mentioned. First, it is the comparability of the chosen companies with whose data the multiplier is computed. Second, it is an issue of the market value of equity gained as market capitalization. Market capitalization can be hardly the net enterprise value which can be reached at the market. Bester, Hamman, Brummer, et al. (2008) even discussed how many enterprise shares should be used for the market capitalization calculation. Last but not least there remain the failings of EBITDA which have been already discussed.

3. USED DATA, METHODS AND RESEARCH IDEAS

This chapter is dedicated to the introduction of used data and methods which will be applied in the following chapter containing own research results confirming EBITDA difficulties in the enterprise valuation. Many failing of EBITDA or market valuation methods have been already discussed. This paper tries to add other insights of the using EBITDA multiplier based on the real data. The research is based on an idea that the values of the multiplier heavily depend on the time and territory. Another time moment or specific market location can influence significantly results.

This paper uses publicly available data published by Damodaran (2017). Professor Damodaran makes many indicators available on his internet site annually. For our purposes it will be used only the values of the EBITDA multiplier. The exact value of the multiplier remains a little bit secret because the precise way of computation is not mentioned. The multiplier is computed how it is shown in the literature review part. The computation is displayed by equation 1.

$$\frac{\text{Enterprise Value}}{\text{EBITDA}} = \frac{(\text{Market Value of Equity} + \text{Value of Debt} - \text{Cash})}{\text{EBITDA}} \quad (1)$$

Still it is missing a part how to create one final multiplier from individual multipliers computed for every single company respecting the equation 1. This computation is not specified by Damodaran. However, the Damodaran's data are frequently used in education process, by practitioners as well as by experts in the valuation. As a consequence, our purpose is not to verify the Damodaran's data. It should be emphasized that the enterprise values are only an estimation based on the market capitalization + value of debt which is decreased by enterprise cash. In other words, the enterprise values are not real amount of money for which the companies would be sold.

The research is based on the data covering the time period 2012–2016. It means that there are 5 separated annual time moments for which the value of the multiplier is computed. The basic comparability is provided by the choice of the industry to which the companies belong which should have similar characteristics. There are two forces counting counter each other. First, it is to respect the specific of the industry and therefore it would be an incentive to narrow the industry as much as possible. Contrary, the number of the enterprises used for the multiplier computation should be significant and therefore it is impossible to narrow the industry branch too much. The selected industry branches for our research have some common characteristics based on the kind of production. This kind of production is connected with chemical processes. The selected industry branches are chemical in different modifications basic, diversified and specialty, petroleum producing, pharma and drugs which can be divided in biotechnology and pharmaceutical drugs and rubber accompanied by tires. It stands a little bit aside food processing industry but also this branch could be connected with others or it is an example of non-cyclical branch producing mostly necessary products. The Damodaran division is not stable over the time. It is a reason why the pharma and drugs have been divided since 2015 into two categories called Drugs (Biotechnology) and Drugs (Pharmaceutical). Some industries (as petroleum producing and rubber accompanied by tires) do not have available data in all analysed years. The comparison of the multiplier value published and computed in the different time moments should prove or disprove if there are significant differences according to the time moment used for the computation.

These multipliers can be also published for different territories and therefore we will process data focused on USA, Europe and emerging markets. This territorial comparison should prove or disprove if there are significant differences among different markets. It is often discussed which market should be used for the comparison in the case of the Czech Republic. These opinions are mostly not published but it is possible to hear arguments that the best data are American because the market is the most liquid. On the other hand, the Czech Republic is situated in Europe and therefore it would be logical to use the European data. However, the European data are computed on the basis of Western Europe companies. The Czech Republic economy belongs to the developed economies. The Czech Republic had the different economic and political development before the 1990s and therefore

its economy is called transition or nowadays posttransition. The most incorrect decision would be to place the Czech Republic in the emerging market category. Emerging markets especially include Brazil, China or India but also Russia or Estonia and Latvia. The Czech Republic has many similarities with these Baltic countries stemming from the comparable development after the 1990.

Our two main ideas will be verified on the aforementioned data with tools of descriptive statistics as means and standard deviation. It should show the values of these characteristics depending on the types of an examined differentiation. The next chapter contains results of this analysis.

4. RESULTS

The results will be shown in the form of tables where the computed statistical characteristics will be displayed and in the form of figures which show not only time differences but especially a comparison of one selected industry branch among territories. In our case territories are USA, Europe (West part) and emerging markets. The tables contain the results for selected industry branches whose choice has been already discussed. The displayed results are the main descriptive statistical characteristics – mean, standard deviation and variation coefficient as other measure of the variability taking into account also value range. The statistical characteristics have been computed from the data covering the time period 2012–2016.

Figure 1. Descriptive statistics of EBITDA multipliers – USA Damodaran data

Industry	Mean	Standard deviation	Variation coefficient
Chemical (Basic)	7.58	1.46	0.19
Chemical (Diversified)	8.74	0.87	0.10
Chemical (Specialty)	10.23	0.59	0.06
Food Processing	11.35	1.65	0.15
Petroleum (Producing)	4.82	0.76	0.16
Pharma and Drugs	9.68	0.99	0.10
Rubber and Tires	4.77	0.27	0.06
Drugs (Biotechnology)	9.59	1.15	0.12
Drugs (Pharmaceutical)	9.20	0.25	0.03

Source: authors' processing based on

EBITDA multiplier reaches the highest value for food processing and chemical specialty industry in USA. However, these two industries are not the most vulnerable because that chemical basic and petroleum branches are. It must be emphasized that petroleum production has even the lowest mean of the analysed indicator.

Figure 2. Descriptive statistics of EBITDA multipliers – Europe

Industry	Mean	Standard deviation	Variation coefficient
Chemical (Basic)	7.14	1.22	0.17
Chemical (Diversified)	6.61	1.18	0.18
Chemical (Specialty)	8.91	1.31	0.15
Food Processing	11.47	0.99	0.09
Petroleum (Producing)	9.83	1.80	0.18
Pharma and Drugs	5.53	0.83	0.15
Rubber and Tires	10.00	0.03	0.00
Drugs (Biotechnology)	8.95	0.40	0.04
Drugs (Pharmaceutical)	7.14	1.22	0.17

Source: authors' processing based on Damodaran data

In Europe the highest values of EBITDA multiplier were reached also in food processing industry branch but the second sector is rubber and tires industry which had the lowest mean in USA. According to variation coefficient European data are more vulnerable because the variation coefficient exceeds 6 times the value 0.1 (of 9 branches). In the case of USA it happened four times. If we compare USA and European data we would come mostly to significantly different enterprise values using territorial EBITDA multipliers for the same industry branches. Exceptions are food processing sector and chemical industry focused on basic products whose values are internationally comparable.

Emerging markets are another issue because they are usually less predictable, more volatile, less liquid and with lower total capitalization value. The figure 3 proves that EBITDA multiplier reaches significantly higher values in the case of the emerging markets in comparison with USA and West Europe. Only two industry branches (Chemical diversified industry, pharma and drugs sector) do not exceed the mean value of 10. Contrary, the values over 10 were exceptional for West Europe and USA. The vulnerability is extremely high for the chemical industry focusing on the basic products and pharmaceutical drugs. The other industry branches have comparable vulnerability in the case of the variation coefficient with USA and West Europe.

Figure 3. Descriptive statistics of EBITDA multipliers – Emerging Markets

Industry	Mean	Standard deviation	Variation coefficient
Chemical (Basic)	12.39	6.69	0.54
Chemical (Diversified)	9.84	1.23	0.12
Chemical (Specialty)	10.57	0.91	0.09
Food Processing	12.75	1.23	0.10
Petroleum (Producing)	16.60	2.25	0.14
Pharma and Drugs	8.56	1.48	0.17
Rubber and Tires	24.65	0.75	0.03
Drugs (Biotechnology)	18.18	1.78	0.10
Drugs (Pharmaceutical)	12.39	6.69	0.54

Source: authors' processing based on Damodaran data

The highest mean values are reached for branches rubber with tires, biotechnological drugs (which has a short time series) and petroleum production in the case of the emerging markets. Contrary, the lowest values are reached for pharma and drugs (which has also a shorter time series) and all kinds of chemical industry.

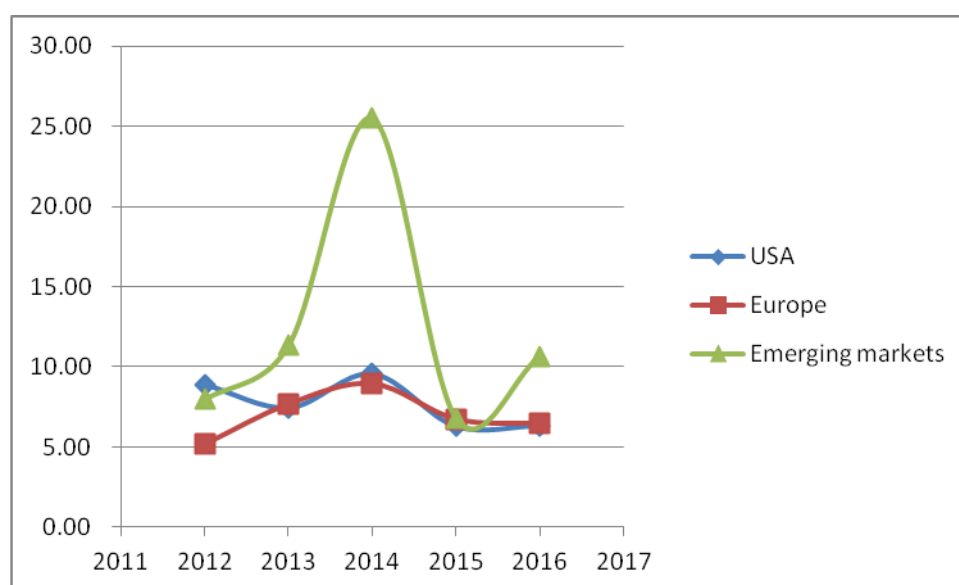
The time dynamic can be also visible not only from variation coefficients but it can be visualized in figures itself. The analysed time period covers the years 2012–2016. It should be noted that it is the post crisis period. Average EBITDA multiplier varies by sector and industry as it is proven by figures 1–3 in all territories but there is also an influence of territory and the analysed time should not be overlooked as well. Declerck (2016) proves that there is a significant decrease in the multiplier value during the crisis period. The values can drop from over 10 till 5 in one year period. It is hard to decide how high values are still healthy and stable. Maverick (2015) talks about values slightly below 10 although he postulates that the overall market average in 2015 was 14.7. Ribal, Blasco and Segura (2010) computed harmonic means for the Spanish unlisted food processing companies which reached 11.51 for small companies and 11.88 for medium-sized companies. The Czech advisory corporations usually recommend different ranges of EBITDA multipliers. They advice to use lower values of multipliers for the valuation of the Czech companies. The range is mostly between 4–6 (Kreston A&CE, 2014) or the larger interval is between 5–10 (Investment Consulting).

It will be let aside which value is the right, healthy and stable over time. The next figures will show the time vulnerability. The figures will always display one industry branch but in the different territories (USA, West Europe and Emerging Markets). There will not be displayed figures

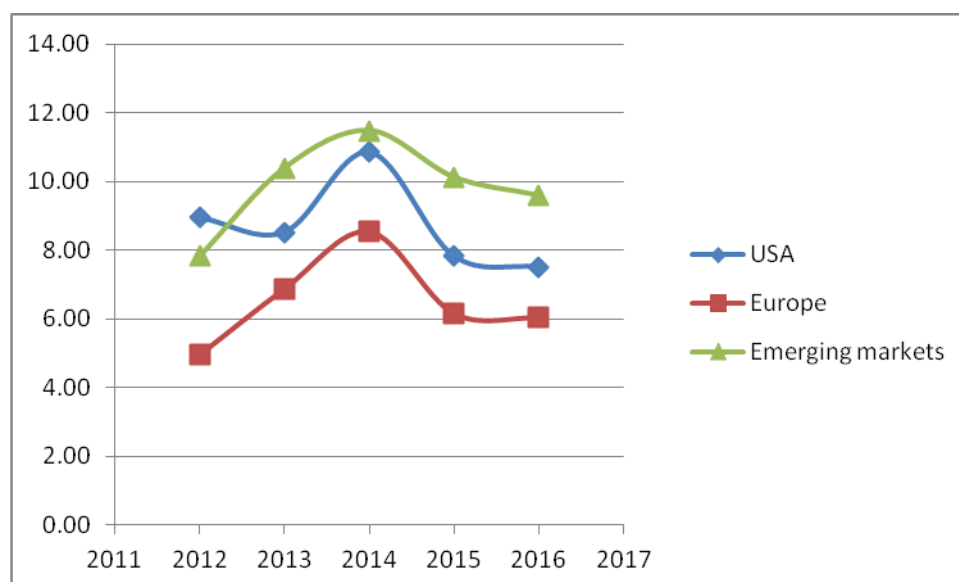
for the industry sectors which do not have compact time series as pharmaceutical industry which was split up into biotechnological and pharmaceutical drugs. The basic characteristics for these industry sectors were displayed in the aforementioned tables. The figures will be focused on the chemical industry in its basic, diversified and specialty variation, food processing industry and rubber accompanied by tires industry.

The figures prove that EBITDA multiplier reached the highest values at the emerging markets. This statement is valid for all displayed industry sectors although some territorial multiplier differences are much higher than the others. The huge gap between the emerging markets and developed economies of West Europe and USA is especially visible in the case of chemical (Basic), food processing and rubber accompanied by tires industry. Contrary, the industries of chemical (diversified and specialty) have multipliers' values closer to each other for all territories. If the last industry (rubber and tires displayed by figure 8) is let aside, the development dynamic of the remaining 4 sectors is comparable. They all reached the peak in 2014 when the multiplier had the highest value. Although chemical specialty changed the trend and reached the highest value in the last year at the emerging markets but the development for USA and West Europe copes the downtrend of other industries. However, the food processing industry is less vulnerable because after the drop in 2015 the values increased in 2016 at all analysed markets. It must be emphasized that the time series are not enough long for any statistical verification but the comparison still shows interesting conclusions. The same time development of the EBITDA multipliers' values confirms that the time period has a big influence on the value. It depends on the overall economic and market situation how high the values could be.

Figure 4. EBITDA multiplier for chemical industry (Basic) in 2012–2016

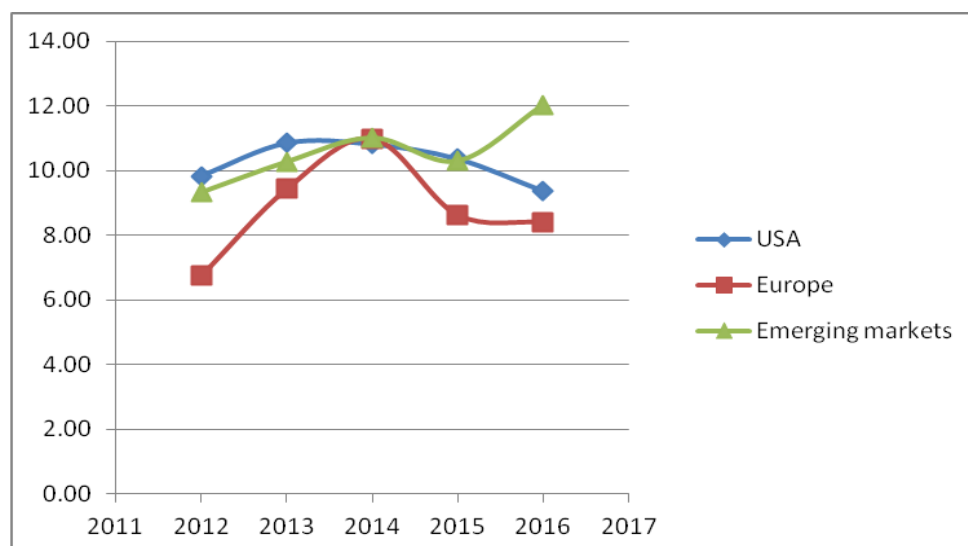


Source: authors' processing based on Damodaran data

Figure 5. EBITDA multiplier for chemical industry (Diversified) in 2012–2016

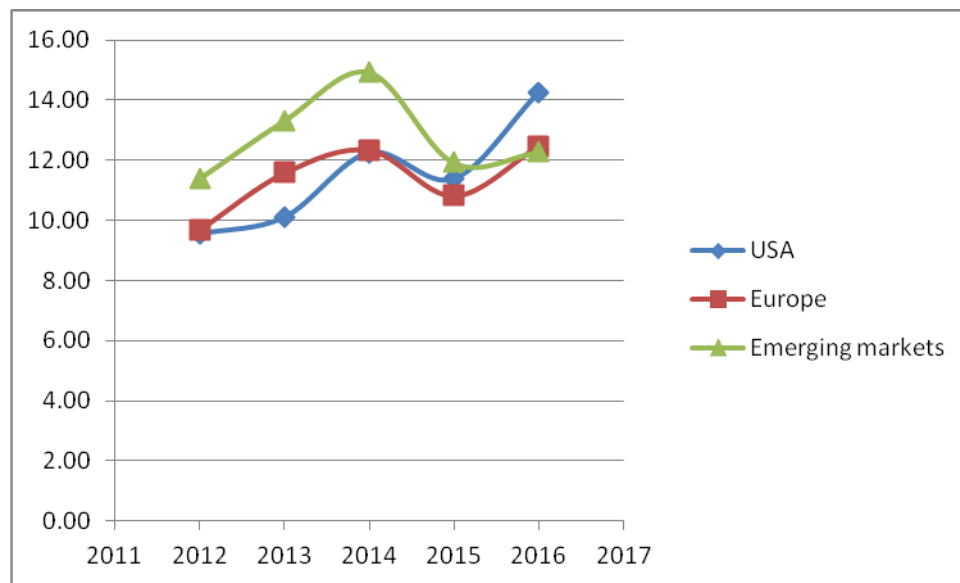
Source: authors' processing based on Damodaran data

The comparison of chemical (basic) and chemical (diversified) industry is possible due to figures 4 and 5. The time development which has been aforementioned is similar. The industries reached the highest value in 2014. The emerging markets have higher values in both cases but in the case of basic chemical sector they lead extraordinary. The values for USA and Europe are in this case similar but in the case of diversified chemical sector Europe has significantly lower values than USA which was almost reaching the peak of the emerging markets in 2014. Contrary, the territorial values of the third chemical sector focused on specialty are different. The time development is comparable with other chemical industry branches. The Europe has the lowest values but there is no significant difference between the values of the emerging markets and USA except the last year 2016 which has been already discussed in the overall description of these territorial figures. The food processing industry confirms the conclusions for chemical industry that the emerging markets have the highest values of the EBITDA multiplier and the values of the developed economies (USA and West Europe) reach very similar values. Surprisingly, at the first part of the analysed period the values of EBITDA multiplier were lower for USA and higher for West Europe in the case of food processing industry. The next described industry branch is the production of rubber and tires.

Figure 6. EBITDA multiplier for chemical industry (Specialty) in 2012–2016

Source: authors' processing based on Damodaran data

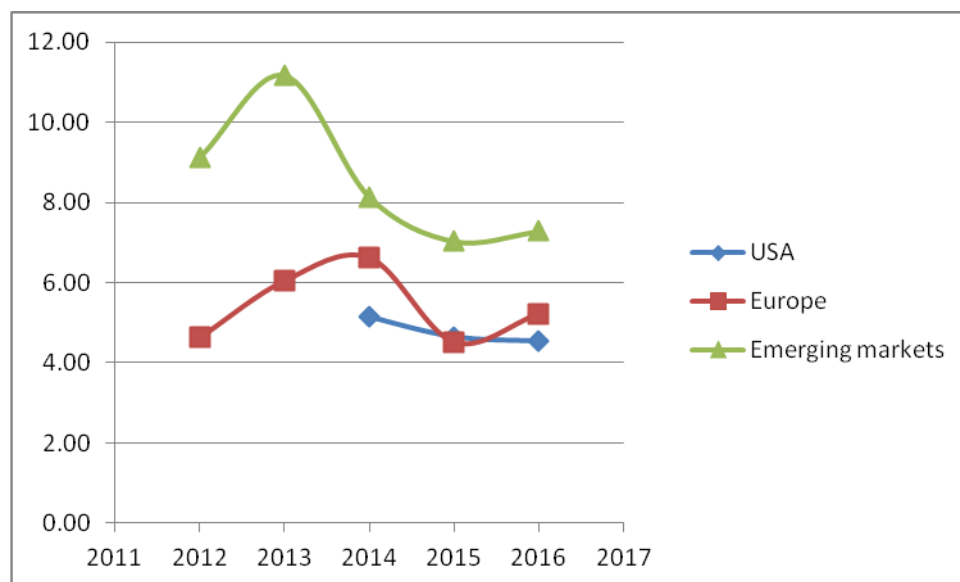
Figure 7. EBITDA multiplier for food processing industry in 2012–2016



Source: authors' processing based on Damodaran data

The development of the EBITDA multiplier values in the case of the industry producing rubber and tires is exceptional in the comparison with all other already discussed industry branches. The same conclusion is there for the values of the emerging markets which exceed significantly the values of the developed economies. The peak was reached in 2013 in the case of emerging markets and in 2014 for West Europe. The peaks of other industry sectors were observable in same years. It must be emphasized that there cannot be done any conclusions for the American market because the compact time series is not available. There has been published the values only since 2014.

Figure 8. EBITDA multiplier for rubber and tires sector in 2012–2016



Source: authors' processing based on Damodaran data

5. DISCUSSION

The values of EV/EBITDA (or EBITDA multiplier) were significantly higher for all almost all analysed sector than Czech recommendations. The recommended values of the advisory companies vary in the range 4–6 (Kreston A&CE, 2014). These recommended boundaries can be multiplied by 1.19–4.11 to come to the observed values. There are some exceptions. Lower values can be observable in the case of petroleum producing industry in USA and in rubber and tires sector in USA and Europe because the value at emerging markets is 1.43 times higher than the low recommendations.

The highest mean values are reached at the emerging markets for all analysed industries and sectors. The highest values were observable in the case of drugs sector whose mean value for the biotechnological part is 24.65 and for the pharmaceutical part 18.18. It is almost two times higher value (precisely 1.98–2.57 times higher) than for the other analysed sectors at the emerging markets. However, also other branches have significantly higher values at the emerging markets than in West Europe and USA (precisely 1.13–1.74 times higher). However, there are exceptions in the case of food processing industry and chemical industry focused on specialty. These industry sectors reach also higher values at emerging markets but the difference is much lower in the comparison with Europe and USA (only 1.03–1.11 times higher).

The emerging markets have also higher variability for almost all analysed industry branches. The exceptions are Chemical (Specialty) and Chemical (Diversified) which have higher variability in Europe and Drugs (Biotechnology) which has the highest variability in USA. The other branches have higher variability at the emerging markets and it does not matter if it is taken into account the absolute variability measured by the standard deviation or the relative variability expressed by the variation coefficient. The highest variability of all industry sectors is connected with the chemical industry focused on the basic products (variation coefficient 55.01% at the emerging markets, 19.28% in USA and 17.08% in Europe which has higher variability in chemical diversified industry).

The figures show for some industries similar development according to the criteria of the time or the territoriality. On the other hand, there are still many exceptional movements of the market which have been pointed out. Therefore the gained results could not be generalized. The EBITDA multipliers heavily depend on the industrial sector or branch. They are also influenced by the overall global economic situation. In the case of the emerging markets there can be same political, legal or other local changes and shifts which influence the final multiplier value. It is hard to detect all these influences and analyse them. The main reason is especially the broadness of the emerging markets which include many countries. Second, it is not known how the average multiplier is computed. It can be computed as an simple average but also as a weighted average whose weights are the enterprise market capitalization values. Both approaches have its pros and cons. The simple average assumes that importance of each company is the same. Small and medium-sized businesses can reach different results than large corporations and their global importance is lower. On the other hand the weighted average would prefer larger companies than SMEs. In the case of extra-large companies any shift of the enterprise policy leads to stock price changes and therefore the industry EBITDA multiplier can be significantly influenced.

6. CONCLUSION

This paper discussed the issue of corporate valuation focused on the market approaches using multipliers (or multiples). EBITDA as the most used multiplier was chosen for the detailed analysis. The theoretical part introduced EBITDA, its computation, advantages, disadvantages and possible ways of using. The research part was dedicated to the time development of EBITDA multiplier at three different markets according to the teritority (USA, West Europe and the Emerging markets). The great influence on the multiplier value has the enterprise belonging to some industry branch or

sector therefore only some selected industry branches were analysed. Results show that there are significant differences among territories and that the highest values are usually reached in the case of the emerging markets. Second influence is the overall situation which is displayed in the different values of the multipliers during the analysed time period. The research proved that the data clearly reflected the variabilities (time and territorial). The research main idea was confirmed because there are other influences than only the belonging to the specific industry branch and sector. These conclusions show that the use of EBITDA multiplier for the valuation of the company can lead to the misleading enterprise value. Especially the racketing values at the emerging markets in some years should warn. More stable economies as USA and Europe have less vulnerable development of the multiplier values and therefore they can be used more. EBITDA multiplier should still be used very careful as a quick information or as a source of the comparison with other valuation techniques. It means that the enterprise should not be valued only with the use of multipliers but also other techniques should be included in this process. The implications for practice and theory are following. As our research has shown there is a need to more critical approach to the "universality" of multiplier valuation, or its universality. The universality is not weakened only by the type of industry but also by the type of market as well as by other factors. This valuation method therefore needs to be used with the reflection to other differentiations.

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Esoterica

MOBILE APPLICATIONS IN IFRS EDUCATION

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Abstract

As a sweeping socio-economic phenomenon, a mobile life-style has quickly become a reality on a global scale. It is dynamically penetrating any field of human activity and any scientific discipline as well. Though it might seem implausible, the domain of International Financial Reporting Standards is not an exception to this trend. It is a major concern of the authors to draw the attention of the experts in the field to the newly emerging mobile education applications, the existence of which may substantially influence people's typical behaviour in acquiring information in general, and educational content specifically. Mobile m-learning solutions provide high levels of flexibility, ease of use, and user-friendly environment. The paper is complemented by an exploratory analysis of five existing mobile applications closely related to IFRS aiming at investigating their typical features and potentials to meet the ever more complex requirements students and professionals encounter in their efforts towards IFRS' precise comprehension and flawless interpretation. The mobile paradigm and smart mobile applications can enhance the national standards' convergence with IFRS and help resolving issues related to their adoption specifics.

Keywords: Accounting standards, convergence with IFRS, IFRS education, mobile educational application, mobile learning solution.

1. INTRODUCTION

There is no doubt that without digitization modern market economy probably could not exist. Simultaneously, it would not exist without communication between buyers and sellers which has changed its nature significantly in the last two decades as a result of many disruptive innovations. Other important elements of a market economy are economic evidence, control, accounting, auditing, and reporting. All these attributes of market economies have been developing for long decades since World War II (especially in the USA). However, in the beginning of the 21st century, without the Internet (Vint Cerf. Quora, 2015) and mobile phones Industry 4.0¹ would not emerge. (Marr, Bernard, 2016). Since the first moment, all the above enumerated factors have been interconnected, in spite of the fact that different elements of the emerging system came into existence in a disarranged and rather chaotic way, until they have melted together and have become apparent.

There is a question today, for how long these revolutionary days of the IT will be continuing, as the speed of modern technology innovations is tremendous. It is evident that every innovation has to be supported by corresponding changes in management, organisation, regulation, new methods of financing, and education etc. And, of course, the role of national states, political systems etc. are significant as well. It is well known that cyclical character of capitalist economy plays an important role as well.

Having in mind all the above discussed general events and facts, we have set up the main objective of our paper, i.e. *to analyse and discuss the characteristics and educational potential of selected mobile educational applications used in professional accountants' IFRS training both globally and at the local level in the Czech Republic.*

Our *hypothesis* is that under certain conditions, the effects of mobile learning solutions could substantially foster the quality of IFRS education and training in the Czech Republic.

¹ Industry 4.0 marks the fourth industrial revolution in which computers and automation enter a new era where machine learning algorithms will control the robotics while human operators input will be very limited.

2. REVIEW OF LITERATURE

There are extensive literature resources on current tendencies pertaining to smartphones and mobile applications' use in education in general, and also some on education of accountants specifically. However, only recent titles with direct relevance to our treatise have been selected. It is useful to start with history. The article *The History of the Smartphone* by Pothitos, Adam (2017) contains comprehensive characteristics of a smartphone development (incl. photographs of the most significant models of smartphones). A detailed, month by month, structured review of smartphones' predecessors and their development complemented by the data on significant events which happened in this sector in the period from 2007–2011 has been published by The Snugg Company (2011). Apart from technical improvements, based on this review we can get a better idea on the character of the competitive fight among the main smartphone producers. Similar focus can be found in the treatise *Smartphone Evolution* (2012) by Sangeeta Mukherjee. In order to understand better the distinctive features of smartphones in comparison with previous models of mobile phones, various dictionary entries can help, including the definition of the term “smartphone” itself (e.g. Technopedia. Definition – What does Smartphone mean? 2017). Also characteristics describing Apple's iPhone are well described. (Technopedia. What does iPhone mean? 2017). As for the future of iPhones, since 2012 many experts have voiced their opinions; it would be very interesting to monitor their opinions and compare them e.g. with those of today's authors. Speaking about recent developments in mobile operation systems, we can bring to attention Apple's revelation of changes for the autumn 2017 (AatifSulleyman, IOS 11. 5 June 2017). A detailed technical description of the future version of iOS operating system planned for the year 2020 was published on the server Mashable.com by Raymond Wong (iPhone 2020, June 29, 2017). The mobile phones development can be observed hand in hand with the step-by-step development of the Internet already since the 70's and it is examined by Vint Cerf (Who invented the Internet. In: Quora, Jul 13, 2015) in his detailed analysis explaining who the “fathers of the Internet” were.

The fundamental source of information on the digital society in the Czech Republic, European Union and worldwide is the publication by the Czech Statistical Office *Information Society in Numbers – 2014–2016*. (Český úřad statistický. Informační společnost v číslech – 2014–2016). For the issues related to education system, Chapter F is relevant. The data in this publication are valid to the date of March 17, 2017. Another important set of fresh data dealing with the levels of digitization impact and compiling the most important findings of research projects by prestige global organizations forms the content of a recent comprehensive article “*Mobile Learning Stats that Will Make You Rethink Your Training Strategy*” (Gutierrez, 2017). Last but not least, the economic impact of mobile application and the emergence of a new paradigm – the app economy – is investigated in the recent conference paper *Creating Lovemarks Through Mobile Applications* (Knihová, 2016).

In order to analyse the issues regarding accountants' education, it is necessary to get acquainted with the documents approved by the IASB (International Accounting Standards Board) till the end of 2016, and with the future approval and amendments which are presumed. (EY, IFRS Standards, January, 2017). At the same time, the situation in the IFRS accounting standards' implementation into the accountancy in the Czech Republic represents a basic set of information to be examined (IAS, Financial Accounting Standards in CR, 2017). The publication *Accountancy Europe* (Standard setting in the 21st century – Accountancy Europe, 2017) represents the fundamental source of information which has opened the discussion on the change in IFRS standards' creation in the 21st century. An important source of research findings from practical implementation of IFRS adoption in the CR can be found in publications by I. Jindřichovská and D. Kubičková (2015, 2016). The results of this debate can significantly impact not only the creation of accounting standards but also further orientation of IFRS education.

Due to the fact that teaching and learning with the use of mobile applications constitutes a completely new educational environment, the publication by S. Ingle and V. Duckworth *Enhancing learning through technology in lifelong learning: Fresh ideas, innovative strategies: 25 creative tools for using technology in your practice* will help to establish methodological framework of mobile apps'

implementation into the teaching practice. Finally, the perspectives of mobile learning technologies and mobile applications specifically are examined in the e-publication by Bob Little “Perspectives on Learning Technologies”.

3. METHODOLOGY

In pursuing the main goal of the presented paper, the authors of the study assume that the optimal result can be achieved by examining the object of the study in the context of the environment that can support or inhibit the application of modern IT technology to varying degrees. Therefore, at first they carried out a survey of the state of knowledge within the range of facts that they consider relevant for assessing the question of the extent of the existing conditions necessary for the modernization of IFRS² education in the Czech Republic using advanced IT technology. This literature has been described in the Review of literature.

The next step was the descriptive characterization of the situation in the world of smartphones globally (mobile technology definition, list of main HW and SW producers, situation analysis of the global mobile technology market) and comparative analysis of the Czech Republic's position among mobile phone users in the EU based on the current statistical data of the Czech Statistical Office for the year 2016.

The basic method for evaluating the possibilities and limitations of the use of smartphones in the Czech Republic in professional education of accountants consisted in a comparative analysis; on the basis of its results, recommendations for a gradual modernization of the education of accountants in the Czech Republic has been formulated to support the process of IFRS adoption in small and medium-sized enterprises facilitated by the use of smartphones.

Unfortunately, within the pertinent applied research, there are not many verifiable partial research projects dealing with the use of IFRS mobile apps; specifically, nobody in the CR has dealt with this issue in greater depth so far.

Empirical research on the teaching of IFRS in accounting courses at universities in the Czech Republic is still inadequate and therefore every other gained piece of knowledge increases the possibility of mitigating this lag in IFRS teaching in the Czech Republic. Later, the accumulated knowledge will enable to be more broadly integrated into a wider framework of IFRS knowledge; and that is where the added value undoubtedly lies.

The authors didn't examine the impact of integration measures of the EU organs on the situation in the CR either in the area of mobile technology or in education. It's highly probable that the examination of this extent might have to be based either on a specific survey results, or on estimations.

4. THE MOBILE PARADIGM WITHIN THE APP ECONOMY

In his keynote speech at the Mobile World Congress in 2010, Google's then CEO, Eric Schmidt, declared the ‘mobile first’ doctrine. “The basic message is pretty simple. The confluence of these three factors (computing, connectivity and the cloud) means your phone is your alter ego, an extension of everything we do. [...] Our job is to make mobile be the answer to everything.” (Google CEO Eric Schmidt at MWC Puts Mobile First, 2010). Eric Schmidt is a respected visionary leader and his words were confirmation of a trend that we are experiencing today. The smartphone has become an

² IFRS stands for International Financial Reporting Standards. IFRS has been developed with the aim of removing variations in the treatment of various accounting aspects and therefore bring standardization in Financial Reporting. It has been designed as a common global language for business affairs, so that company accounts are understandable and comparable across international boundaries.-Menon, S. Revenue Recognition – The new IFRS Standard and its implications. Retrieved August 7, 2017, from <https://blogs.sap.com/2016/02/11/revenue-recognition-the-new-ifrs-standard-and-its-implications/>

essential means of communication and an integral part of our lifestyle. For companies, communication via a mobile phone has become a new major business opportunity. For marketing professionals, it is a dream come true, because the mobile phone as a communication channel is almost always “on” and rarely “off”. For educators it is a realm of new opportunities to design m-learning solutions and engage learners ‘on-the-go’.

The reasons why we are experiencing the shift towards mobile-lifestyle is obvious. It originates directly from the definition of a smartphone “A smartphone is a mobile phone with highly advanced features. A typical smartphone has a high-resolution touch screen display, Wi-Fi connectivity, Web browsing capabilities, and the ability to accept sophisticated applications. The majority of these devices run on any of these popular mobile operating systems: Android, Symbian, iOS, BlackBerry OS and Windows Mobile” (Techopedia, 2017). Therefore new generations of smartphones, backed by highly advanced features, guarantee pleasurable and efficient working environment.

The ever increasing number of smartphone users in the global market has led to a tremendous increase in the number of apps that consumers use on their phones. The Apple App store boasts close to 2 million of these apps while Google play has over 2.2 million Apps. This number is expected to increase in the future. 52% of the time individuals spend on digital media is on mobile apps. This aspect clearly indicates that enterprises are generating a lot of revenue from the usage of mobile apps. (Business 2 Community - Top Trends, News & Expert Analysis, 2017). Also in the Czech Republic, the number of smartphone users has tripled over the last five years and reached 58% of the population in 2016 (Počet uživatelů chytrých mobilních telefonů se v ČR za pět let více než ztrojnásobil, 2017).

According to the infographics released by GO-Globein April 2017 (Global Mobile Internet Traffic – Statistics and Trends [Infographic], 2017) the overall usage of mobile apps is on the rise. Thanks to mobile apps, smartphone users can get an easy access to essential information. According to these statistics (a) 52.7% of the global mobile phone population accessed the Internet from their mobile phone in the year 2017 and this number is expected to grow up to 61.2 % in 2018; (b) mobile internet usage surpassed desktop for the first time ever in history in October, 2016, and accounted for 51.3% compared to 48.7% by desktop.

Simultaneously, the economic impact is huge and economists have to take into consideration the emergence of a new paradigm – the app economy. The 3rd edition of the European App Economy report (i.e. the latest available) examines the app market within the European market, compiling the data for 2015. There has been a great demand for talented and skilled app developers. Thus, the app economy creates new jobs both directly and indirectly related to apps' creation. Out of the estimated 1.3 million app developers in Europe, there are 846,000 full time professionals. The app economy spill-over effect creates additional 650,000 jobs in the EU and extends beyond direct technical and non-technical jobs, creating jobs in different business sectors, from media, financial services to healthcare and automotive (European App Economy, 2015).

The dynamic development of mobile communication and extensive use of smartphones and mobile apps embody the logical outcome of technological advancements. The app economy has already become a reality and the age of the Internet of Things (IoT)³ is ahead of us. Smart mobile applications are playing an ever-increasing role in every field of human life, including educational mobile apps which help many people acquire new knowledge and skills and in many cases improve their living standard. They may serve as a primary source of information or as additional learning content accessible anywhere and anytime.

In the following chapters the authors deal with educational mobile apps related to the domain of IFRS.

³ Internet of Things (IoT) is the concept of basically connecting any device to the Internet offering the potential for humans to work more efficiently.

5. EDUCATIONAL MOBILE APPLICATIONS FOSTERING IFRS KNOWLEDGE ACQUISITION AND TRANSFER

“A software program that runs on a mobile phone” is an official definition of 'mobile application' given by the Cambridge Business English Dictionary. (Mobile Application Meaning in the Cambridge English Dictionary, 2017). Mobile applications are designed for different purposes and different segments of users. Ingle & Duckworth (2013) identify the range of uses for apps for a number of educational purposes: (1) organization and administration, (2) researching and information seeking, (3) collaborating and sharing, (4) enquiry and knowledge gathering, and (5) application and interaction. (Ingle & Duckworth, 2013, p. 93). Educational mobile applications can be designed with focus on a variety of learning goals: they can present interactive textbooks, create data visualizations, offer sophisticated testing tools, or foster contextual learning. They are learner-centric. Many of them contain collaborative and gamification elements as well as social sharing and social networking options. Mobile applications respect individual pace of learning by offering speed options, help to visualize information for better retention, accommodate multimedia formats (audio, video, video animations etc.). Apart from the already mentioned apps' features, we are on the verge of the use of simulations, virtual reality and augmented reality in mobile apps' design. The abundance of mobile applications created for different other than educational purposes (graphics, geolocation, maps, audio/video recording features, shared calendars, mobile co-authoring apps, etc.) enable the adoption of innovative methods of teaching in general and m-learning projects specifically.

Mobile communication and especially the immense number of mobile applications is changing our lives. Simultaneously, the economic impact is huge and economists have to take into consideration the emergence of a new paradigm – the app economy, creating an unprecedented demand for talented and skilled app developers. Simultaneously, only in the year 2015, the new app economy created 2 million new jobs in the EU, i.e. direct jobs and the app-economy spill-over jobs. (Knihová, 2016, p. 146).

In order to answer the fundamental question why we should consider shifting from classical e-learning delivered through a PC screen to the mobile screen alternative, there are many recent statistics and data worth noticing. K. Gutierrez compiled the most important findings of research projects by prestige organizations (e.g. eLearning Guild, CLO Magazine) in a comprehensive article *“Mobile Learning Stats that Will Make You Rethink Your Training Strategy”*. In this article, the statistics are truly convincing, e.g. (1) Millennials in the 18–34 years age bracket have the highest mobile usage. The following numbers show that Millennials aged between 18 and 34 years prefer consuming content on mobile devices to desktop computers:

- about 97 percent use mobile devices;
- a fifth of them are mobile-only users;
- a paltry 3 percent consume content only on a desktop device.

As for learning preferences specifically, 52% of people using m-Learning use it in bed after waking up and 46% in before they go to sleep (Gutierrez, 2017).

K. Gutierrez claims: *“There is no question that mobile devices are changing corporate learning forever. However, this doesn't mean classroom-based training or formal eLearning courses are going away, it just means the mobile movement is demanding companies to rethink their training strategies and to create learning programs especially for mobile devices.”* (Gutierrez, 2017).

Bob Little, a renowned UK-based learning technologist, believes that mobile applications are contributing positively to business development because they are available wherever there is an internet connection and a need for instant performance support. This, he says, makes mobile applications more flexible than traditional e-learning solutions, especially to the younger element in the working population who have become used to using web browsers to provide them with the entertainment and education that they want and need. He sees the huge impact of mobile applications: *“Communications, games and entertainment, business services, learning and development (L&D), commerce and other business transactions, as well as business opportunities are inter-connected with*




mobile applications in the sense that they both influence and are influenced by these mobile applications.” (Little, 2012, p. 164).














It is not surprising that also in the area of IFRS there are first instances of mobile apps emerging in app stores. It is the aim of the authors of this paper to present the results of their exploratory analysis focused on IFRS mobile applications, their character, main features, and availability for different mobile operating systems with the objective to investigate their potential use in tertiary education. The research is significant and quite unique in its character due to the fact that IFRS is currently becoming an integral part of the syllabi of college and university courses in economics and finance in the Czech Republic. A critical assessment of the feasibility of mobile applications' implementation into the tertiary education courses of IFRS and related issues can significantly contribute to study programmes' update, extend the portfolio of innovative teaching methods, and help universities' Finance Departments to make evidence-based informed decisions. On the ground of the analysis results, the hypothesis formulated in the introduction of this paper will be tested and focus of further research suggested.

In order to demonstrate a wide spectrum of IFRS applications and options for mobile learning, five types of apps with different focus were selected: (1) IFRS structured knowledge base, (2) IFRS upcoming events, (3) IFRS mobile journal, (4) IFRS mobile testing tool, and (5) IFRS and related issues podcast service by different providers.

Each of the analysed application is complemented by the information on the app's availability for different mobile operating systems, i.e. Apple's iOS and Google's Android. Microsoft's platform of Windows Phone was not considered in this analysis as there are no data available. Within the Apple's iOS operating system also the information on apps for iPhones and apps for iPads was included.

Table 1. Mobile applications specializing in IFRS

Mobile applications specializing in IFRS				
App's Name	Characteristics and key features	iOS		Android
(1) KPMG IFRS	<p>Quick overview of the key requirements of IFRS for easy reference, organised by topic, structured information. It is based on IFRS in issue at August 1, 2016.</p> <p>Division of information into 4 main parts:</p> <ul style="list-style-type: none"> * 1 General issues; * 2 Statement of Financial Position; * 3 Statement of Profit or Loss and other Comprehensive Income; * 4 Special Topics (incl. Financial Instruments). <p>* English Glossary of terminology included.</p>	iPhone	iPad	
Language/languages: English		✓	✓	✓
Available offline 				
(2) PwC IFRS Update	<ul style="list-style-type: none"> * View schedules, explore sessions, and find networking events. * Curate your own personal schedule for easy conference attendance. * Access location and speaker information at your fingertips. * Post updates to sessions, keynotes, and exhibitor booths. * Interact with a real-time feed of all event activity that showcases which sessions are trending, most popular photos, and popular discussion topics. * Earn points, badges, and prizes for being active on the app and at the event. Check the leader board to see how you compare to other attendees. * Expand your professional network. 	✓	✓	✓
Language/languages: English, Czech, Bulgarian, Croatian, Danish, French, Dutch, Italian, Japanese, Korean, Hungarian, German, Polish, Portuguese, Romanian, Russian, Slovak, Slovenian, Serbian, Traditional Chinese, Simplified Chinese, Greek, Spanish				
Internet connection necessary 				
(3) IFRS Review	<ul style="list-style-type: none"> * Latest trends and techniques in IFRS financial reporting across Europe. * Examples of companies preparing their financial statements under IFRS through effective benchmarking across the peer group and drawing out best practice references. * IFRS news and stories highlighting changing practices in IFRS financial reporting * Updated regularly with new stories covering over 700 IFRS reporting companies * Individual company analysis as well as topical analysis for all major accounting topics under IFRS. * Rich content with extracts from actual company annual reports. * Real-life examples of IFRS disclosures of hundreds of companies. * Weekly newsletter direct to your inboxes. * Best practice and peer group references highlighting changes to reporting practice under IFRS. * Complete text of IFRS standards. 	✓	✓	
Language/languages: English				
Internet connection necessary 				

Mobile applications specializing in IFRS				
App's Name	Characteristics and key features	iOS		Android
(4) Financial Accounting Exam Questions 2017 Language/languages: English Available offline  	<ul style="list-style-type: none"> * MASTER each study set effortlessly by many scientific proven methods: Multiple Choice, True/False, Matching, etc. * TRACK your progress on every practice test and exam topic: MEASURE your weakest and strongest categories * SEPARATE hardest questions and cards into one group to study more effectively * CHALLENGE yourself by EXAM SIMULATOR with time box and an intelligent grading system FREE version to get access to: <ul style="list-style-type: none"> * Hundreds of free practice questions and flashcards * 5 Free Exam Builder with detailed explanation and history * Learn more efficiently with the Matching Game Premium Version to get access to: <ul style="list-style-type: none"> * ALL the Exam Questions * Hundreds of flashcards * Lifetime access to the Exam Builder * Lifetime support and updates 			
(5) Podcasts * Language/languages: English ICAEW⁵ Financial Reporting Faculty  International Accounting Standards Board: Developments in IFRS  PwC's CFO direct podcast 	Description * Internet connection necessary Audio podcast + PowerPoint Presentation; it offers assistance in IFRS, UK GAAP and other aspects of business reporting. The International Accounting Standards Board (IASB) is responsible for the development of IFRS (IFRS Standards) used by more than 100 countries. The development is subject to rigorous public consultations and engagements with stakeholders around the world. This podcast service keeps interested parties up to date on the work of the IASB and developments in financial reporting. PwC professionals share perspectives on today's key regulatory, accounting and financial developments. By subscribing to this podcast service you can stay well informed in a rapidly changing business world.			
				
				

Source: Authors' own elaboration

⁴ The price of the Premium Version of this app is \$ 6.99 in August, 2017.

⁵ Institute of Chartered Accountants in England and Wales.

The significance of educational apps' implementation in tertiary education relates also to IFRS-focused mobile apps which (as proved by I. Jindřichovská and D. Kubíčková in their research – 2015) have not been put into university teaching practice in the CR. However, already now, based on the experience from teaching at The University of Finance and Administration, it is possible to draw the following conclusions:

- 1 Majority of students in masters' programmes use smartphones and the students are fully competent to work with mobile apps.
- 2 If the subject IFRS Fundamentals is successfully included into selected study programmes, there will be no major efforts to prepare students for using IFRS-focused mobile apps.
- 3 To be more specific and name at least one suitable mobile app, e.g. for the study field of Banking, the mobile app FRF – Financial Reporting Faculty can be recommended as it brings constantly updated information and suits the purposes of both learning and instruction.

Although in the Czech Republic at present the IFRS reporting obligation is limited to only a relatively small number of securities issuers registered in a regulated securities market in the EU Member States, it is to be expected that these standards will be applied in the Czech Republic in a greater extent in the coming years. First hand evidence is that they are already used by companies that do not have this legal obligation stipulated by Czech Accounting Act. In fact, as a rule, foreign companies and their subsidiaries with foreign interest operating in the CR submit their financial statements to their parent companies in compliance with IFRS (Coca-Cola, ING Bank, BNP Paribas, BNP Paribas Card if Insurance Company – just to name a few). In any case, it is important to take into consideration the time requirements necessary for updating university syllabi and implementing IFRS, or extending the number of units of teaching IFRS-related content where it already exists. Rudimentary level of IFRS teaching materials will have to be enhanced to advanced level, too.

The above-mentioned exploratory analysis examined five different types of IFRS-related content delivered through mobile platforms and a variety of features for students to benefit from. Unfortunately, neither of these applications used the popular multimedia format of video or video animations, however numerous audio and video podcasts are offered by different providers. Regardless the type of (university) course (face-to-face teaching, blended learning, e-learning course, etc.) and the hardware employed, higher demand for mobile learning solutions is to be expected. As a result of this trend, educational institutions may find it necessary to revise the already existing educational content and re-author it using mobile platforms. According to the research, the two most cited reasons by US universities already running or planning to offer MOOCs⁶ were 'to increase the visibility of the institution' and 'to drive student recruitment'. (Grade Change, 2014). Apart from university branding strategies, cost cutting plays an important role, too.

Teaching IFRS is a remarkable emerging trend. It can become a unique selling point of any educational institution if it is given due consideration and professional care. Creating a mobile application which will be related to IFRS and use state-of-the-art features of educational mobile apps, incl. gamification, interactivity, social learning, testing etc. is the type of educational technology which can significantly contribute to immersive learning with a chance to reach excellent results on the part of students. On the top of that, an English version of such a course will automatically mean global reach as there are no boundaries in app stores. The use of technology is far from being an end in itself. Teaching in mixed learning (hybrid) environment demonstrating the ability to integrate mobile learning into the whole mix of teaching methods is a new challenge for educators. The Spanish accounting educators expressed it very clearly: *“MOOC could be seen as an opportunity to redesign dynamic environments and teach consistently with current learning styles. [...] The most important thing is how to use technology effectively in a learning environment, maintaining a critical and proactive attitude.”* (Massive Open Online Courses for IFRS Education: A Point of view of Spanish Accounting Educators – ScienceDirect, 2016). High quality mobile learning applications will undoubtedly stimulate the desire to participate in lifelong learning and thus serve university graduates many years after leaving their alma mater. Last but not least, social learning elements implemented

⁶ Massive Open Online Courses.

in mobile learning apps may facilitate the development of informal networking. Students can benefit from new contacts and have better chances for professional growth and challenging job opportunities.

6. DISCUSSION

Based on the data pertaining to the year 2016, published by the Czech Statistical Office and confirmed on March 17, 2017 in Chapter F, it is obvious that as far as quantitative indicators on the number of mobile phones in the CR are concerned, the Czech Republic belongs among the leading EU countries. (ČSÚ. Informační společnost v číslech, 2017). However, taking into account qualitative indicators significant for the possibilities to assess the use of mobile phones in accountants' education, the situation is different. As far as this paper's authors are aware, a more detailed survey does not exist of lecturers' use of mobile applications on accounting courses in the Czech Republic. For instance, the available data on the *Course for IFRS Specialists* offered by the Institute of Certification of Accountants indicate that the students are required to get only printed versions of professional accounting literature, or sample exercises as study materials. Similarly, there is a lack of data on the use of mobile phone applications and/or multimedia at colleges and universities in the education of future accountants. Though the purchase price of the latest sophisticated versions of smartphones might be a barrier to some students and teachers, a more important factor consists rather in the long tradition of using printed texts only as the primarily study materials for students of accountancy, not mentioning the use of outdated versions of accounting software programmes (as it was often the case). Barriers to modernization of teaching practice in accountancy cannot be overcome at once but only as a result of step-by-step elimination of outdated and non-efficient teaching methods.

The unfavourable situation may be partly affected in a positive way by seminars and lectures given by lecturers of foreign professional organizations and institutions operating in the Czech Republic, i.e. for example ACCA - the Association of Chartered Certified Accountants. However, other obstacles may consist in lectures given in English, not sufficient knowledge of local accounting specifics, or high costs of this type of education. As a result, only a small percentage of professional accountants will participate.

Times have changed since accountancy standards and IFRS setting was introduced. Czech accounting standards are gradually incorporating the key elements of IFRS (Jindřichovská, Kubíčková, & Kocmanová, 2014, and Jindřichovská, & Kubíčková, 2016). Due to the fact that technology has far-reaching implications both on accountancy and IFRS, there is an urgent need to prepare all professionals involved in the process for the challenges of the 21st century. In one of the latest inspiring think-tank materials, the authors believe: *"There is a need to ensure that standards setters are appropriately and in good time considering the impact of technology on their respective work programme as well as on their methods of operations."* (Standard setting in the 21st century – Accountancy Europe, 2017). At the same time they express the idea that the lack of initiatives addressing technological developments is in the areas that need to be changed. As an example of an innovation needed, they suggest the introduction of digital collaboration tools into consultation processes. (Standard setting in the 21st century – Accountancy Europe, 2017). The standpoint is relevant because shareholders' expectations are dynamically changing as well.

Based on the results and findings of the exploratory analysis, the authors propose implementation of particular measures to remedy the situation. Currently, the training of the most qualified accountants is provided by large foreign companies operating in the Czech Republic themselves and / or through professional international associations and large consulting firms, which is not likely to change in the medium term. Weaknesses in teaching accounting in the Czech Republic (as stated in sub-5) are likely to persist for a relatively long time, as the reforms in this area encounter many objective and subjective obstacles. For more details on the development of accounting profession in the Czech Republic see e.g. Jindřichovská and Kubíčková (2015). The optimal solution would be to make use of digital technology and incorporate the basics of IFRS into university accounting courses supported by m-learning solutions within the mobile apps environment. It would

also be desirable for the training and education of accountants in the Czech Republic to include ethics in accounting and lessons on reporting as an integral part of the programme.

As for the structure of educational mobile application, the authors recommend to prospective university lecturers in their role of mobile apps' designers to follow the latest findings and trends in mobile learning. Technology develops. What's optimal today will not be optimal tomorrow. Fifteen or 20 years ago, 'traditional e-learning' offered many advantages to face-to-face teaching. It's now being overtaken by mobile learning. Next year's technology may easily be more advantageous. It would be short-sighted to 'prescribe' a universal solution; sharing examples of good practice seems to be more relevant in this respect.

In order to implement these changes, it is necessary for small and medium-sized Czech export companies to realize gradually the benefits of IFRS applied in a modern way.

The expansion of the mandatory application of IFRS in Czech conditions is not on the agenda at the moment but certain segments of business organizations and their accounting departments would benefit from mobile learning solutions in the form of mobile apps for accountants in Czech language and in harmony with accounting rules applicable in the Czech Republic.

The Czech national standards' convergence with IFRS is a challenging process. If we want to resolve national adoption specifics efficiently and not to be lagging behind, all issues, including innovative teaching methods, should be addressed in a complex way. It also includes educators' proactive approach to creating new or re-authoring the existing educational content for online and mobile learning platforms with the aim to foster the quality of learning concepts such as social, self-paced, interactive and immersive learning. Creative educators hold the digital key to well-liked, efficient and engaging learning environment for accountants both locally and worldwide.

7. CONCLUSION

At the beginning of this paper the authors set up the objective *to analyse and discuss the characteristics and educational potential of selected mobile educational applications used in professional accountants' IFRS training both globally and at the local level in the Czech Republic*. On the background of extensive Czech and foreign literature review and careful examination of mobile applications' focused on IFRS and related areas offered in app stores, in the Chapter 5 *Educational mobile applications fostering IFRS knowledge acquisition and transfer* there are the results of the exploratory analysis which brings data on five mobile applications dealing with IFRS, while each one focuses on a different aspect of IFRS and related disciplines. The results are presented in a structured way in the form of a table with the aim of easy and quick orientation in numerous mobile applications' features, operating platforms and potential. The authors claim that the objective of the paper has been fully reached.

At the same time, based on the acquired information and data, the hypothesis that *under certain conditions (specified in sub-6), the effects of mobile learning solutions could substantially foster the quality of IFRS education and training in the Czech Republic* has been fully verified.

As a rule, empirical research (applied research) is usually based on existing statistical data that must be appropriately structured using pertinent scientific methods in harmony with the research objective. It is the precondition for further data analyses. It can be also based on a number of other findings, such as interviews, media news, photographs, videos and the like. Another important question concerning empirical research is that the results obtained from partial analyses cannot be generalized without further elaboration, namely due to their heterogeneous nature, in order to become a stepping stone to the construction of a partial theory. Only after the accumulation of a large number of significant data and their verification it is possible to assume that the particular problem under investigation is mature enough to derive theoretical conclusions. However, in today's dynamic social and economic development, it must be borne in mind that state-of-the-art findings will shift the limits of knowledge so much that some of deep-rooted wisdoms, formulated development trends, or

scientific paradigms, will not have long-term validity and – sooner or later – will have to be altered. Ultimately, examples of this exist in all scientific disciplines.

The conclusions discussed and drawn in this paper are fully in harmony with the recent findings and recommendations published in Accountancy Europe, 2017 as well as with IAS training characteristics highlighting practical approach using real-world examples, student interaction and hands-on activities in order to provide the most effective learning experience for the student. This approach is worth extending into mobile learning platforms.

The authors of this paper are fully convinced that mobile learning through high-quality mobile applications is a way to go in IFRS and accountancy education in the years to come. As there are no boundaries in mobile learning, creative educators with the help of state-of-the-art technologies can offer high-quality educational content with global reach.

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EUROPEAN E-JUSTICE PORTAL – REALITY OF ELECTRONIC ONE-STOP-SHOP FOR PUBLICATION OF FINANCIAL STATEMENTS IN THE EU

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Abstract

Almost ten years ago, the Directive 2009/101/EC brought the concept of a central EU platform for law and business information from the EU member states – the European e-Justice portal. Further, the Directive 2013/34/EU then developed the demand for the publication of financial statements. This interrelated e-publication of financial statements fits in the Europe 2020 strategy as well as in the EU and national legal frameworks. However, does it truly operate vis-à-vis financial statements? A general exploration of the national business registers section of the European e-Justice portal, as well as Czech national case studies reflecting the post-recodification Czech Commercial Register framework and operation, reveals that the reality is far from perfection. Perhaps the EU is reaching the digital single internal market, but still a reliable, free and electronic availability of financial statements of all subjects from the EU is more a myth than reality. This demonstrates the persistent discrepancies in both the approaches and commitment to free e-publication of financial statements in EU member states and suggests that Europe 2020 visions in this arena can become rather chimeras.

Keywords: *European e-Justice Portal, financial statements, publication.*

1. INTRODUCTION

The overlap of business and law brings a lot of issues and contradictions (Vivant, 2016) which modern European integration wants or needs to resolve. Although the EU is known for the permanent blurred distinction between historical truth and reality (Chirita, 2014), it is well established that it is firmly based upon the doctrine of the famous four freedoms of movement in the single internal market (Cvik & Pelikánová, 2016). The modern organization is more complex and dynamic (Piekarczyk, 2016) and in the case of the EU even more challenging. Indeed, the modern European integration is a puzzling phenomenon entailing a myriad of complicated processes in various fields (Večeřa, 2012) with the single internal market at the center. The EU proceeds according to its current ten year strategy, Europe 2020, attempts to develop the technological and other potentials of a European economy (Balcerzak, 2016a) and systematically pushes for the harmonization, if not unification, of the publication of certain key private business and law data from the private sphere with a high impact on both private and public spheres. This data might be critical for financial accounting, tax accounting and even managerial accounting (Jindřichovská & Kubíčková, 2016 and 2017) and both create or destroy a competitive advantage.

Indeed, since the 2008 crises, the EU has been working towards the free e-publication of financial statements and this endeavour has been partially mirrored by EU member states. Ultimately, it is highly relevant to scrutinize both the setting and daily operation of the common e-platform, European e-Justice portal, and in particular its section Business registers in member states. Boldly, the EU launched a platform which needs to be filled with data and connected to national data bases which include (or at least have to include) e-versions of financial statements of their businesses. This project can become a valuable source of information about businesses, especially their financial and accounting “health” and “shape”, provided both, European and

national, levels are managed. The legislative, strategic and technical measures need to be performed by the EU and EU member states, i.e. the EU basically has to create the structure and make sure that this structure is populated or at least linked to the data from EU member states and that this data becomes ultimately freely available. EU member states have to co-operate, make sure that their registers and registries include such data and share it in a standardized free access manner with others.

On the European level, the motivation and drive for digital business records interconnection became visible already at the beginning of the 2008 crises. The EU understood that the operation of the single market and the competitiveness of European business is critical, that digitalization is indispensable in the global society (Pelikánová, 2014) and that a real, concerted action by the EU in this respect is indispensable for the success of the modern European integration (Pelikánová, 2012). Hence, the EU legislative action in this field started right away in the crises setting, i.e. in 2009 with Directive 2009/101/EC of 16th September, 2009 on the coordination of safeguards which are required by Member States of companies (“Directive 2009”) and was reaffirmed in 2013 with the Directive 2013/34/EU of 26th June, 2013 on the annual financial statements, consolidated financial statements and related reports (“Directive 2013”). These two legislative instruments are integral parts of the ten year EU strategies, currently the strategy prepared by the Barroso Commission and implemented by the Barroso and Juncker Commissions, i.e. Europe 2020: A strategy for smart, sustainable and inclusive growth. COM(2010) 2020 final (“Europe 2020”). In addition to these legislative and strategic measures, the EU managed to address as well the technical side of this project and launched the European e-Justice portal.

At the EU member states’ level, the situation has demonstrated common points as well as diversities. The globalization and digitalization is acknowledged by all EU member states, but still these states share different social, political and economic traditions (Pelikánová, 2017) and ultimately each of them takes a unique approach to the publication of financial statements and to the access to such data. Indeed, the fundamental common law and continental law features reappear, along with doubts about whether the publication of financial statements and the free access to them will not ultimately hurt domestic businesses. In such a state of mind, the EU member states face up to the EU’s call to keep their registries and connected to the European e-Justice portal. How do they answer this call and is this platform really the electronic one-stop-shop for the publication of financial statements in the EU? How is the Czech Republic, with its Commercial Register, doing in this respect and this especially in the context of the recent re-codification of the Czech private law? Do we have full, partial or zero harmonization regarding the free access to e-versions of financial statements of Czech as well as other European businesses across the EU? Is this a reality or a myth? The answers to these questions testify not only about the e-publication of financial statements in the EU, but as well in general about the national attitude to the EU drive for transparency and digitalization.

2. DATA AND RESEARCH METHODS

In order to scientifically and academically address the static and dynamic reality of the electronic one-stop-shop for publication of financial statements in the EU, i.e. the setting and operation of the European e-Justice portal as a (alleged) source for an e-version of financial statements in the EU, an open minded selection and search of primary and secondary sources is indispensable. This involves a myriad of instruments and processes going from an exploration of the European e-Justice portal and related national registries and databases, a field search and observation over the literate description and teleological interpretation of legislative acts to academic materials from several EU member states (Pelikánová, 2017).

The cross-disciplinary and multi-jurisdictional nature demands the processing of the data yield by the indicated search by Meta-Analysis (Silverman, 2013), while using a holistic approach, case studies and critical comparison of laws and their interpretation and applications vis-à-vis to

a real and free access to all pertinent financial statements in a digital format. Since economic, legal and technical aspects are involved, the focus goes to both qualitative and quantitative data and entails deductive and inductive aspects of legal thinking (Matejka, 2013). Ultimately, the quantitative research and data are complemented by qualitative research, along with critical closing and commenting and refreshed by socratic questioning (Areeda, 1996).

Such a set of data and methods allows for systematically assessing the setting and operation of the mechanism of access to financial statements in their e-version, i.e. in the digital format, on the EU, national and, particularly, Czech level. Hence, it leads to the answer about the reality of electronic one-stop-shop for publication of financial statements in the EU and general comments on European integration along with suggestions for improvements.

3. E-PUBLICATION OF FINANCIAL STATEMENTS IN THE EU

The continental law jurisdictions have an inclination to formalism and to keeping central registers. Hence, the systems of Land registers, Business Registers, etc. are well developed and both the law and general public opinion endorse the duty to be registered and keep this registration updated. In recent decades, the business registration duty, especially vis-à-vis businesses and legal entities, has been expanded and these subjects have not only to file their establishment and incorporation documents and financial statements, but in addition these documents have to be posted in their e-version. The common law jurisdictions have an inclination to pragmatism and informalism and thus the idea of a central Business register and consequently the posting of all financial statement is not so developed. In addition, certain cultures and groups are more reluctant to keep central records and avoid making the financial statements of private subjects freely available to the whole world, including competitors.

Hence, it is highly relevant to overview the strategic and legal framework for the e-publication of financial statements provided by the harmonization, if not unification, desiring EU, to see how it is set technically and operates on the daily basis and analyze its Czech and other national subparts.

3.1 Strategic and legal framework for e-publication of financial statements of the EU

The post-Lisbon EU has both supranational and intergovernmental natures and has normative and other characteristics centered around the concept of the single market with significant institutional features and a competing interest group (Damro, 2012). EU law is neither a typical international law nor a typical federal or state law, it is a law challenging both the monist and dualist perception of the state, domestic, and national law. Further, EU law is integrated into national laws in a fierce and penetrative manner, behaving like an occupying authority on a foreign soil, by making use of a national procedural setting to directly incorporate and enforce its norms with the national jurisdiction of the EU member state (Azolai, 2011).

The constitutional setting of the post-Lisbon EU law consists of the Treaty on EU (“TEU”), Treaty on the functioning of EU (“TFEU”) and Charter of fundamental rights of the EU (“Charter”). According to them, the EU law is prepared, then proposed, made and applied according to one decade strategies, currently it is Europe 2020, which emerged in 2010 in the hope of overcoming economic, and other, crises and to improve the entire integration model while focusing on smart, sustainable and inclusive growth (Pelikánová, 2014). It is highly relevant to see the structure of the Europe 2020 in order to identify if and how the e-publication of financial statements in a rather unified and centralized manner is strategically perceived.

Table 1. Strategy Europe 2020 – overview with notes on the e-publication of financial statements

Priorities	Targets	Flagship Initiatives	Policies with Impact on the e-publication of finan. statements
Smart growth	75% working 3% GDP for R&D	A digital agenda Innovation Union Youth on move	Shaping digital market Knowledge for R&D -
Sustainable growth	20/20/20 climate 90% primary educ. 40% tertiary educ.	Resource efficient Industrial policy for global.	- Competitiveness
Inclusive growth	20 million less at poverty	Agenda for new skills No poverty	??? ???

Source: Prepared by authors based on Europe 2020 and http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/flagship-initiatives/index_en.htm

Regarding the strategic framework, Europe 2020 specifically names as one of its seven flagship initiatives “A digital agenda for Europe” which aims to speed up the roll-out of a high-speed internet and reap the benefits of a digital single market for households and firms. Another flagship is the “Innovation Union”, which (allegedly) addresses the help for innovative activity of enterprises which are far from being a spontaneous, market-based process (Pohulak-Żołędowska, 2016).

Europe 2020 recognizes both the importance of the digital society and underlines the importance of the effective and efficient employment of communication technologies as well as of on-line dissemination of knowledge. Hence, if financial statements are to be made public, then it needs to be done in the manner demanded by the Digital society, i.e. the single internal Digital market expects on-line and high-speed Internet accessible data. Further, Europe 2020 in its section about the exit from the crisis and the reform of financial systems underlines the importance of transparency. In addition, Europe 2020 strongly focusses on the competitiveness and fair value plus information for consumers and their economic interests. Therefore, it can be at least indirectly suggested, if not implied, that Europe 2020 is a strategy which endorses an interrelated e-publication of financial statements and a free access to it by a large public. At the same time, it would be remiss not to mention that Europe 2020 is very complex, focusses on areas outside of the Commission’s jurisdiction and which has but little to do with increasing competitiveness (Erixon, 2010) and strongly impacted by both formal and informal institutions (Pasimeni & Pasimeni, 2016). In addition, its implementation shows remaining, if not growing, differences between EU member states (Çolak & Ege, 2013) – e.g. the strategy index scores keep growing in Nordic states and stagnating, if not dropping, in PIGS states (Portugal, Italy, Greece, Spain). Indeed, the structural, indebtedness (Lajtkepova, 2016) and fiscal burden diversity (Balcerzak, 2016b) and various indicators show problems of the Europe 2020 setting as well as the insufficient efforts of many European economies, especially the most important ones (Balcerzak, 2015).

Regarding the legal framework, both primary and secondary sources of the EU law need to be explored. The primary sources, especially the constitutional trio, do not explicitly deal with particularities, nevertheless it can be argued that their inclination for the interrelated e-publication of financial statements can be detected. Pursuant to TEU, the EU shall work for a highly competitive social market economy while promoting scientific and technological advances (Art. 3). The TFEU includes a large number of provisions on the internal market, including provisions covering the right of establishment (Art. 49 et foll.), capital and payments (Art.63 et foll.) and even taxation (Art. 110 et foll.) and consumer protection (Art. 169). Further, TFEU specifically deals with economic cohesion (Art. 174 et foll.) and administrative cooperation (Art. 197). Finally, the TFEU includes not only rules for internal matters but as well external matters (Art. 205 et foll.). The charter incorporates the freedom to conduct a business (art.16), right to property (Art. 17), the consumer protection (Art. 38) and right to good administration (!!!) (Art. 41) along with the right of access to documents (Art. 42).

There are three secondary sources with the utmost importance for an interrelated e-publication of financial statements in the EU – (i) Directive 2009 in its consolidated version, i.e. especially after the amendment by the Directive 2012/17/EU of 13th June, 2012 on interconnection of registers, (ii) Directive 2013 and (iii) Commission implementing regulation (EU) 2015/884 of 8th June, 2015 establishing technical specifications and procedures required from the system of interconnection of registers established by Directive 2009 (“Regulation 2015”).

Directive 2009 states in its Preamble *“The coordination of national provisions concerning disclosure, the validity of obligations entered into by, and the nullity of, companies limited by shares or otherwise having limited liability is of special importance, particularly for the purpose of protecting the interests of third parties....Interested parties should be able to obtain from the register a copy of such documents and particulars by paper means as well as by electronic means...”*. Member states are ordered to take the measures required to ensure such a compulsory disclosure by companies and underlines that this disclosure includes *“the accounting documents for each financial year which are required to be published...”* (Art.2). Indeed, in each member state has to be opened a file in a register for each company (Art.3) and these registers have to keep electronic copies of documents and be interconnected (Art.3a and Art.3b). This interrelated system has to allow a free of charge exchange of information and the fee charged for obtaining documents cannot exceed administrative costs (Art.3c and Art.3d). Considering the current e-government and general digitalization, it is obvious that hardly a fee can be charged for creating, filing and sharing an e-document, such as e.g. an e-financial statement. In addition, the portal serving this platform for this interrelated system – European central platform (Art.4a) is offered by the Commission while using the website e-justice.europa.eu.

Directive 2013 avoids any potential doubts and its Preamble explicitly states *“(38) The annual financial statements of all undertakings to which this Directive applies should be published in accordance with Directive 2009/101/EC. ... (39) The Member States are strongly encouraged to develop electronic publication systems that allow undertakings to file accounting data, including statutory financial statements, only once and in a form that allows multiple users to access and use the data easily. With regard to the reporting of financial statements, the Commission is encouraged to explore means for a harmonised electronic format. Such systems should, however, not be burdensome to small and medium-sized undertakings. (40) The Members of the administrative, management and supervisory bodies of an undertaking should, as a minimum requirement, be collectively responsible to the undertaking for drawing up and publishing annual financial statements and management reports...”*.

The Regulation 2015 is a rather technical and operational document dealing with the Business Registers Interconnection System (“BRIS”) requiring e-communication via Web-services and while using Internet protocols, such as HTTPS, and standard communication protocols, such as Simple Object Access Protocol (“SOAP”). Further, the Regulation 2015 identifies security standards, methods of exchange and the list of data to be exchanged. Interestingly, it explicitly states that the BRIS service is 24/7 with an availability rate of at least 98% excluding scheduled maintenance.

Well, the strategic and legislative framework on the EU level is self-explanatory and the system of interconnected registers on the central EU platform while using the EU portal appears as clearly stated and ready to operate in the manner so everybody can, for a small, if any, charge access financial statements of European companies, if not even all European businesses. This is the theory, but what about the praxis? Do we really have an electronic one-stop-shop for e-publication of financial statements allowing to freely and cheaply access financial statements of European companies?

3.2 European e-Justice portal – electronic one-stop-shop for e-publication of financial statements in the EU

As stated above, the system of interconnected national registers, which have to keep as well financial statements, was legislatively set by the Directive 2009. Member states have to make up-to-

date information available to third parties which can rely on it, and this including the involved documents such as financial statements (Art.3a).

The Commission created an appropriate platform for it while using its portal, i.e. European e-Justice Portal. The European e-Justice portal uses even a sub-domain in the control of the EU (Pelikánová & MacGregor, 2015), e-justice.europa.eu, and thus belonging to the top level domain of the EU, TLD .eu (Pelikánová & MacGregor, 2016). Hence it is highly relevant to review the structure of this particular website and to closely scrutinize the provided intrarelated information. As demonstrated by Fig.1, the website is rather consumer friendly and allows the to make an initial choice for “Registers,” which leads to the link to “Business Registers”, particularly “Business registers in Member states.”

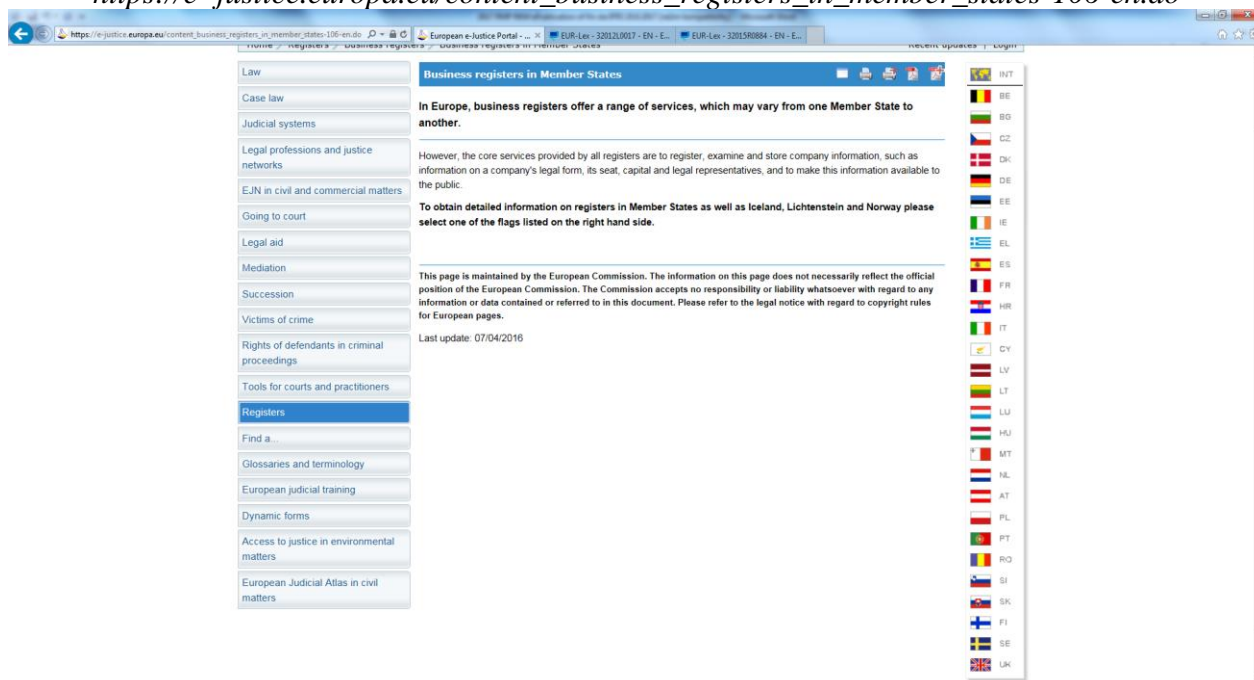
Figure 1. European e-Justice portal – <https://e-justice.europa.eu/>



Source: Prepared by authors based on European e-Justice portal (Print Screen)

As demonstrated by Figure 2, the choice of “Business registers in Member States” leads to a cross-roads, i.e. a list of all EU member states identified by their codes and flags. A click on each of these codes and flags redirects to the national business register. Thus, regarding the interconnection of EU business registers, the EU and Commission did their job (at least from June 2017 when this subpart of the webpage was completed) and further than that it is up to the member states and their national registers as to if and what they provide.

Figure 2. European e-Justice portal –
https://e-justice.europa.eu/content_business_registers_in_member_states-106-en.do



Source: Prepared by authors based on European e-Justice portal (Print Screen)

Despite a rather robust and impressive strategic and legislative setting, the European e-Justice Portal pragmatically states that *“In Europe, business registers offer a range of services, which may vary from one Member State to another.”* This is perhaps deplorable, but still understandable. Slightly less acceptable is a total disclaimer provided by the Commission and the EU as such, i.e. the statement *“This page is maintained by the European Commission. The information on this page does not necessarily reflect the official position of the European Commission. The Commission accepts no responsibility or liability whatsoever with regard to any information or data contained or referred to in this document.”* Well, then after all, the data provided is not 100% reliable and there is not a guarantee vis-à-vis financial statements offered via e-publication by the European e-Justice Portal and its BRIS. The next question is even more burning – do we really get an e-version of financial statements via BRIS? Table 2, below, provides an overview of www offered by the European e-Justice portal (<https://e-justice.europa.eu/home.do?action=home&plang=en>), specifically its Wepage providing the list and links to Websites of national Business registers (https://e-justice.europa.eu/content_business_registers_in_member_states-106-en.do). Further, it indicates whether these Websites have at least a simplified English version, whether they offer an e-version of financial statements and, if yes, then for how much. In order to determine the price, prices list offered by these Websites were used and, in the case of the absence of such a list, there was used the “Coca-Cola” company. In other words the price for an e-version of financial statements was identified by the general price list and, in its absence by a mere access to the Coca-cola file with the request for the financial statement to which the system replied by asking a concrete price for such a pdf, typically between EUR 2 and 20.

Table 2. European e-Justice portal – e-Publication and free access to financial statements

	National Business Register – URL/www	English	e-Access to financial statements
BE	http://kbopub.economie.fgov.be/kbopub/zoeknummerform.html?lang=en	Yes	Should be, but not too many filings in “Central des bilans”
BG	http://www.brra.bg/	Yes	One-time or subscription fee of BGN 30 000 and still probably not access to financial statements
CZ	http://www.justice.cz/Justice2/Uvod/uvod.aspx	No	Yes, free of charge
DK	https://datacvr.virk.dk/data/	Yes	Yes, free of charge
DE	https://www.handelsregister.de/rpweb/welcome.do	Yes	Partially, for a fee of EUR 2-5
EE	http://www.rik.ee/	Yes	Yes, for a fee of EUR 2
IE	https://www.cro.ie/	Yes	Yes, for a fee of EUR 2-4
EL	https://www.businessregistry.gr/Publicity.aspx	No	??? Αν συμπληρωθούν πάνω από ένα κριτήρια, θα πρέπει να ικανοποιούνται όλα για να επιστραφεί η επιχείρηση σαν αποτέλεσμα.
ES	https://www.registradores.org/registroonline/home.seam http://www.registradores.org/	No	Partially, for a fee of EUR 1-24
FR	https://www.infogreffe.fr/	Yes	Yes, for a fee of EUR 3-10
HR	https://sudreg.pravosudje.hr/registar/f?p=150:1	No	Yes, free of charge
IT	http://www.registroimprese.it/home	Yes	No, upon a request and for a fee of EUR 3 to 10 and perhaps still available is only a company profile or registration report or dossier (shareholder agreements)
CY	https://efiling.drcor.mcit.gov.cy/DrCorPublic/SearchForm.aspx?sc=1&cultureInfo=en-AU	Yes	Allegedly for a fee.
LV	http://www.ur.gov.lv/	No	Probably no, and if – then EUR 5-9.
LT	http://www.registrucentras.lt/en/	Yes	Yes, for a fee (membership needed).
LU	https://www.rcsl.lu/mjrscs/jsp/IndexActionNotSecured.action?FROM_LANGUAGE_CHANGE=true&loop=2&time=1503480445028	Yes	Allegedly for a fee.
HU	http://www.e-cegjegyzek.hu/	No	Allegedly for a fee.
MT	https://registry.mfsa.com.mt/ROC/ http://rocsupport.mfsa.com.mt/pages/Publications.aspx	Yes	Allegedly for a fee.
NL	https://www.kvk.nl/	No	Yes, for a fee of EUR 3-5.
AT	https://www.justiz.gv.at/web2013/html/default/8ab4a8a422985de30122a90fc2ca620b.de.html	No	The entire access is for a fee and perhaps it is possible to get as well financial statements.
PL	http://bip.ms.gov.pl/	No	Probably no.
PT	https://bde.portaldocidadao.pt/evo/Templates/GeralEO.aspx?NRNOD	Yes	Yes, the subscription costs EUR 25.

	EGUID={0AB79FDE-92FE-4BEF-84CE-962D954F4D59}		
RO	https://portal.onrc.ro/ONRCPortalWeb/ONRCPortal.portal	No	Probably no. Anyway, the registration of the user and payment are necessary.
SI	https://www.ajpes.si/prs/Default.asp?language=english https://www.ajpes.si/jolp/	Yes	Probably yes and even free of charge, but necessary to login.
SK	http://www.orsr.sk/Default.asp?lan=en	Yes	No.
FI	https://www.prh.fi/en/kaupparekisteri.html	Yes	Yes, for a fee of EUR 5-10.
SE	http://www.bolagsverket.se/en	Yes	Yes, for a fee of SEK 50 + registration.
UK	https://www.gov.uk/get-information-about-a-company	Yes	Yes, free of charge.

Source: Prepared by authors based on European e-Justice portal

Despite robust rhetoric and a matching strategic and legal framework, the reality faced by subjects desiring to see and obtain the e-version of a financial statement of a European business via European e-Justice portal is not that bright. Firstly, several national Business Registries do not have a Website, at least in a basic demo English version and this makes the search challenging (Hungary). If no latin alphabet is used, then the search is, basically, totally impossible (Greece). Secondly, only some national Business registers post online financial statements. Thirdly, these postings are often accessible only if a registration is done and/or a one-time or membership fee is paid. In sum, only Great Britain and Denmark provide a customer friendly English Business Register Website with a free of charge access to the e-version of financial statements. Few other countries provide as well a free of charge access to the e-version of financial statements, but the search must be done intuitively, i.e. no English search mask is provided (Czech Republic, Croatia).

Naturally, this overview of the list of national Business registers and their data is the not the unique source of information and e.g. the European Business Register (“EBR”) (<http://www.ebr.org/>) as well as other private or semi-private networks and registers can offer a paid unofficial access to similar data from some EU member states, including e-versions of financial statements. In other words, due to a strong demand for the e-version of financial statements, the EBR network was created and is even referred to by the European e-Justice portal. EBR has 13 member countries and provides data from Business registers of 26 EU member states. The prices for financial statements depends upon the provider and the country of the Business register, see Table 3.

Table 3. EBR – overview of prices in EUR for the e-version of financial statements from selected countries

AT	DE	DK	ES	EE	FI	GB	IE	IT	LT	LU	LV	SE	SI
4-11	12-16	1-7	9-17	6	7-9	3	5	5	5	1-5	5-13	8-10	10-12

Source: Prepared by authors based on EBR <https://www.ebr.lv/en/> and https://www.rcsl.lu/mjrsc/jsp/webapp/static/mjrsc/fr/mjrsc/tarifs.html?FROM_MENU=true&time=1425022237705&pageTitle=menu.item.geninfoprices¤tMenuLabel=menu.item.geninfoprices

The EU wants digitalization and transparency and has provided a legal and strategic framework for connected data about European businesses, including their e-financial statements. However, again national particularities seem to prevail and the readiness and willingness of EU member states is dramatically different in this respect. Boldly, certain EU member states make their businesses file e-financial statements and freely make them available via the Internet, while other EU member states are more reluctant and/or identification or payment demanding. The fact that e-financial

statements of Danish and British businesses are freely and easily accessible while e-financial statements about Greece businesses are basically not available (neither via national Business register nor via EBR) is self-explanatory. The paradigm about PIGS from the EU emerges here again. However, the situation is even more complex, because there are even big differences between EU member states making easily and cheaply e-financial statement available. These differences consist not in the strategic and legal setting, but in their application. Simply put, certain EU member states do not really enforce the filing of financial statement and their free online access to the e-version of financial statements is just illusory. Since the Czech Republic is one of the very few EU member states offering a free access to e-financial statements, it is worthy to perform a case study about the legal setting and operation of the national Business register of the Czech Republic, the Czech Commercial Register.

3.3 Czech Commercial Register and its contribution to the European e-Justice portal regarding e-publication of financial statements

The recent Czech re-codification of the Private law brought forth a new substantial Civil Code which includes, among other features, provisions formerly included in other Acts such as the Commercial Code, which vanished. The new Civil Code provides for the registration of legal entities into a public register (Art. 120) and also regulates annual reports and the structure of financial statements (Art. 416). Naturally, the new Civil Code is a *lex generalis* and thus for the more detailed regulation of the publication of financial statements, *leges speciales* need to be explored. Act. 304/2013 Coll., on public registers includes Part 6 on Commercial Register (Art. 42 et foll.) which does not deal specifically with financial statements. These are explicitly covered within the regulation of the Collection of documents (Art. 66 et foll.). The Commercial Registry, along with the Collection of documents, is maintained by the Regional court of the seat of the business (Art. 75 et foll.). The sanctions for the lack of submission of financial statements are as well specifically mentioned – a fine up to CZK 100 000 for not filing and, in the case of a persistent (repetitive) decline to file financial statements, even the liquidation and winding-up of the business can be ordered (Art. 104 et foll.). In addition, members of the statutory authority (e.g., members of Board of Directors) of a business not filing financial statements are deemed to breach their duty of a due care and thus are personally liable (Art. 106). Act No. 563/1991 Coll., on accounting, provides legal and technical requirements regarding the format and content of these financial statements. This Act has been amended 12 times, implements among else Directive 2013 and uses almost all options for simplifications or exemptions allowed by this Directive to reduce the administrative burden for SMEs (Bušová et al., 2016).

This rather self-explanatory legislative substantive and partially even procedural setting is matched by academia, which has no doubts about the compulsory filing and e-posting of financial statements (Koch, 2017 & Kropáčová, 2016). The case law fully endorses this interpretation and application and the Constitutional Court consistently confirms that the duty to file financial statements is in compliance with the constitutional order and that filing of full financial statements and their e-publication are neither a breach of human rights and fundamental freedoms nor a breach of the business secret, per which see Constitutional Court judgments, deliberations and rulings in File No. I. ÚS 833/08 from 23rd May, 2008 or in File No. II. ÚS 2535/12 from 27th August, 2013. Even more interesting is the deliberation of the Constitutional Court in File No. II. ÚS 2984/14 from 22nd April, 2015 which basically confirmed the fine of CZK 5000 for “blackening” data in financial statements, i.e. the Constitutional Court rejected the constitutional appeal made by a Ltd Company which filed financial statements in which certain figures were blackened (invisible) and declined the request of the Registry court to provide clean and legible financial statements while explaining that this data is part of its business secret. In addition, in this decision the Constitutional Court explicitly underlined that the Act. 304/2013 Coll., on public registers does not mention any exception or liberation from the duty to file and made publicly available financial statements with all visible data. This trend was further re-affirmed by II.ÚS 2960/15 from 26th April, 2016 and in I.ÚS 4145/16 from 15th February, 2017. Interestingly, basically in all mentioned cases Ltds did not

want to file the full version of balance sheets and of income statements, to obtain a reminder request from the Registry courts and thereafter a fine of CZK 5000 – 10 000 was imposed and later on confirmed by courts. Nevertheless, this is merely the tip of the iceberg, because there are just a few cases ending with the top judicial review.

Therefore, it is vital to check the real status quo, namely to access the Czech Commercial Register and its Collection of documents and check whether the Czech legal duty to file financial statements is observed. Since, already in the previous study, the company Coca-cola was used, the selection for this random and rather merely indicative case study entails thirty (a minimum sample for statistical purposes) companies with the business name „Coc...“.. In order to achieve at least a certain homogeneity of the examined subjects, only „prospering“ Ltd. companies were included, i.e. no other subjects than Ltds were included and even Ltds in liquidation or bankruptcy were excluded.

Table 4. Czech Commercial Register – Ltd. Companies “Coc...”, their Id No. and financial statements filed with the Commercial register and published online

Business name	Identification Number	Filled financial statements for Yr (older documents might not be digitalized yet)
COCTAIL & PARTY s.r.o.	25847015	2008-2014
COCCINELLA CAFFE, s.r.o.	01435744	2013-2014, 2016
COCO production s.r.o.	03130959	2015
cocodecor s.r.o.	28830083	2012-2014
Cocktails & Delices s.r.o.	27905110	None!!!
cocotoni s.r.o.	26135396	2001, 2006-2008
Cocoon hair, spol. s r.o.	29033586	None!!!
Coca Clicks s.r.o.	28884744	2014 and 2016
COHECAR s.r.o.	01598881	None!!!
CO&co SERVICES a. s.	44268149	None!!!
Cocktail Media s.r.o.	27166589	2009-2015
COCINA s.r.o.	28088450	2008-2013
COCODRILO s.r.o.	27439691	2006-2015
COCOMORE.CZ, s.r.o.	28163061	None!!!
CO&co Advisors s.r.o.	28162781	2007-2016
COCOOCO s. r. o.	26008190	2004-2007
COCTING, export-import s.r.o.	26346524	2010-2016
CO-COMPANY, MB s.r.o.	26320592	None!!!
Cocoon, s.r.o.	25079484	1996-2007 and 2015-2016
COCO TRADE s. r. o.	29277078	2011-2015
COCKTAIL video s.r.o.	61456420	None!!!
COCO BONGO s.r.o.	29307261	None!!!
CO&co SE	24685984	None!!!
CO&co SALES SE	24194786	None!!!
COCO PRAHA s.r.o.	24291544	None!!!
CO CORPORATE s.r.o.	29364787	None!!!
Coca-Cola HBC Česko a Slovensko, s.r.o.	41189698	2001-2015
Cocktail Tapas Café s.r.o.	02521687	None!!!
Coca-Cola Česká Republika s.r.o.	25111299	2000-2017
"Cocos Co. s.r.o."	25540149	2009-2013

Source: Prepared by authors based on <http://portal.justice.cz/Justice2/Uvod/uvod.aspx>

Table 4 reveals that 12 out of 30 Ltds have never filed financial statements. Even assuming that occasional exceptions and exemptions might exist or be allowed, still the number of chronic non-filers of financial statements is very high. It appears to be very exceptional to see a Ltd. company filling regularly their financial statements and thus allowing their digitalization. Considering the strategic and legislative framework, the passivity of the Regional Courts, entrusted with the agenda of the Commercial Register, that seems amazing and contributing to a vacuum of law and a competitive unfairness. Certain businesses open their „accounting“ cards to the entire universe, while other businesses keep them „close to their chest“ in total secrecy.

4. CONCLUSION

The e-publication of financial statements is not the reality in the current EU. Despite a rather encouraging strategic and legislative setting in the EU and the setting of the European e-justice portal, there is not any one-stop-shop for a free access to financial statements. Certainly, the official EU portal along with other public, semi-public and private platforms, such as BRIS, offers an e-version of financial statements, but not of all and not from all EU member states. In addition, access might be payable and for a payment, ‘comes with a price’. This total diversity is caused by the mere fact that the EU member states resist any unification in this arena and their commitment to Europe 2020, and in particular to the e-publication of financial statements, often ends by only allowing the connection between their national Business register and the platform or other EU systems. There are just a few EU member states ordering their businesses to file financial statements and allow their e-publication, and even these *prima facie* progressive states often sink in the passivity regarding the enforcement.

In general, EU member states do not answer the clarion call for a big e-sharing of financial statements and do not want to push their national Business Registers to extract more data from subjects in their competence and make them freely available in the digital version. Certain EU member states even seem to sabotage this entire project (PIGS countries, especially Greece), while others, contrarily, do almost a perfect job (Scandinavia, especially Denmark). Certain countries have a big dichotomy between the theory and praxis, i.e. the law says something but something else happens and no consequences for this lack of application and enforcement emerge (Czech Republic).

We have a detectable, but incomplete, harmonization in this area. Fundamental law concepts entail the rule of law, universality, enforceability and no discrimination. All of them fail in this arena and it is highly advisable to re-think the entire project. This reconsideration should be done while observing the global universe and overcompetitive markets. The EU should be pragmatic, stick within its competencies and keep an open-minded dialogue with EU member states, even with Europeans. Perhaps, the EU should first analyze and assess whether the e-publication of financial statements of European businesses is pro- or anti-competitive. In the case of a positive answer, the mentioned multi-stakeholder dialogue should be launched. Bureaucratic ordering and planning from Brussels is not always good and even if theoretically yes, then worthless because EU member states can sabotage the implementation and enforcement. The EU should spend its energy on real and good projects and not on chasing chimeras, and EU member states should show more eagerness to cooperate in these projects, naturally provided they were previously discussed with them. This is the business and democratic reality of the 21st century.

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EVOLUTION OF FISCAL INTERVENTION – EVIDENCE FROM EU COUNTRIES

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Abstract

The economic downward of the last years contributed to the reduction of the tax base and adjustment of the tax burden in order to mitigate the effects of the crisis. This statement gives us an impulse to take consideration on changes in the level of fiscal intervention caused by the discretionary decisions of the authorities amongst EU countries. The fiscal authorities sought for the consolidation of public finances reaching for income instruments within a continued fiscal policy. Naturally therefore the question should be asked, how much discretionary decisions influenced the changes in the level of fiscalism which is recognizes as fiscal intervention in countries. It appears that the taken measures have had a positive impact on changes in the fiscal intervention of the countries, reducing it. The subject of the study is therefore to analyze the changes of fiscalism level in the European Union countries in pre- and post-crisis period. The adopted test period covers the years 2004–2015. However, due to limited access to the data, in some cases the analysis period has been shortened.

Keywords: *fiscalism, quantitative measures, quality measures, tax gap*

1. INTRODUCTION

The global financial crisis has caused a need for specific fiscal intervention which aimed at not only stimulating demand, but also improving the financial situation of European Union countries. Even though in many countries, it was decided to carry out fiscal consolidation, however, it was different both in scale, adopted solutions and the variation in time.

From today's perspective it can be asked whether the applied discretionary fiscal policy led to an improvement in the financial situation of European Union countries? The second question is whether the taken actions caused the change in the level of fiscalism in these countries?

The article is aimed to determine the extent to which the consolidation measures taken by the fiscal authorities contributed to changes in the level of fiscal intervention in particular European Union countries. This aim is accompanied by the following hypothesis: the consolidation measures changed significantly the level of fiscal intervention in European Union countries.

The work is in chronological order. The first chapter was dedicated to explaining the essence and the factors determining the scope of fiscal intervention and identifying its possible measures both in terms of quantity and quality. Whereas, the analysis of empirical data related to forming chosen measures of fiscal intervention was carried out in the second chapter. This chapter also includes the assessment of the changes in the level of fiscalism in the particular EU countries. The adopted test period covers the years 2004–2015. However, due to limited access to the data, in some cases the analysis period has been shortened.

2. THE ESSENCE OF FISCAL INTERVENTION

Fiscal intervention, interchangeably called fiscalism, is one of the fundamental issues of fiscal policy. Its scope is determined by the redistribution framework of national income by the public sector. It is also a measure of the fiscal burden of society. At the same time, we can notice the continuous controversy about its optimum level. In theory, on one hand it is determined by the need to fulfil the function of the state, the need for regulation of some social life spheres, and on the other

the desire to maintain rational taxation. In practice, however, it is extremely difficult to get a definite answer. Certainly, it should be correlated with the achieved level of development and prosperity of the country.

It should be emphasized here that the issue of appropriate fiscal intervention is connected with important topics, often described in the subject literature and concerning the role of fiscal policy in the pursuit of macroeconomic stability (Silva and Motta, 2016). Next, economists also indicate: tax shifting (The concept, 2016), crowding out private spending by the public sector (Owsiak, 2014), fiscal – redistributive gap (Lubińska, 2012), and finally reducing the fiscal discipline (*noncompliance*) (Dubin, 2012). This can be though the consequence arising from the specific – in this case it seems – excessive level of fiscalism.

According to Owsiak (2006), it is very difficult to define the essence of rational fiscal intervention. Such a definition would be at least imprecise because the fact whether public authorities act rationally with respect to taxpayers and the economy is connected with many conditions, for example the state of the economy and the quality of life of the population. This author expresses a conviction that a rational fiscalism manifests itself especially in the fact that imposed taxes do not reduce the tendency to save and do not cause the decline in the supply of money capital. While allegedly excessive fiscal intervention and the related need to limit the role of the state in the economy presented a serious challenge in particular for countries that are at the initial stage of economic transformation. This resulted from the conviction that the market mechanism not functioning sufficiently, efficiently and effectively, led to getting economically unjustified financial benefits of certain social groups. Whereas the application of market rules in areas such as health or education could have serious consequences for those whose low incomes would constitute a barrier to obtaining certain benefits. The issue of fiscal intervention, their scale and the consequences it leads to is equally essential, also in the case of highly developed countries. Excessive fiscalism can lead to the escape from the tax, because in the social opinion the taxation border indicated by the Laffer curve was crossed. This problem is no less important, due to the sustained annual losses of billions connected with tax fraud committed with the value added tax in the European Union (VAT Gap, 2016)¹.

To assess the level of fiscal intervention both quantitative and qualitative measurements are applied. Among quantitative measures at least three must be distinguished, which are essential due to the complexity and usefulness in analytics and international comparisons. These are:

- fiscalism index which is the ratio of public revenue to GDP;
- allocation index which determines the ratio of public expenditure to GDP;
- level of covering public expenditure by public revenue.

The high level of fiscal intervention will thus constitute a large share of both public revenues and public expenditure in GDP. Whereas, high budget deficit means a lower level of covering expenditure with revenues and thus lower fiscalism.

The assessment of the scope of state fiscal intervention can be also conducted on the basis of the following data: shaping the relation of tax revenue to GDP; forming the tax scale; the amount of tax and parafiscal charges; the number and kind of taxes in force in the tax system; the number and kind of applied tax preferences; the amount of tax-free sum and its changes over time; the amount of the tax gap (Zidkova, 2014); the size and the pace of changes in the grey market; the amount of tax debt (arrears) and the pace of change.

Whereas the qualitative assessment of fiscal intervention is based at least on the analysis of the quality of law tax and adopted system of computing taxes.

It should be noted here however, that the degree of fiscal intervention is primarily due to the adopted economic doctrine, and within its framework applicable system solutions. The scope of state intervention will also vary depending on the economic situation of the country. The recent experience of the crisis shows that the role of fiscal policy in a bid to achieve macroeconomic stability was once again considered important. However according to Silva and Motta (2016) this

¹ According to estimates of the European Commission dated 6 September 2016 the amount of lost revenue from VAT in 2014 amounted to nearly 160 billion euros.

policy was described as “outdated”. In the end also, the scope of fiscal intervention may be the result of a change of policy.

Because the specific boundaries for the increase in the degree of fiscalism determine the fiscal rules laid down in the Treaty of Maastricht, hence the system solutions adopted in the field of public expenditure are important in the evaluation of the extent of fiscal intervention. They determine not only the amount, but the structure of these expenditures. Inefficient management of public resources, including: the lack of prioritization of expenditure, rigid nature of the budget, improper way of expenditure planning are just some of the weaknesses of the system leading to increased budgetary imbalances, which coincidentally is one of the measures of fiscal intervention. In this context, the attention should also be paid to the degree of dispersion of public funds between entities of public finance sector, as well as the consumption possibilities of these units. The funding nature of public expenditure was noted by A. Moździerz. The author proves that until 2006 the public expenditure incurred by state target funds in Poland exceeded the amount of the expenditure of the state budget (2009). This situation resulted from the crediting possibility of these entities.

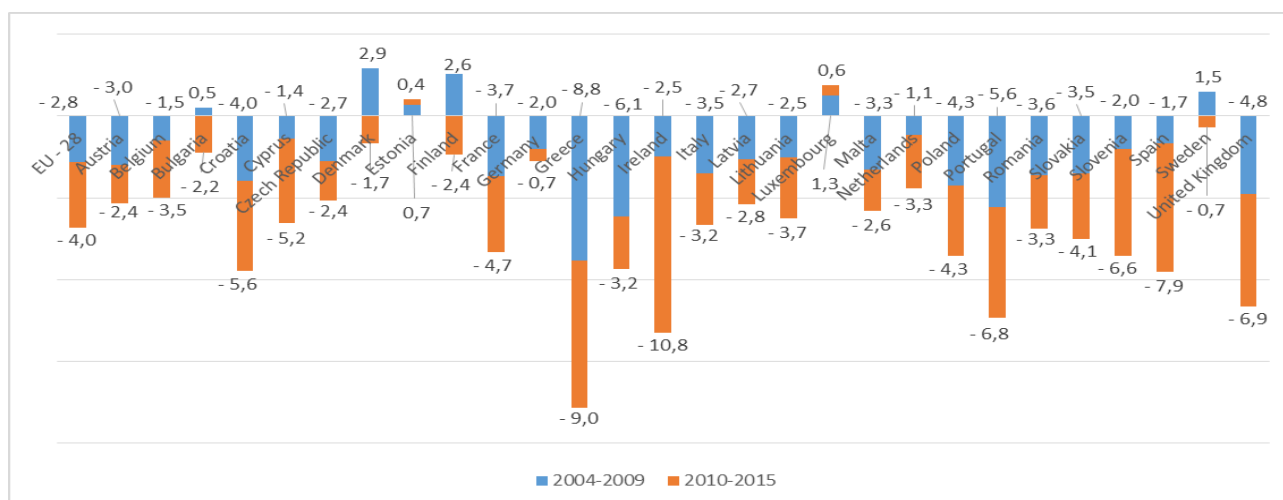
The information provided indicates the fact that the concept of fiscal intervention is extremely extensive. Certainly, the factors that determine it were not sufficiently presented. It can be noted, however, that the assessment of the level of fiscalism often depends on the feelings and opinions in society which too often are not based on the substantial diagnosis of the situation. An example of this might be expressing an opinion about the amount of tax based on nominal tax rates. However the real level of burden is determined by the effective tax rate, which can vary significantly from the statutory rate of taxation. This conclusion follows from just assessing the amount of PIT rates (nominal and effective) applicable for example in Austria and Slovenia. In these countries, in 2015 the highest PIT rate was 50%. While the level of effective taxation fluctuated around respectively 16.8% and 11.2% (Taxation trends, 2015).

In the next chapter, the analysis will be carried out of the level of fiscal intervention based on selected measures of fiscal intervention.

3. THE LEVEL OF FISCAL INTERVENTION IN THE EU COUNTRIES

The taken measures are part of the process of fiscal consolidation, in which the income tools were used and among them changes in tax rates and expenditure, for example employment reductions (Kickert et al., 2015 and Taxation trends 2015). Recently, the instrument to support intelligent fiscal consolidation is also a cyclical spending review performed by the fiscal authorities of individual countries. Its purpose is to increase the fiscal space to finance new assignments (Analysis of flexibility, 2015 and Review of spending, 2015).

As practice shows, the consolidation needs vary greatly in individual countries. It is evidenced by the budget deficit, which as previously mentioned is one of the measures aimed at assessing the level of fiscal intervention. So in the post-crisis period, i.e. in the years 2010–2015 the deficit budget in the EU counted as a whole in relation to GDP, comparing with the years 2004–2009, increased by more than 1 p.p. This means that in most countries the negative balance in the budget deepened. The imbalance declined only in a small group of countries at that time. They are: Hungary (2.9 p.p.), Germany (1.3 p.p.), Malta (0.7 p.p.), Austria (0.6 p.p.), Romania (0.3 p.p.) and the Czech Republic and Italy (0.3 p.p.). In other countries, the trend was reversed. The greatest deficit rose in Slovenia (8.6 p.p.), Ireland (8.3 p.p.) and Spain (6.2 p.p.). What is the most interesting that the state of public finance of these countries before crisis was similar. In every country financial situation was rather good. The surplus in public budget was noted by Spain and Ireland. Financial situation in Slovenia wasn't worse. There was rather small deficits. The data is shown in Figure 1.

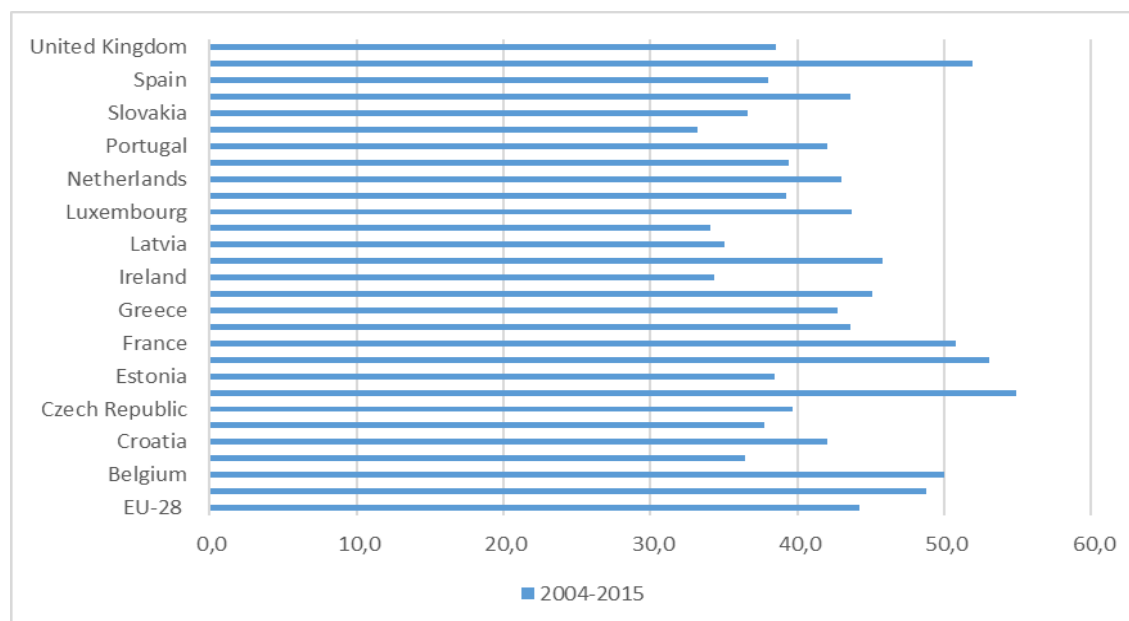
*Figure 1. The General Government deficit in the EU countries, 2004–2015 (% of GDP)**

Legend (*) – the recognition of the annual average.

Source: <http://ec.europa.eu/eurostat/data/database>, 31.05.2017

The income in some countries significantly decreased. Meanwhile, the rate of fiscalism reflecting the relation of public revenues to GDP in the EU in the period 2004–2015 remained on average per year at 44%. However, from 2013 onwards it exceeded 45% of GDP. Comparison of the level of fiscalism among the so-called “old EU members” to the group of so-called “new EU members” shows, that the level of this indicator throughout the whole study period differed significantly. In the first group it oscillates around 45% of GDP. Among the new member states it is at least 5 p.p. lower and not exceeds 40%. This may be the result of the flat-rate tax, which dominates among this group of countries.

The highest average annual level of fiscalism significantly exceeding the EU average applies to Denmark (54.9%), Finland (53%), Sweden (51.9%) as well as France (50.8%) and Belgium (50%). Whereas, the lowest level of tax burden can be observed in Romania, it amounts to 33%, and also in Lithuania (34.1%) and Ireland (34.4%). Data was presented in Figure 2.

*Figure 2. Fiscalism index as % of GDP in the EU countries, 2004–2015**

Legend (*) – the recognition of the annual average.

Source: <http://ec.europa.eu/eurostat/data/database>, 31.04.2017

In whole period the analysed measure was subject to slight fluctuations. In the years 2010–2015 fiscalism index raised 1 p.p. in relation to the previous year. In the case of the euro zone the index changes were higher and amounted to an average of 1.6 p.p. per year. Whereas, the comparison of changes in the fiscalism level in individual countries, with respect to the sub-periods 2004–2009 and 2010–2015 shows that the situation was not identical. In Greece, fiscalism has increased to the greatest extent i.e. more than 6 p.p. Presumably, the economic crisis and tragical financial situation have had the greatest impact on fiscalism in this country. Since 2009 there was a dramatic downward in production. Moreover throughout the decade of the 90's, there was a high public debt ratio which oscillated around 100% of GDP. In the following years, the financial situation has been steadily worsening. In other countries the change in the index was much smaller. Data was presented in table 1.

Table 1. Changes in level of fiscalism in the EU countries

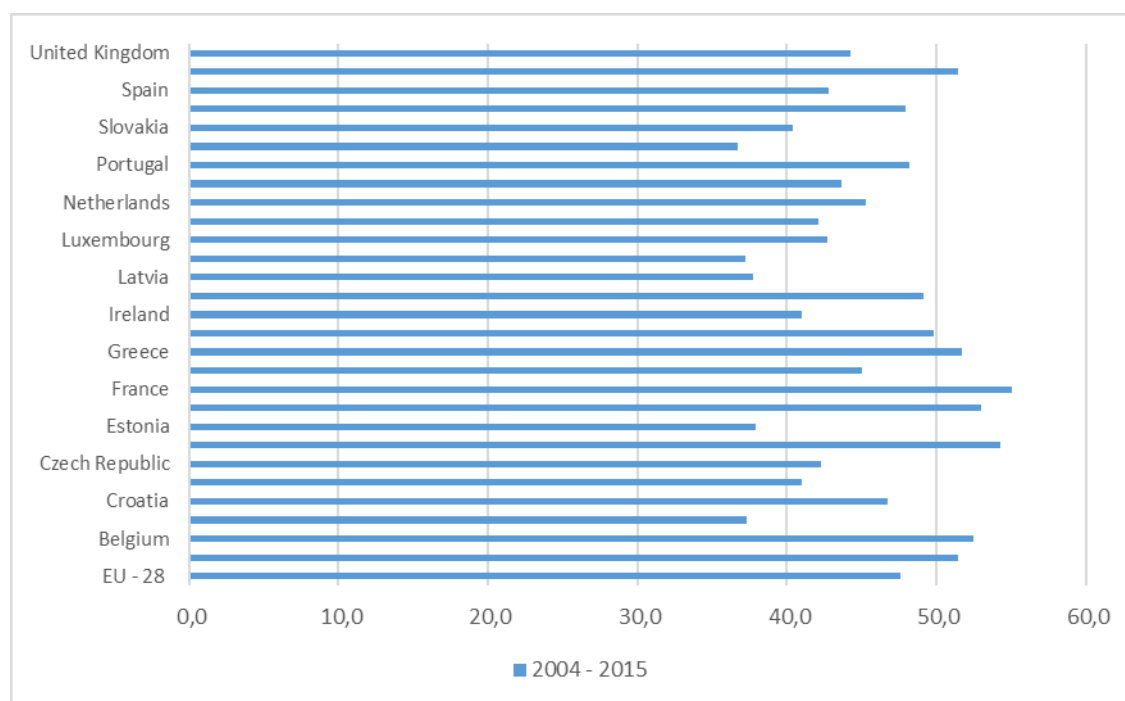
fiscalism index, which rose by 2 p.p. and more	<ul style="list-style-type: none"> • Italy (2.8 p.p.), • Hungary (2.7 p.p.), • Slovakia (2.6 p.p.), • Portugal (2.5 p.p.), • Belgium (2.4 p.p.), • France (2.3 p.p.), • Finland (2.1 p.p.), • Czech Republic and Latvia (2.0 p.p.).
increase of the studied measure, but not exceeding 2 p.p.	Slovenia (1.6 p.p.) and Estonia (1.5 p.p.);
increase of the index not exceeding 1 p.p.	<ul style="list-style-type: none"> • Austria and Germany (0.9 p.p.), • Malta (0.8 p.p.), • the Netherlands and Romania (0.6 p.p.), • Luxembourg (0.5 p.p.), • Denmark and the UK (0.3 p.p.), • Croatia (0.2 p.p.).

Source: own calculations

In seven EU countries the level of fiscalism decreased in the period 2010–2015 compared to the period 2004–2009. The greatest extent was in Sweden (2.5 p.p.), followed by Bulgaria (2.2 p.p.), Ireland and Poland (1.5 p.p.). In Spain, fiscalism decreased by less than 1 p.p. Similarly, in Lithuania and Cyprus, the changes were insignificant and amounted to 0.3 p.p. and 0.2 p.p.

Limiting to the analysis of the fiscalism index does not entirely reflect the scope of fiscal intervention. It is therefore necessary to assess the changes in the amount of allocation index. And so, throughout the whole period considered, the ratio of public expenditure to GDP in the EU has been an average annual rate of 47.6%. In the euro area, this ratio exceeded 48%. The differences are visible in the division of UE countries – 15 and new EU members. In the first group, the average annual level of this ratio is 48.5% of GDP. Whereas, among the new Community countries it is nearly 7 p.p. lower and amounts to 41.6% of GDP. The highest average annual level of allocation index exceeding the EU average, applies to France (55%), Denmark (54.3%), Finland (53%), Belgium (52.5%) and Greece (51.7%), Sweden (51.5%) and Austria (51.4%). In addition, the lowest level of this measure can be observed in Romania, 36.7%, Lithuania and Bulgaria (37.3%), and also Latvia and Estonia, respectively 37.8% and 37.9%. In other countries, the allocation index exceeds 40% of GDP. Data are presented in Figure 3.

Figure 3. Allocation index as % of GDP in the European Union countries, 2004–2015*



Legend (*) - the recognition of the annual average.

Source: <http://ec.europa.eu/eurostat/data/database>, 31.04.2017

As we can observe, the allocation index was subject to considerable fluctuations. Particularly noticeable is the high growth in the post-crisis period i.e. 2009, 2012. It may be noted, moreover, that both in 2009 and in 2010 the level of this index rose to 50% of GDP. It has not reached such level in any other period. The comparison of changes in index level over the period 2010–2015 with the years 2004–2009 shows a significant increase of this measure, which reached 2 p.p. In particular countries the situation was significantly diverse. Allocation index increased the most in Finland i.e. more than 7 p.p. Moreover:

- a significant increase in this measure, exceeding 6 p.p., can be observed in Ireland (6.8 p.p.), Greece (6.6 p.p.) and Slovenia (6.2 p.p.);
- in Spain the allocation index increased by 5.2 p.p.;
- in Denmark and Belgium the increase amounted to 4.9 p.p. and 4.5 p.p.;
- next group of countries includes those in which a change of government expenditure to GDP fluctuated slightly lower, and they are: Portugal (3.7 p.p.), Cyprus (3.6 p.p.), France (3.4 p.p.), and also Slovakia (3.2 p.p.);
- in the Netherlands, Italy and also the UK and Latvia changes in the index remained at a similar level and amounted to 2.8 p.p., 2.5 p.p., 2.4 p.p. and 2.1 p.p.;
- an increase in the observed relation exceeding 1 p.p. applies to: Croatia, Czech Republic and Estonia (1.8 p.p.) as well as Luxembourg (1.2 p.p.);
- the lowest increase in this measure can be recorded in Lithuania (0.9 p.p.), Bulgaria (0.6 p.p.) and in Austria (0.3 p.p.), Romania (0.2 p.p.) and Malta (0.1 p.p.).

Only in four EU countries, the level of fiscalism measured by the allocation index decreased. Among them are: Poland (-1.3 p.p.), Sweden (-0.4 p.p.) and also Germany (-0.3 p.p.) and Hungary (-0.2 p.p.).

The assessment of fiscalism can be clarified with analysis of data on the amount of effective taxation and its changes over time. The effective tax rate indicates in fact a level of taxation after taking into account tax-free amount and tax preferences. The increase in this rate means an increase in the level of fiscalism. In contrast, the lower amount of tax due in relation to income means a reduction in fiscalism. Considering the lack of available data, the analysis period covers the years 2004–2014. At that time, the average annual effective tax rate in the EU fluctuated around 22%.

The highest average effective tax rate occurs in France 34.8%, Spain 33.9% in Malta, 32.2% and in Germany 30.9%. However, the lowest rate was in force in Bulgaria, 10.4% and in Cyprus 12.2%. From the data analysis it can be concluded moreover, that only the fiscal authorities of Malta did not make changes that would influence the level of effective taxation in that period. A similar opinion can be expressed assessing Croatia. However, the data on this country is not complete. In other countries, the amount of the effective rate changed in a different direction. In 19 of 28 countries, this rate has decreased. The greatest extent was in Greece (5.4 p.p.), Germany and Italy (5 p.p.), as well as in Slovenia and the Czech Republic (4.2 p.p.). The rate growth can be observed in Portugal (2 p.p.), Cyprus (1.8 p.p.), Slovakia (1.3 p.p.), Hungary (1.1 p.p.), and also to some extent in France (0.3 p.p.) and Poland (0.2 p.p.). The data are shown in Table 2.

Table 2. Effective average tax rates in non-financial sector in the EU countries (%)

Specification	Annual average 2004–2014	Annual average	
		2004–2009	2010–2014
UE-28	21,8	22,6	21,0
Austria	23,7	24,3	22,9
Belgium	26,4	26,6	26,1
Bulgaria	10,4	11,7	9,0
Croatia	16,5	16,5	16,5
Cyprus	12,1	11,3	13,1
Czech Republic	19,0	20,9	16,7
Denmark	23,3	24,1	22,3
Estonia	17,3	17,9	16,5
Finland	23,8	24,8	22,5
France	34,8	34,7	34,9
Germany	30,9	33,1	28,2
Greece	23,8	26,2	20,8
Hungary	18,7	18,2	19,3
Ireland	14,4	14,4	14,4
Italy	28,1	30,3	25,3
Latvia	13,4	14,1	12,5
Lithuania	13,8	14,4	13,1
Luxembourg	25,6	26,0	25,2
Malta	32,2	32,2	32,2
Netherlands	24,2	25,9	22,2
Poland	17,4	17,3	17,5
Portugal	25,1	24,2	26,2
Romania	15,5	16,0	14,8
Slovakia	17,3	16,8	18,0
Slovenia	19,1	21,0	16,8
Spain	33,9	34,9	32,7
Sweden	23,0	24,1	21,7
United Kingdom	27,3	28,9	25,4

Legend (-) – not available.

Source: *Taxation Trends in the European Union. Data for the EU Member States, Iceland and Norway, European Union, 2012*, s. 265 oraz *Taxation Trends in the European Union. Data for the EU Member States, Iceland and Norway, European Union 2015*, p. 146.

The average effective tax rate in the EU in the period 2010–2014 remained on average annually by 1.5 p.p. lower than before the crisis. It seems, therefore, that the economic downturn contributed to reducing the level of fiscalism or was neutral in this category. However, the analysis of the scale of escaping tax leaves no doubt to the fact that coming to such explicit conclusion would be

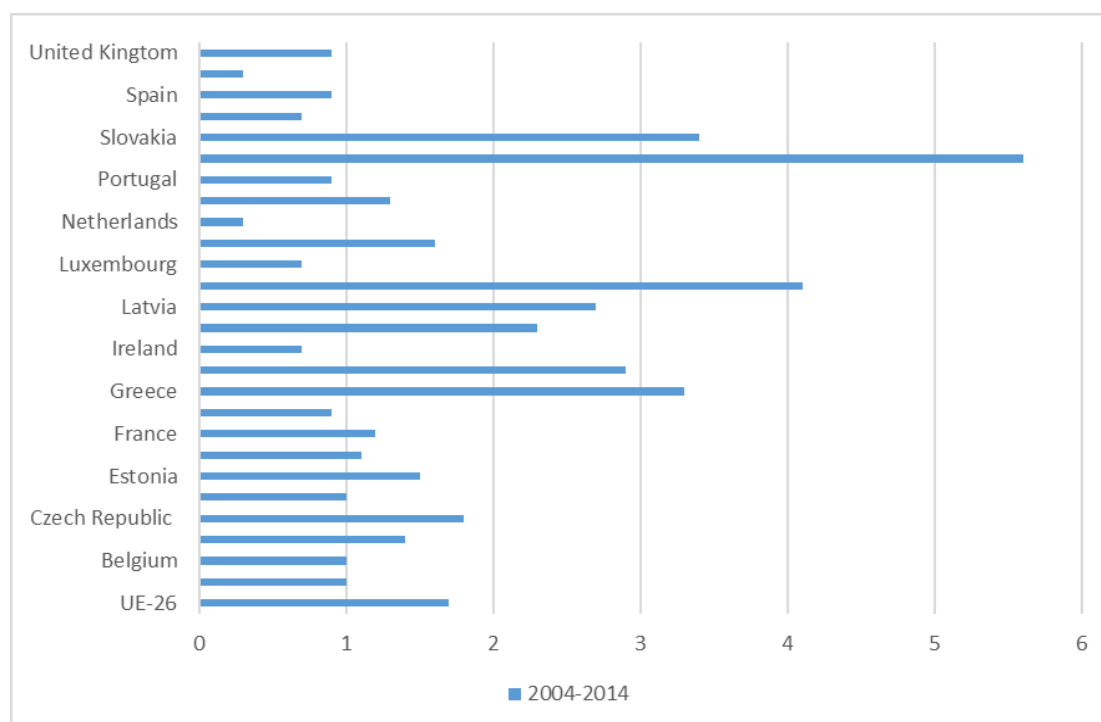
incautious. The broadest unit that illustrates the scale of non-compliance of taxpayers to existing rules is the tax gap. Its level is connected with both the size of the grey economy, the scale of underreporting and non-reporting taxable income and not prohibited by law forms of lowering the tax burden. From 2007 the VAT gap in the EU is characterized by an upward trend (The VAT Gap, 2015). Such a situation may arise from the nature of fiscal policy. At the same time, its increase may be the result of the accepted system of accounting for taxes that somehow promotes the tax fraud. This conviction stems from the fact that there is a continuing debate about the potential negative impact on the level of received income tax, the methods of accounting for VAT on intra-Community transactions. However, apart from the determinants of the tax gap, in the simplest terms, its essence amounts to the difference between the taxes due deriving from the provisions of the law, and actually collected (Silviani, 1992, Booth, 2010, and Measuring Tax, 2011). It should be highlighted that these are only estimates. It is also extremely difficult to get clear conclusions from a comparison of the tax gap in different countries due to the use of different methods of estimation. However, such analyses are conducted. This is demonstrated not only by numerous press releases, but most of all by reports prepared for the European Commission (The VAT Gap, 2015; Commission presses, 2015 and Study to quantify, 2009).

As a rule, the tax gap is presented in relation to the due tax liability. But in order to maintain the uniformity, the relation will be presented showing the gap in VAT as % of GDP. The share of gap in the tax to GDP is relatively small. However, it should be noted that it is one of the taxes existing in the tax systems of the EU countries. In fact, the tax gap is estimated also in respect of other taxes, whether direct, indirect and parataxes. Among the EU countries, such estimates are conducted in i.e. Sweden, Belgium, France, Latvia, Estonia, Bulgaria and others. However, not all countries make their results public (Strategic approach, 2011 and Novysedlák 2012). Hence, the analysis of the occurrence will be carried out only on the basis of data relating to VAT.

And so, in the years 2004–2014, the average annual level of the gap in VAT in the EU-26² was 1.7% of GDP. The ratio has been exceeded in particular by the so-called new members of the European Union. It is needed to mention first of all Romania, where the level of the gap in VAT is among the highest in the EU amounting to 5.6% of GDP. Infamous example is also Lithuania (4.1%) and Slovakia (3.4% of GDP). This group should also include Greece (3.3% of GDP), which in comparison with the EU countries – 15 has the highest rate, significantly differing from other members of the group. The data were shown in the Figure 4. In the period 2010–2014, in 16 of the 26 studied countries an increase in the tax gap can be observed, compared to the years 2004–2009. In terms of average annual this growth was around 0.6 p.p. In some cases it was significantly higher. In Latvia, the gap in VAT has increased from 2% of GDP to 3.6% of GDP, and in Romania from 5% of GDP to 6.3% of GDP. In 6 countries, the level of the gap in VAT in the period 2010–2014 compared to the period before the crisis remained virtually unchanged. In addition, in those countries throughout the examined period, the gap in VAT was significantly lower than in other countries and did not exceed 1.5% of GDP. Among these countries it should be mentioned first of all the Netherlands with the lowest next to Sweden level of the gap in VAT, i.e. 0.3% of GDP, and also: Ireland, Luxembourg and Slovenia (0.7% of GDP), Germany, and Great Britain (0.9% of GDP), Austria and Denmark (1% of GDP). Despite the significant differences in the observed category in the Community countries, changes in the level of the tax gap indicate growth in the level of fiscalism in the EU.

² Due to lack of data Cyprus and Croatia were not included.

Figure 4. VAT gap as % of GDP in the EU countries, 2004–2014 (average annual intake)*



Legend: (*) data do not include Cyprus and Croatia.

Source: Study to quantify and analyse the VAT gap in the EU – 27 Member States, Final Report TAXUD/2012/DE/316, FWC No. TAXUD/2010/CC/104, Center for Social and Economic Research, CPB Netherlands Bureau for Economic Policy Analysis, 2013 Warsaw, p. 116, 122, Barbone L., Bonch – Osmolovskiy M, Poniatowski G., Study to quantify and analyse the VAT gap in the EU Member States, CASE Network Reports, 124/2015, Warsaw 2015, p. 59 and Study and Reports on the VAT Gap in the EU-28 Member States: 2016 Final Report, CASE, TAXUD/2015/CC/131, Warsaw 2016, p. 19.

In the studied group at least two countries deserve special attention. They are: Portugal and Slovakia. In these countries, there was an increase in all measures of fiscalism used in the study. Similarly it was in France, although the changes in the level of the tax gap were not observed. It can therefore be said that the crisis in these countries has led to an increase in fiscal intervention. However the changes in indexes were not the highest.

In the group of so-called old members of the EU, 87% of countries noted an increase in the allocation index, as well as the budget deficit and the fiscalism index (80%) and also the tax gap (67%). However the level of the effective tax rate increased in only 2 countries, which accounted for 13% of this group. This suggests that the implemented tax preferences to the system in other countries caused that effective taxation decreased, despite the observed general upward trend in terms of nominal rates (Taxation Trends, 2015). It may be noted, moreover, that the fiscal authorities mostly used the expenditure instruments as part of fiscal consolidation.

However, among the so-called new EU members, 85% reported an increase in the allocation index and the tax gap, as well as the budget deficit and fiscalism index (69%). There was only 31% increase in the effective tax rate. Here the fiscal authorities also preferred expenditure instruments in order to reduce the negative budget balance.

4. CONCLUSION

We should highlighted that during analysed period the consolidation needs were vary greatly in individual countries. This was extremely important for future scale and evolution of fiscal intervention observed in the EU countries. The results of the analyses prove that applied by the EU countries fiscal consolidation measures have had financial consequences. In general view the

applied discretionary fiscal policy didn't improve the financial situation of European Union countries. In the post-crisis period deficit budget in the EU counted as a whole in relation to GDP increased by more than 1 p.p. This means that in the most countries the negative balance in the budget was deepened. Moreover in the period 2010–2015 there was an increase in the level of fiscalism in the EU comparing to the years 2004–2009. This is due to the fact that the growth occurred in all the indicators used in the study, except for the effective tax rate. Although the effective tax rate was declined the gap in the value added tax in the EU increased about 0.4% of GDP. Simultaneously, in the same period, the allocation index increased by 2 p.p., while the fiscalism index by 1 p.p. We should remember that fiscal indexes presented in research have common weak side. They aren't accurate since allow only on general view. While the level of fiscalism we can analyse taking into consideration other features of the tax system for example tax scale, tax relief system and others. This article can therefore contribute to a broader discussion and research on this subject.

To sum up, the results of the study allow us to agree that changes in the level of fiscal intervention were not significant. This is extremely important for maintaining a unchanging fiscal interventions. Since stable fiscal conditions are beneficial not only for society. They also enable to implement the new government instruments within social policy. Excessive fiscalism limits the economic activity and, in the worst case, leads to the tax evasion. The data concerning the tax gap in VAT confirm this effect. Simultaneously, it is difficult to assess whether fiscal authorities in the EU countries will continue fiscal policy towards mitigating fiscal interventions in the future, similarly as in the 90's XX century. This will largely depend on forming the economic and financial situation of countries. The analysis as well leads to further conclusion that, while the scope of fiscal intervention is important, it is naturally formed and thus adapted to the needs of each economy. It seems therefore that the sustainability of public finances, which constitutes a relatively constant level of fiscalism, is very important in this area.

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CORRUPTION, FRAUD, LOBBYISM, AND PRIVATIZATION OF WAR IN EARLY GLOBALIZATION: THE CASE OF THE BRITISH EAST INDIA COMPANY AND ITS IMPACT ON CURRENT CORPORATE CULTURE AND GOVERNANCE

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Abstract

Many of current business practices go back a long time and not only old organizations with a legacy of unethical and what we consider today as illegal behavior have difficulties to change the corporate culture to re-invent themselves. This article investigates the first joint-stock company and the way it bent all rules to assure profit success. Fighting corruption goes back centuries in all cultures. The British East India Company (EIC) also faced strong resistance when the firm representatives threatened to jeopardize the royal court system of so-called “Old Corruption” and engaged in all sort of unethical activities for personal enrichment. In the end, all regulation attempts faded out and came to nothing. The EIC set standards in many areas, positive and negative. However, the political process step by step introduced laws, rules and regulations to ensure more transparent and controllable business practices. Considering just the current discussion on governance, the will to reliable rule of law and prosecute breaches of law in many areas and countries is still not very distinct despite corresponding legal frameworks. What impact has legacy on current organizational and individual behavior? And what needs to be done to change it? The hypothesis is that the “Old” is still present in the “New”, and we need to be aware of cultural influences on corporate behavior if we want to change it. Especially the CFA today wants to ensure ethical behavior of its members, but old habits often die hard. The interrelationships of business and politics and the related social networks are at the core of the problem. What will count in the future is tackling complexity by taking a holistic view on corporate culture and governance.

Keywords: *Corporate culture, social networks, East India Company, corruption, fraud, lobbyism*

„Well, ...this is probably a change from what I would have said when I was younger. Have a very healthy respect for the study of economic history, because that's the raw material out of which any of your conjectures or testings will come.” Paul Samuelson (quoted from Roubini & Mihm, 2010, p. 59)

1. INTRODUCTION

The British East India Company (EIC) was the first joint-stock company in which anybody with some defined minimum funds could invest venture capital. The firm started end of 1600 with a special Charter from the Queen Elizabeth I. for a monopoly on the East Asia Trade in Britain (England, 1600).

This article analyses if and in which context the often-questionable methods of this firm still influence current business practices, processes, strategies and corporate cultures. My hypothesis is that the “Old” continues to have an effect in the “New”. That is one of the reasons why it is so difficult to implement sustainable change especially in big global organizations, which are in business since a long time. This includes public administration and bureaucracies.

The EIC is an interesting case. The company even from our current point of view managed to adapt to changing environments, changing political landscapes and changing markets and thus sustained a competitive advantage against its competitors from other countries in a surprisingly modern way.

The Sharing Economy firms today claim to just follow up centuries of old practice of sharing and giving and thus be the role model of the “good capitalists”. Some of their business

models seem to be copied from those of the times of the EIC, and consequently the platform based companies are equally interested in profit, while being “good” is just the PR claim. We currently face an ongoing discussion on the question who is responsible for what happens on platforms. (Evans & Schmalensee, 2016, Chapter 9). One of the main success factors of the EIC were the ships, creating networks in ports – a sort of analogue platform. And then as now the platform based business models raise fundamental ethical and legal questions.

Corruption, fraud, lobbyism – formerly called “patronage” –, nepotism and privatization of war go back as far as we know, since humans started to create written records. Sarah Chayes in her book “Thieves of State” (Chayes, 2015, Chapter 2) explores the rich literature of “Mirrors for Princes” between 700 and 1560, a sort of early self-help books for the ruling class. She quotes Machiavelli who recommends that the Prince should be “mean, not generous, harsh, not merciful”. Other mirrors of the Early Middle Ages are more explicitly focusing on the virtues of Princes. About 1090 Nazim AlMulik, advisor for his Sultan Malik Shah, wrote in the chapter about Civil Servants:

Only what is just should be exacted from God's creatures, and it should be requested with gentleness and consideration... (quoted from Chayes, 2015, p. 9ff, 63, 71, 75)

The system of patronage was based on gifts, and the theorists and firms of the current Sharing Economy often claim to be the direct descendants of such a “better world”. They like to deny that this system of gift-giving used to be a very tight mean of securing dominance, especially in the times when nations were not existing and ruling kings and emperors needed to basically buy the good will of their most important followers. And of course, as today, not everybody was allowed to take part in the system. The question is: when become “gifts” bribes? What is the underlying intention of the gift, is there a trade-off?

The research about the impact corruption and other organizational misbehavior has on economies, politics, and societies is a growing field. The EIC can be considered as a role model for many strategies, conflicts, abyss, corporate representatives and the ambivalent relationship with politics which we still observe and discuss today.

The EIC has set standards in many different areas. Gurcharan Das, former CEO of Proctor & Gamble, India, writes in his preface to the book of Tirthankar Roy about the East India Company:

The modern corporation is, indeed, a child of the East India Company and there is much to learn from the mother's failure and successes. ... The company was one of the pioneers of the shareholder or joint-stock model of corporate enterprise. As an early joint-stock company it derived huge competitive advantage – it could mobilize vast amounts of capital and operated on a much bigger scale than before. By separating investors from the professional managers who ran the business, it achieved a division of labour that made it more efficient. ... it was able to distribute risk widely ... Since it was a 'legal person', it could act independently beyond the interests of its investors. (Roy, 2012, p. xi)

Considering the economic crisis of 2008 and the ongoing problems in the finance industry it is legitimate to ask with Adam Smith if these practices are for the greater good or leave too many loopholes for the few who use them for personal gains. There were indeed many of these loopholes in and for the EIC, and paradoxically some of them were substantial for gaining sustainable competitive advantage.

2. THE BUSINESS ENVIRONMENT: THE SYSTEM OF “OLD CORRUPTION” IN THE STUART TIMES

William Cobett described the system of „Old Corruption” as follows:

... the state of Old Corruption: a parasitic system that taxed the wealth of the nation and diverted it into the pockets of a narrow political clique whose only claim to privileged status was its proximity to the sources of patronage. (Harling, 1996, p. 1)

The structure of the Royal patronage system – an early form of lobbying – already changed during the Tudor reign. Access to resources and the focus on military and clerical favourites shifted towards a system of what we would today call “power players”. A very prominent representative of that species was George Villiers, Duke of Buckingham, who managed to control the access to the king James I. almost completely.

The number of gentry families increased considerably in the 16th century. The Crown needed the support of those families as well as that of the wealthy merchants. The latter gave huge loans to the Crown and acted as a sort of unofficial bankers. Both parties were members of parliament and thus essential for granting new taxes. (Levy Peck, 1993, p. 31)

Trade introduced major changes in the 16th century society. Merchants and firms wanted to control the newly emerging oversea-trade mainly with East Asia. The newly wealthy citizens engaged in real estate deals, trying to purchase land, if possible titles and thus belong to the political elite. Real estate business especially in urban development today is as ruthless as ever. While so-called land-grabbing is a rising problem not only in developing countries, the inequality in the cities is even more alarming. As Richard Florida in his just published book “The New Urban Crisis” points out:

The larger, denser, and more knowledge-intensive and tech-based a city or metro is, the more unequal it tends to be. (Florida, 2017, p. 193)

While in the past gentry had to own land in rural areas, the trend today is reverse: it's inner city real estate that attracts not only the rich in general, it also became a money-laundering practice of choice for all sorts of criminals and corrupt officials. The London city is the best example. The rising real estate prices in inner cities raise rents and costs of living, gentrification drives less wealthy people into the suburbs.

The Stuart Crown developed its own lucrative new business model. On offer was a constantly increasing flood of “Royal Bounties” – huge areas of land for sale or lease, economic privileges like licenses or customs duties to prevent competition, civil servant positions or status symbols of minor financial value but high social reputation. The number of knighted on almost all levels rose. The Crown invented a new title, the Irish Baronet to the price of £ 1,095.

The economic change and development gave the Crown another innovative source of income: patents, licenses, and especially monopolies. Monopolies were disputed right from the beginning, but they turned out to be quite satisfactory for the Crown from a financial point of view. Privileges didn't come cheap. Thus, the number of privileges increased until 1621 substantially, which caused a flood of petitions to Parliament complaining about market manipulation. In 1624, the House of Commons finally was forced to pass a bill that limited the possibilities to register patents and specifically monopolies. Today we face numerous cartel cases, all illegal agreements to manipulate markets and competitive landscapes on the back of customers, mostly taxpayers. Attempts of the pharmaceutical and chemical industry to register patents on natural resources like herbs and other plants look very similar to what happened in the 17th century.

Furthermore, the Crown increased the awards of pensions. This allocation of privileges we still see today in politics and business, unfortunately not only in clearly defined kleptocracies and dictatorships. It takes the form of nepotism, bonus payments and other monetary or non-monetary awards. One of the most recent example would be the Trump family reign in the White House. And as today, already back then this practice caused severe resistance. (Levy Peck, 1993, p. 35)

In the contemporary discussions, we can detect the roots of the ongoing debate about free trade and fair competition. Adam Smith, who was a moralist as well as an economist, was one of the most ardent critics of monopolies. In his book “The Wealth of Nations” he argues against the many disadvantages of monopolies, namely the issue of pricing. (Smith, 2012, bk. 3, Chapter 7, Part 3)

Even though many wanted to change the system, eventually all these efforts were ineffectual and doomed to fail. Those who acted as advocates of change very often were only driven by their own individual ambitions. Privileges were sold on all levels, not only by the Crown, and the registration of often absurd patents and monopolies were quite popular. In 1610 with the “Book of

Bounty” an effort was made to regulate the flood of privilege sales and to limit the practice to legal projects. However, the sale of titles by the Crown was not affected. Only the industrial revolution finally started to change the attitude towards markets and competition. Levy Peck notes:

King James and his advisers tried to put the allocation of patronage on a paying basis. ... The Crown's sale of titles, however, brought honour and market too closely together. ... As a result, they faced the potential loss of the "symbolic capital" that royal bounty represented. ... gift-giving was intrinsic to the exchange of patronage. ... Such "gifts" had precise monetary values. (Levy Peck, 1993, p. 38f)

2.1 Networks

Networks play an important role in all kleptocracies¹. Warburton suggests that we need to consider these networks as social systems, and it is important to understand the agendas of the individuals taking part in these networks and their decision criteria. (Warburton, 2013)

This was evident in the system of the so-called “Old Corruption”. The patronage networks at the Royal Courts in the 16th and 17th centuries were a role model for Warburton’s analysis. Levy Peck states:

Renaissance patrons sought to extend their political power in time and space. They created networks of followers to enforce their will and harnessed literature and art to document and testify to their greatness. Controlling access to resources of all sorts, patrons received in exchange from their clients' signification and reinforcement of power and prestige. Clients presented gifts that testified to the court patron's honour and superiority; observers marked his or her standing in direct proportion to the numbers of his or her dependents; the patron celebrated self and family, in art, literature and politics. (Levy Peck, 1993, p. 48)

The Royal favorites were at the center of circles trying to influence political decisions and bounties to their advantage. The favorite – or lobbyist – acted in this system as a sort of mediator between the petitioners and the Crown. Soon an administrative system was installed, petitions had to be submitted in written form, and many petitioners wanting to be on the safe side maintained relationships with as many patrons as possible. Power lay in the hands of these networks of personal relationships and the actual power was executed by informal well established courtly interest groups.

It was a system that seems to be much alike the current system of “Powerbrokers” and lobbyism, which dominates today’s political and economic landscape. The anthropologist Janine Wedel analyses in her book “Shadow Elite” the structure and the impact of this development. A new species has emerged in the public opinion making that she calls “Flexians”. But in fact, they are not so new at all, we meet this species already in the time of the EIC and the Royal Courts. These influencers collaborate in what Wedel calls flex nets and thus multiply their influence. Flexians act in different roles, only showing the least offensive to the public while hiding the self-interest role, in which the same people pursue business interests which they facilitate in their inoffensive “independent advisor/consultant/academic” role. The main problem with these “flexians” is that they are exempt from any control or accountability. They remain without obligation or commitment and just move on when one of their pet project fails. (Wedel, 2009, p. 5) The dealers and wheelers in politics and business always seem to find ways to avoid consequences. For example, the US investigation into the Russian connection of the Trump campaign was just answered by a new rule, which seems to be very much alike practices in the past: Trump’s ethics watchdog allowed anonymous gifts to legal defense funds, directed explicitly towards “aides caught up in Russia probes”. (Samuelsohn, n.d.)

2.2 Trade, Markets and Literacy

Linda Levy Peck states that corruption as underlying characteristic of early modern administration in the 17th century led to a growing unease. (Levy Peck, 1993, p. 5) Already at the beginning of the

¹ A government or state in which those in power exploit national resources and steal; rule by a thief or thieves. (<http://www.dictionary.com/browse/kleptocracy>)

16th century some legal restrictions were in place concerning bribery, racketeering, sale of postings and nepotism. The term “bribery” seems to be first publicly used by Chaucer in his Canterbury Tales. During that period pressure on Parliament increased to ensure that these laws were actually executed and the illegal activities prosecuted. And indeed, quite a lot of court proceedings took place and defendants were convicted. Most of the litigations were aimed at corrupt judges, and the establishment of a reliable rule of law was a broadly shared concern of the public and Parliament.

This development contradicted in many areas the interests of the Crown as it jeopardized its lucrative business model of patronage. The King was the guarantor of justice and at the same time giver of bounties. This attitude went back centuries, and the concept of rule of law was indeed very innovative. What triggered that issue were the more and more complex business relationships between firms, customers and especially foreign suppliers and colonies.

The relationships between “Clients” and “Patrons” were asymmetrical and followed an unwritten code implying the exchange of benefits. This exchange was meant to create a system of trust, solidarity and reliable agreements. And as today, the system meant to disguise the real power structure of the relationship network. The transition from a simple “gift” to bribery was and still is blurred. The so-called “Court Brokers” were the people who controlled access to resources – and early form of Wedel’s flexians.

Levy Peck suggests that to understand the courtly “patronage” system, it is important to consider the language and argument used to justify the system. While the terms “client” and “patron” originally derived from Latin, they were re-defined in Stuart England:

In medieval Latin, “patron” signified, in addition, patron saint, and lord and master. The order in which these meanings were taken over into English was not the same, however, as in Latin. Its first usage in English was religious not secular, In the fourteenth and fifteenth centuries, “client” was used generally to describe one under the influence of another. By the sixteenth century, it had changed significantly. It was applied to secular relationships, coming to mean aid to a client in return for certain services. In the sixteenth and seventeenth centuries, there was occasionally an identification of the client with a vassal or even a slave. (Levy Peck, 1993, p. 16)

Considering the language of kleptocracies and corrupt individuals today, we also detect many attempts to re-define the facts and thus prevent transparency. The language of “fake news”, twisting the facts, is a powerful way to hide relationships and patterns.

In parallel, technology development and overseas trade started to introduce fundamental change in the society. The invention of the letterpress created a flood of books, leaflets and all sorts of other publications. Literacy started to increase, and more and more people wanted to participate in the new world of suddenly affordable luxury goods. Firms – especially the EIC – started to keep meticulous records of all their transactions. Printed materials and the increase of literacy enabled firms to explore and open new markets, their marketing strategies were surprisingly modern even from our today’s point of view.

Levy Peck outlines in her book “Consuming Splendor” the development of changing consumer behavior. Demographic change and international trade created desires that captured almost the whole society. Between 1600 and 1650 the population grew to over one million. New crops and methods allowed farmers to cultivate their land much more efficiently. The demand for the increasing imports of luxury goods exploded, and even working families, whose wages actually fell, seem to have worked more to take part in this new pleasure of consumption. (Levy Peck, 2005, p. 14f)

A powerful network of purchasers, merchants, agents and distributors created needs by exchanging and publishing information. Fashion and other luxury goods became in a very short time extremely popular and ensured especially the profitability of the EIC. Shopping became entertainment, and customer experience created needs the consumers were not even aware of before getting in touch with the shopping facilities and the goods. The EIC and other importers constantly offered new products that they customized for the domestic market. Foreign arts and crafts became popular, and the market for gold, silver, textiles, glass and other goods boomed.

Luxury is connected to identity, then and now. And as today, in the 17th century more and more people wanted to look like belonging to a higher class and bought goods they couldn’t afford which

caused more and more law suits. But the industrial revolution offered relief: the domestic industry started to produce cheaper copies of foreign products that were not only offered in the domestic market but also to the former suppliers and foreign markets.²

3. THE “HONOURABLE EAST INDIA COMPANY”

The firm was founded as a Chartered Company on December 31, 1600. Queen Elizabeth granted the shareholders of the firm a monopoly for the maritime trade – in the beginning just four ships – between India and England. The company was finally dissolved June 1, 1874, 274 years of chequered history. The firm celebrated commercial successes and failures, revolutionized the organizational structure of firms and committed all known breaches of ethics and crimes that still cause problems today – i.e. mismanagement, inside trade, corruption, fraud, critical lobbyism and military operations – market expansion with warlike operations, piracy, market manipulation. The company had to be bailed out by government twice, however the EIC managed to keep the monopoly as in better times the firm granted huge loans to the Crown. The “Old Corruption” system still worked – somehow, when the “nouveau riches”, the so-called “Nabobs”, who had made enormous fortunes in India, coming back to England bought their positions and influence in the British aristocracy, parliament and society and started to change the rules of the game.

The representatives of the company mostly had the spirit of adventurers, coming from upper middle-class families, impoverished gentry or were the younger sons of aristocratic families with no expectations to inherit titles or estates. Their aim was to get rich as quick as possible no matter how. A prominent example is the Pitt family. The family fortune was made by Thomas Pitt, governor of Madras in India. While his son and grand-son made successful political careers and even managed to acquire a title (1st Earl of Chatham), the most interesting member of the family was William Pitt the Younger, appointed Prime Minister when he was only 25 years old (in office 1783–180 and then again from 1804 – 1806, his death). He was supported by the “Nabobs” and only got his positions based on a network of corruption and lobbyism – we may think of Wedel’s flexians in this context. He then turned into a supposedly fierce critic of the practices of bribery and fraud. He re-organised the British East India Company by establishing a Board of Control appointed directly by the King³ and thus centralized the British rule in India. The firm now officially acted as government representative and administration in India. After the battle of Plassey 1757 this “legalized” the colonization of India. The example of the Pitt family shows the hypocrisy which was often involved in the public and political discussion. The players in these disputes usually had very distinct personal interests, either as shareholders of the company or political power players–lobbyists or both.

3.1 Patents, Monopoly, Trade and Corruption

The monopoly of the EIC was originally limited to 15 years and needed to be renewed regularly. The company was founded by adventurers, merchants, politicians and sailors. The profitable trade with East Asia was until then done overland, dominated by merchants from Arabia and Venice. The aim was to use the newly discovered sea routes to break the competitive advantage of these market players and develop a less costly supply with the Asian goods – in the beginning mainly spices. The firm started relatively small, just 4 ships and an initial total investment of £68,373⁴ made by 219 investors. The firm had powerful competitors, mainly the Dutch East India Company (VOC) and the Portuguese East India Company. A special problem caused the French competition as the French East India Company also installed settlements in India.

² (Levy Peck, 2005, p. 353) i.e. In 1663 a law suit before the Court of the Exchequer Manby vs. Scott took place. Scott refused to pay a debt claim of Manby, who gave credit to Scott’s wife against explicit prohibition of Scott.

³ India Act 1784.

⁴ “*The Company of Merchants of London Trading into the East Indies*” – the initial name of the firm.

The investment can be considered as venture capital. The journey by sea was long and dangerous, the success of the venture was unpredictable. And while the ships returned as planned, the financial success in the beginning was unsatisfactory. The market for pepper was saturated (Ferguson, 2009, p. 130) as not only the direct competitors but also the King flooded the English and European markets with Asian spices, and the prices dropped considerably.⁵ Investors reclaimed their money and were quite angry when they learned that they had to finance a second expedition.

The company attracted two sorts of investors. (Keay, 1993, p. 25f) One group consisted of those who were only interested in making big short-term profit, they had no interest in trade as such or any sustainable business development of the company. We could compare them with today's hedge fund managers. The other group were merchants, wealthy London trade firms with extensive financial and commercial interests, wanting to expand their businesses. These two groups of investors can be roughly allocated to the two main institutional bodies of the firm – the “General Court” (later Court of Proprietors) and the “Court of Committees”. Members of the General Court were those investors who had signed up for at least £200 and had voting rights. They were not much involved in the day-to-day business. This was handled by the Court of Committees, that was presided by a Governor (CEO) and a Vice-Governor (VP) and 24 Directors who were all elected by the General Court. The first modern corporate structure came into being and is still valid today.

The first years were turbulent, profitability was fluctuating. Finally, in 1618, the company managed to install a trade post at the Coromandel Coast in India, the later Madras, and negotiated a trade agreement with the Mughal Emperor. The Charter and monopoly was renewed regularly, even by Oliver Cromwell, and finally in 1657 the firm restructured and became a permanent Joint-Stock-Operation. The firm started to resemble our current corporations. It also got another privilege: the EIC was entitled to set up colonies for the British Empire. The Board of Directors could plan more efficiently, long-term and sustainably.

The firm installed a supervisor for the overseas representatives to control private trade and corruption. However, this was not effective, owed to the distance and difficulties in communication and conflicts of interest. The employees of the company (“writers”) had a relatively small income, and everybody working for or with the company took any opportunity to get rich. The conflicts with the competitors were fierce and ongoing and led to constant military interventions. Finally, the firm controlled three locations, Madras, Calcutta and Bombay, the latter was transferred to the firm as a colony by King Charles II.

At the end of the 17th century, Parliament filed a first corruption suit against the firm and its representatives, but not surprisingly it was never concluded and finally fizzled out. However, Parliament installed a new company – the New East India Company, which from the beginning was underperforming. Investors of the EIC invested heavily into the new firm, took over and integrated it in the EIC. In a way, a hostile take-over, and standard strategy until today to muscle out competitors.

The consumer market during the Stuart reign became more and more sophisticated as outlined above. Furthermore, a run to register patents of all sorts emerged. As the historian Linda Levy Peck outlines, patents could be considered as a Royal Bounty that paid indirect taxes to the Crown. (Levy Peck, 1993, p. 136ff) The practice to grant patents of monopolies already started in the Elizabethan time, and were right from the beginning strongly criticized. While they were at first meant to support the establishment of new industries, it soon became a convenient way for the Crown to raise monies. James I. suspended all monopolies, and whether a patent was legal or not had to be determined by common law. The emerging discussion now became the issue of privatization of law and order. We observe during the 17th to the 19th century the emergence of a reliable rule of law, something which seemed to be a common global consent until today. However, the principle is currently eroding in many countries. Even though the Stuart King tried to limit the privatization of law, he didn't succeed. Bribing judges was common practice, and so lots of lucrative but mostly senseless patents were granted to individuals who then could force all

⁵ King James I. had a huge contingent of pepper from supposedly illegal sources (piracy?) that he introduced to the market. At the same time, he put an embargo on the products of the EIC, so that he could sell his goods to a premium price. A clear-cut market manipulation.

competitors out of their markets. As mentioned above, the intention to manipulate law proceedings is still evident, but usually in a subtler way.

However, this was the beginning of our current practice of granting patents as intellectual property. Many patents at the time were just meant to prevent prospective competitors to also make business, license well known goods, or regulate products and behaviour. At the same time, many technological innovations were patented, that built the foundation for the Industrial Revolution. All attempts to regulate the granting of patents failed in the end, and Parliament had to deal with a rising flood of petitions and complaints. The practice went on during the reign of Charles I., even though the Statute of Monopolies (1624) was meant to set an end to it. Rule of Law, UN Charters and national laws in most countries penalize corruption, but then as now it often lacks the political will to prosecute.

3.2 Networks of Private Trade as Success Factor

As outlined before, the EIC had a major impact on the daily life of people in England as she created and opened new markets, especially for luxury goods. While in the 17th century the main product portfolio consisted of spices, this changed fundamentally during the 18th century. Cotton textiles, silk, all sorts of exotic art objects and Indigo were imported. Products that were not accessible before became affordable to much larger percentage of the population. The political influence of the firm grew as Emily Erikson explains:

By 1699–1701, trade with the East Indies constituted 13 percent of England overseas imports. England's tax base had tradition- ally rested largely upon overseas trade, thus the increase in state revenues directly provided by the business of the Company was far from negligible. The Company also made direct loans to the monarchs of England prior to the Glorious Revolution (1688). Perhaps most important, the Company was a central actor in establishing a modern system of public debt for the British nation—after the control of funds had come into the hands of the British Parliament (Carruthers 1996: 137–59). This step was crucial to the emergence of a modern bureaucratic nation-state in England. (Erikson, 2014, p. x)

One of the main problems the company faced was the private trade of the employees, especially of captains and ship officers. Paradoxically, as Erikson states, this became one of the most important success factors of the company. Almost no business leader or manager today would like to face an internal competition by employees. This might change though when we think of platform based networks and a sort of re-definition of the term “employee”. As critical as that may be from an ethical point of view, the virtual “employees” of platform based firms like UBER help to support the idea of virtual company structures despite all conflicts.

The EIC in the beginning tolerated the internal trade somehow, it was in the interest of all those who wanted to get rich as quick as possible. Employees needed to moonlight. The ships didn't go directly from port A to B, they had to stop in many ports and this offered opportunities to the ship officers to not only create powerful social and informal information networks, but also engage in own business ventures. The latter were mostly complimentary to the EIC portfolio.⁶ While the domestic dispute was directed against the company and its monopoly privilege, the decentralized networked organizational form it actually had was mostly neglected. The ships and her captains opened new harbours, new opportunities and contacts, they transmitted information and thus indirectly managed to support the core business of the firm substantially. Thinking about platforms, we can compare this network with our current platform based market places. The private trade became one of the major success factors of the EIC, and consequently the firm allowed employees to establish their own trade relationships and even provided the financial aid needed to transfer money back home to England, a system that was later also used by Asian partners and agents.

However, this system was at the same time deeply flawed. Most employees were only interested in their own advantage, corruption and fraud were common practice. The network though grew constantly, and Erikson evaluates the impact of the network on the overall success of the EIC:

⁶ i.e. The EIC never engaged in slave trade, but the ship officers often did.

With the help of the opportunistic employees, the English Company wove these loosely integrated commercial regions into one densely connected network that increased the potential of information between English ports in Asia as well as those ports and England itself. Increases in information would have helped the Company plan for and adjust to the fluctuating markets of the premodern period while tightly coupling the economies of England and Asia, and thereby changing the structure of trade within Asia as well. Translated into the language of network analysis, the micro-level activities of the malfeasant traders caused the development and elaboration of complex multilateral exchange circuits that gave rise to densely integrated network components.(Erikson, 2014, p. 108)

However, the discussion and conflicts about the monopoly and the EIC was ongoing in Britain, and Parliament was more or less forced to act.

3.3 Privatization of War to Exploit and Manipulate Markets

One of the most ruthless and controversial representatives of the firm in India was Robert Clive. He came from a small gentry background and was already as a teenager constantly in violent conflicts with peers. His father got him a position as Writer in the EIC, and he set sail to Madras. His salary was low, and he was bored. When the conflict with the French East India Company developed into open war, he enlisted in the company military. He moved on and up, and in 1753 won for the EIC – and for himself – the battle of Plassey against the Mughal Emperor. He enforced the right for the EIC to collect taxes (*diwani*) and managed to install a puppet government. It was the time when the EIC started to act as representative of the British government administrating and exploiting the colony of India.

All East India Companies had their own military forces, trade settlements had to be defended. The EIC though gained a special status as it basically ensured the British rule in India also in military terms. Privatization of war is an ongoing problem even today. The UN published a statement against these practices (OHCHR, 2015). Mercenaries don't need to comply with any laws or conventions, they are contractors who just answer to their employers. Geneva convention, torture, killing unarmed persons – Human Rights in general – are of no interest to them, they haven't signed any agreements. Currently some members of the GOP in the US are proposing to pull out the US Army from Afghanistan and instead send in mercenaries, a quite scary idea, considering the experience of the former colonies exposed to the military interventions of all European East India Companies.

One of the worst incidents was the market manipulation of rice supply during the famine in 1770. In the late 18th century, the firm had forced the formerly independent Indian craftspeople into a sort of forced labour scheme, and foreseeing a major drought, the firm and its private employee traders had bought all available rice supplies while at the same time enforcing that only a limited quantity of rice was produced. The rice prices soared during the drought resulting in enormous profits for the firm and the many employees, who had hoarded private supplies. The Mughal system in the past had always regulated the food supply during times of floods or drought, but were now no longer able to do so. Complaints by people to the Company's Calcutta Council were answered with "howls of laughter"(Robins, 2006, p. 91). Approximately 10 million people died during the famine. This caused the critics in England to become more insistent.

Activities like that are also common today. ENRON manipulating the electricity prices in California, the – just of fraud convicted – Martin Shkreli who increased the price of a scarce HIV medication by several 100% are current examples.

3.4 Conflicts of Interest, Fraud and Illegal Business

Clive was the role model for greed and fraud of representatives of the EIC. He forged the signature of an agreement with the Mughal emperor after he won the battle of Plassey and in parallel installed a puppet government for which he was princely paid. The privilege to collect taxes was exploited without mercy not only to the benefit of the firm but also to private gains. While the economic system of the Mughal empire tended to be quite stable over centuries, this changed now. Clive and his successors – namely Warren Hastings – established a system of kleptocracy, fraud, exploitation

and forced labour. Craftspeople could no longer determine prices for their products; the price level was forcefully lowered considerably. Taking over the administration for the Mughal empire opened the doors to intensified corruption, fraud and all sorts of illegal activities. If there was resistance, that was solved by military interventions. A “gift” policy developed, nothing was done anymore without handing out huge bribes, bottom up in the Indian society and Nawab and government officials towards the English in the colonial relationship. Clive enforced a rule that noble Englishmen had to be paid substantial lifelong annual rents by the Mughal government. This caused the financial collapse of the Mughal empire so that the country couldn’t meet its obligations anymore. In turn, the English representatives gave loans to the Mughal government to excessive interest rates. Emerging riots and resistance were oppressed by military interventions.

Clive also was engaged in insider trade. Before he signed the “diwani” tax contract, he ordered his London lawyer to buy shares of the EIC. After the deal was made public, share prices soared and he made enormous profits. Another practice that is still the option for executives in corporations with unethical or even criminal cultures like ENRON.

Another major legacy that still haunts us today is the opium trade. The company faced an ongoing financial challenge, it had to ship bullion to India to pay for the traded goods. This became a bit easier after the tax contract. However, the EIC not only did business in India, but also in South East Asia in general, namely in China and it had to pay for the goods. China followed a restrictive trade policy, and especially opium was illegal to import. This opened the door for smugglers. Opium became a sort of currency and was traded against products from China, i.e. silk and especially tea. The company established a monopoly for the opium trade in India, and enforced farmers in Persia and Afghanistan to exclusively grow poppy seeds. Opium was sold into China via a network of agents and subcontractors, an utterly illegal trade. But it solved the liquidity problems of the EIC. The family of one of the most successful Hong Kong smugglers at the time is still one of the largest landowners in Britain. The company also helped to transfer these illegal profits to England. The EIC acted as what we today would consider as drug and war lords, engaging in money laundering.

4. TRANSFORMATION, AND COLONIAL ADMINISTRATION

Meanwhile the discussion at home about the firm became more and more controversial, and Parliament finally had to take some steps. Law suits against Robert Clive and Warren Hastings were initiated. Both went on over a period of years and finally faded out without a result.

Clive’s de-facto take-over of the Bengal government after the tax contract transformed the company purpose again. The firm became the British colony administration. As Robins calls it: “The corporate state had arrived.”(Robins, 2006, p. 76) A dangerous development in some countries still today.

At the beginning of the 19th century during the industrial revolution global markets changed and new competitors emerged. India’s competitive advantage in textiles was gone, domestic manufacturers produced these goods less costly plagiarizing products from all over Asia. Maybe we should be a bit more cautious, when we accuse countries from Asia today of the same practices. The economies in East Asia collapsed, the direction of trade had reversed, Europe started to export into the colonies.

In 1830, another economic crisis caused the critics of the EIC and its monopoly to gain influence. As usual, there were distinct signs before the actual crisis hit. The innovative domestic manufacturers opposed the EIC and its privileges strongly, especially as the firm’s profitability was decreasing anyway. A deal was struck, which guaranteed dividends to the shareholders, and the EIC monopoly fell in 1813. The company that wasn’t a real company anymore, was finally dissolved in 1874.

5. CORPORATE CULTURE

Looking back at the EIC, considering its successes and failures, like in any current organization a major impact of corporate and political culture seems to be at the core of the individual and corporate behaviour. Harvard and Duke University researchers Gino et al. suggest that exposure to other peoples' unethical behaviour seems to be contagious (Gino, Ayal, & Ariely, 2009). This can be translated into organizational culture. A culture based on criminal energy seems to lead to what Dan Ariely calls "The What-the-Hell-Effect" – it usually starts with some unethical decisions, moving on to at first small, but later more and more bigger decisions, cutting corners, and get entangled in illegal activities. It takes a lot of stamina to stick to own values in such environments.

5.1 Bias, Temptation and Politics

As Kahneman in his book "Thinking Fast and Slow" outlines, we have two ways of taking decisions: the rational – slow – way, and the intuition based – fast – way (Kahneman, 2011). Gerd Gigerenzer, a German Behavioural Economist, who focuses on risk taking and management reports in his book "Risk Savvy" how people like to come up with simple solutions to complex problems. A survey among executives in Germany revealed how often top managers take decisions based on gut feeling. This was especially evident in a car manufacturer. 74% of the executive board and group executives admitted to take mostly intuitive decisions, 10% even always. (Gigerenzer, 2014, p. 131) We live in rapidly changing global environments, and considering some data before just going ahead seems to be a good idea to deal with current complexities. The problems of VW and other car manufacturers don't seem so surprising when we consider this approach of the executive management.

5.2 The Corporate "Stanford Prison Experiment"

It became popular to blame the greed and bad character of politicians, executives and managers in general for the dangerous situation we currently live in. This might be true to a certain extent, people in power positions should be made accountable for the results of their decisions. Looking back at the EIC, the attempt of Parliament to prosecute individuals with especially bleak track records of embezzlement and breaking all rules in general was justified even though it didn't produce any tangible results. Philip Zimbardo, the creator of the well-known "Stanford Prison Experiment" looks back on his research in the book "The Lucifer Effect". He concludes that certain powerful social settings – like corporate cultures – can transform human nature dramatically. Quite normal people change into "perpetrators of evil" or "pathologically passive victims...as response to situational forces acting on them" (Zimbardo, 2009, p. 210ff). Perpetrators generally justify their behaviour as "following the rules", and while rules are up to a certain extent necessary they should be created very carefully. On the other hand, there is the question of accountability and responsibility: are we just victims of our environment or do we also create the world we live in, each of us on her or his place? And how much responsibility do we take for the results of our decisions?

Why do we follow peer pressure?

This fear of rejection when one wants acceptance can cripple initiative and negate personal autonomy. It can turn social animals into shy introverts. The imagined threat of being cast into the out-group can lead some people to do virtually anything to avoid their terrifying rejection. Authorities can command total obedience not through punishments or rewards but by means of the double-edged weapon: the lure of acceptance coupled with the threat of rejection. (Zimbardo, 2009, p. 259)

Some environments tend to be toxic, and an increased emphasis on ethics is desirable. The current global political situation is alarming, more and more countries fall prey to populist dictatorships, who transform their nations into kleptocracies without any reliable rule of law. Organizations often seem to follow this development by installing cultures of "anything goes as long as it is profitable". The US government just legalized bribery of foreign government officials for the oil and mining industries

thus raising the social problems in kleptocratic developing countries. The complete deregulation of all business activities throws us back into the times of the EIC and the corporate state.

5.3 Culture Change, Codes of Conduct and Compliance

How can we change a political and business culture that has turned toxic? And a more important question today seems to be: do people want this? As Hannah Arendt warns us:

Totalitarian movements have proved time and again that they command the same total loyalty in life and death which has been the prerogative of secret and conspiratory societies. (Arendt, 2017, p. 498)

Business and politics is still intertwined as it has always been. Ethical codes of conduct, compliance programs, CSR programs – all this are steps organizations should take to empower an ethical culture which leads to a better life for all. Pressure on governments shouldn't only come from NGOs, but also from the business community. It's time to step out of the "Old Corruption" system of patronage and enter ethical and transparent lobbyism for a better world. This is also in the interest of business. As Sarah Chayes states:

When every government function is up for sale to the highest bidder, violations of international as well as domestic law become the norm. ... Acutely corrupt governance doesn't just aid terrorist organizations by driving indignant citizens into their arms; it provides haven and logistical support for those very same groups, as officials avert their eyes in exchange for a bribe. (Chayes, 2015, p. 184)

6. CONCLUSION

Looking back at the East India Company, we can conclude that the firm like a corporate archetype set standards for organizational structures and political administration. There are positive experiences which prevail until today, for example the general management led structure of corporations, the joint-stock operation and the "platform" based network. However, the dark side of the EIC business practices overshadows the positive effects. The firm and its representatives engaged in every possible unethical and illegal activities, and we still suffer from its impact today. It was the EIC which enforced a poppy seed monoculture in Afghanistan, and this is still one of the major economic problems in that country. Manipulating markets is still prevalent in many areas, corruption and fraud daily practice. The tendency of many people to think that there are simple quick solutions for complex problems is augmenting the problem of public discourse, and politicians gladly walk into that trap to keep people in a good mood. This is also happening in organizations.

The research results from Behavioural Economists are alarming, it seems to be just a very small step to take devastating decisions. Mankind doesn't seem to be very aware of how irrational many decisions people take are. Gut feeling, jumping to assumptions and conclusions, all that is ingrained in our genes. However, to facilitate better organizational and individual decision making we should install systems that help doing so. And one thing all surveys about fraudulent corporate culture found is the lack of efficient control systems. Considering Janine Wedel's warning, the creation of innovative auditing and control system should be done with some urgency:

Auditing, which derives from accountancy, breaks things down into observable, isolated, and often quantifiably pieces, and then scrutinizes the pieces – typically with little or no regards for the whole....When information is broken up into bits so that essential pieces are separated from each other, knowledge, wisdom, and institutional memory are side-lined. Appearances are what matter. (Wedel, 2009, pp. 198–199)

When firms create compelling customer experiences, they take a holistic view and thus tackle the intrinsic complexity of the process. It proves that firms know how to plan and act when it is in their core interest. After so many centuries of fragmenting the problem areas of ethical and illegal behaviour in organizations – on an individual as on an organizational level –, innovative auditing and control systems should be developed that take the same holistic view on ethical governance as

businesses obviously are able to take in marketing and sales. This includes efficient stakeholder management, considering organizational and individual behaviour and its impact on economies and society. Choosing the right leaders, those with integrity, is another challenge. KPMG for example offers an Integrity Barometer to incorporate integrity based selection criteria into organization's leadership recruitment. It would be desirable that all organizations would implement such systems.

History can be a powerful teacher if we only would listen. Looking back, we know the consequences of behaviour and decision making in the past. They didn't change much over time. With all we know today, based on all the research, it should be possible to create more efficient alternatives on how to develop ethics based corporate cultures and embedded governance.

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PRACTICAL ISSUES REGARDING THE ARM'S LENGTH PRINCIPLE MENTIONED BY IAS 24

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Abstract

This article illustrates, based on a study case, the steps that companies should follow in order to substantiate the compliance of their related party transactions with the arm's length principle (as it is required by IAS 24). The study case takes into consideration the provisions of the OECD Transfer Pricing Guidelines, and where was required the application of a domestic legislation, we applied the Romanian one. We found that the most important step is represented by a comparability analysis between related party transactions and comparable market transactions. Further on, we noted that the application of this step triggers some practical issues which are strongly determined by the deadlines for the documentation of the arm's length principle. More exactly, depending on these deadline, the financial information for comparables are or not available for the year under analysis. Given this, in relation to the comparability analysis, in practice are met two situations: the use of comparable entities' information from the year under analysis and the use of this information from previous years. In this context we selected a sample of comparables and analysed if these two practical approaches impact the final conclusion regarding the compliance with the arm's length principle. We found that there can be a small difference among the results obtained in the two situations. Mainly, the article presents importance for the professionals from the accounting and finance area in order to understand the mechanism of the arm's length principle.

Keywords: *arm's length principle, double taxation, IAS 24, multiple years, transfer pricing*

1. INTRODUCTION

During the time, as a consequence to the financial scandals in which were involved big corporations (such as Arthur Andersen, Enron, Tyco, WorldCom etc.), the related party transactions have begun to be considered, mainly by the investors, an instrument used by companies for opportunistic purposes (Wong and Jian, 2003). This is due to the fact that the transactions between related parties could not be carried out under the same terms and circumstances as the transactions performed between independent companies (Pozzoli and Venuti, 2014). Given this, the related party transactions “may distort financial statements leading to higher information asymmetry and a general erosion of investors' confidence in the firm” (Tong *et al.*, 2014). In this context, a special attention should be focused on the disclosure of this kind of transactions in the financial reports (Huang and Liu, 2010). A disclosure of the related party transactions is necessary, in order to allow the users of the financial statements to capture a full picture of an entity's position and results of operations (Epstein and Jermakowicz, 2008).

At international level, guidelines regarding a proper disclosure of the related party transactions are provided by the International Accounting Standard 24 “Related Party Disclosures” (i.e. IAS 24). According to paragraph 23 of IAS 24 companies should perform “*disclosures that related party transactions were made on terms equivalent to those that prevail in arm's length transactions, only if such terms can be substantiated*”. The compliance of the related party transactions with the arm's length principle means that the prices used by companies within these transactions are at market level, the related party transactions not being used for opportunistic purposes. Therefore, this kind of disclosure could have a significant impact on the increasing of the investors 'confidence. But what should companies do in order to prove that their related party transactions comply with the arm's length principle?

One of the objective of this paper is to illustrate which are the steps that companies should follow in order to substantiate the arm's length principle compliance of their related party transactions. More exactly, within this paper we presented a study case which provides an example of related party transaction, showing and explaining each step which conducts to the final conclusion about the compliance or not of that transaction with the arm's length principle. Trying to achieve this objective we found that in order to document the compliance of the arm's length principle, there should be performed a comparability analysis (i.e. an analysis which compares the prices/margins/mark-ups used by a company in related party transactions with the prices/margins/mark-ups applied on the market within similar transactions between independent companies – those companies which are not affiliated). Related to this analysis, we identified some practical issues which are strongly determined by the different internal regulations of the countries of the world (here we refer to regulations related to the deadlines for the documentation of the arm's length principle). Mainly, we identified the following two situations:

Situation 1: due to these internal regulations, in order to perform the comparability analysis, companies cannot use public financial information (which are presented within specialised databases) of independent entities for the year in which the related party transactions were carried out, because this is not available. For a good understanding of this situation, we provide the following examples:

- certain countries (e.g. Romania, Italy, Spain etc.) require the documentation of the arm's length principle of the related party transactions performed during a year until the term of the submission of the corporate income tax return for that year. Taking into consideration that the financial statements for the same year (which provide the necessary information for the comparability analysis) are submitted after the date of the corporate income tax return, in order to document the arm's length principle of the related party transactions, companies will deal with a lack of financial information for independent entities for that year. Given this, the approach adopted by these companies is to use financial information available for independent entities for previous years of the year in which the related party transactions were performed. Practically there is performed a comparison between the profitability obtained by a company during a year, from a certain related party transaction, with an average profitability obtained by comparable independent entities during previous years (for example the profitability obtained in 2015 is compared with the average one obtained by comparable independent entities during 2012–2014);
- certain countries (e.g. Czech Republic, Bulgaria, Croatia, Germany, Estonia etc.) do not require companies to document the arm's length principle of the related party transactions until a fixed deadline, but only upon the request of the tax authorities. If during a tax audit the tax authorities request the documentation to be prepared until the submission date of the financial statements, as we mentioned in the above example, there will be a lack of financial information for independent entities.

Situation 2: companies can use public financial information (which are presented within specialised databases) of independent companies for the year in which the related party transactions were performed. An exemplification of this situation is presented below:

- certain countries do not require companies to document the arm's length principle of the related party transactions until a fixed deadline, but only upon the request of the tax authorities. If the tax authorities request the documentation to be prepared after the submission date of the financial statements, there will not be a lack of financial information for independent entities for the year under analysis. In this case the comparison is performed between the profitability obtained by a company during a year, from a certain related party transaction, with an average profitability obtained by comparable independent entities during previous years, but also including the year under analysis (for example the profitability obtained in 2015 is compared with the average one obtained by comparable independent companies during 2013–2015).

However, an issue which could arise in this situation is represented by the fact that if companies do not document the compliance of the related party transactions with the arm's length principle until the submission date of the financial statements, these companies are not able to disclose the statement mentioned within paragraph 23 of IAS 24.

Summarizing, there could be met two practical approaches used by companies in order to substantiate the arm's length principle: the use of financial information from previous years to the year in which the transaction was carried out or the use of financial information from previous years, but also including the year in which the related party transaction was performed. In this context, one research question that could arise is if these two different approaches conduct to different conclusions regarding the compliance with the arm's length principle or if these conduct to the same conclusion. Therefore, **the second and the main objective** of this paper was to find an answer to this question.

We were motivated to achieve the two objectives mentioned above due to the significant impact of the related party transactions on financial statements and also due to the novelty of the arm's length principle as a research topic. The originality of the paper is represented by the illustration of the impact which could have the two practical approaches, determined by the situations presented above, on the conclusion regarding the compliance of the related party transactions with the arm's length principle. We consider that the article could present importance for the users of the financial situations and for the professionals from the accounting and finance area in order to understand the mechanism of the arm's length principle, but also for the countries over the world in order to assess if the deadlines imposed for the documentation of the arm's length principle have a significant impact on the analysis performed by companies. Given this, we consider that our study contributes to the arm's length principle literature and in the same time could represent a starting point for future research.

The rest of the paper is organized as follows. Section 2 discusses the background literature on the analysis that should be performed in order to document the compliance of the arm's length principle. Section 3 describes the research methodology. Section 4 presents the study case. Section 5 presents the results of the analysis. In the final section, the conclusions are accompanied by a description of tentative avenues of research.

2. DOCUMENTATION OF THE ARM'S LENGTH PRINCIPLE

According to the arm's length principle, the price charged between related parties should be the price that would be paid by unrelated parties, for similar goods and in comparable circumstances (Choe and Matsushima, 2013). In order to prove the compliance of the related party transactions with the arm's length principle, companies should perform a detailed analysis and prepare a documentation in this respect. International guidelines related to this analysis are provided by the Organization for Economic Co-operation and Development (OECD) within *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (OECD, 2010). Most of the countries of the world adopted the provisions of OECD Transfer Pricing Guidelines in their domestic legislation.

Rossing *et al.* (2017) pointed out that the arm's length principle "works on the basis of comparability" between related party transactions and comparable market transactions. The authors noted that the OECD Transfer Pricing Guidelines outlines four main steps related to the comparability analysis needed for the substantiation of the arm's length price, as follows:

- Step 1: identification of the related party transaction – here is provided an overview of the transaction (i.e. are identified the terms and conditions);
- Step 2: functional analysis – here are identified functions performed, risks incurred and assets used by each company involved in the transaction;
- Step 3: identification of the appropriate transfer pricing method;
- Step 4: performing of the comparability analysis.

All steps presented below should be followed in cascade because based on the first step is performed the functional analysis which influences the decision regarding the selection of the transfer pricing method. The functional analysis and the method selected determine how the comparability analysis will be performed. In the end, based on the comparability analysis is presented the conclusion regarding the compliance with the arm's length principle.

2.1 Functional analysis

The functional analysis represents an overview of the functions performed (i.e. key activities), risks incurred and assets used by each company (Devonshire-Ellis *et al.*, 2011).

Based on the functional analysis there are distinguished three main categories of companies: the manufacturers, the distributors and the services providers. Further on, each of these three categories is divided in subcategories, as follows (Herksen, 2009):

- manufacturers: toll manufacturer, contract manufacturer, fully fledged manufacturer;
- distributors: commission agent, commissionaire, classic buy-sell distributor, fully fledged distributor;
- service providers: shared service centre, contract service provider, sophisticated service provider.

Table 1 below presents the functions, risks and assets which allow the distinguishing between the different type of manufacturers and distributors. This table does not presents all the functions performed, risks incurred and assets used by each type of manufacturer/distributor, but only those which are different from a type to other. Those functions/risks/assets which are common for all the types are not presented.

Table 1. Functions, risks and assets for manufacturers and distributors

Manufacturers				
Functions/risks/assets	Toll manufacturer	Contract manufacturer	Fully fledged manufacturer	
Functions performed				
Acquisition of raw materials	n/a	✓	✓	
Consignment of raw materials	✓	n/a	n/a	
R&D activity	n/a	n/a	✓	
Title to finished goods	n/a	✓	✓	
Marketing and advertising	n/a	n/a	✓	
Sale to independent clients	n/a	n/a	✓	
Warranty and repair	n/a	n/a	✓	
Risks incurred				
R&D risk	n/a	n/a	✓	
Market risk	n/a	n/a	✓	
Inventory risk	n/a	✓	✓	
(Product) liability risk	n/a	✓	✓	
Assets used				
Specific valuable manufacturing intangibles	n/a	n/a	✓	
Distributors				
Functions/risks/assets	Commission agent	Commissionaire	Classic buy-sell distributor	Fully fledged distributor
Functions performed				
Title to goods	n/a	n/a	✓	✓
Warehousing and logistics	n/a	n/a	✓	✓
Purchase planning	n/a	n/a	n/a	✓
Quality control	n/a	n/a	n/a	✓
Warranty and repairs	n/a	n/a	n/a	✓
Risks incurred				
Inventory risk	n/a	n/a	n/a	✓
(Product) liability risk	n/a	n/a	✓	✓
Assets used				
Marketing intangibles	n/a	n/a	n/a	✓

✓ - function is performed/risk incurred/assets used; n/a – function is not performed/risk is not incurred/assets are not used

Source: own processing, based on the classification performed by Herksen (2009)

Within a related party transaction, the compensation should reflect the function performed, risks incurred and assets used by each company (Radolovic, 2012). For example, the profit obtained by a contract manufacturer should be greater than the profit obtained by a toll manufacturer, and the profit obtained by a fully-fledged manufacturer should be greater than that recorded by a contract manufacturer.

The functional analysis has a high impact on the following two steps, influencing both the selection of the transfer pricing method and the comparability analysis. This is due to the fact that before selecting a method and performing the comparability analysis there should be chosen one company of those participating in the related party transaction, which will be the tested party. According to the OECD Transfer Pricing Guidelines, the tested party “should be consistent with the functional analysis of the transaction”. The general rule is that the tested party should be that company which has the less complex functional analysis, as for this company can be found the most reliable comparables (OECD, 2010).

2.2 Transfer pricing methods

The OECD Transfer Pricing Guidelines presents five transfer pricing methods that should be used in order to test the compliance of the arm's length principle, as follows:

- *Comparable Uncontrolled Price (CUP) Method* is based on the comparison of prices charged within a transaction performed between related parties with prices charged by independent companies performing a similar transaction, in comparable circumstances. This method cannot be applied if there are material differences between the two transactions (i.e. the related party transaction and the transaction carried out between independent companies) – for example if the type of goods traded is not the same, the quantities traded are not comparable, the markets are not similar etc. (Ondrušová, 2016).
- *Cost-Plus Method* is used when the analysed transaction is represented by the production of goods or provision of services. Based on this method it is compared the gross mark-up added by the manufacturer/service provider to the costs incurred in order to produce those goods/provide the services (Matei and Pirvu, 2011).
- *Resale Price Method* is used when the analysed transaction is represented by the sale to independent companies of goods purchased from a related party (i.e. when the tested party is a distributor). Based on this method it is compared the gross margin applied by the distributor in order to sell the goods. There is considered that if the gross margin is at market level, then the price at which the goods were purchased from the related party is also at market level (Hughes and Nicholls, 2010; Jain, 2015).
- *Transactional Net Margin Method (TNMM)* operates in a similar manner to the cost-plus method and resale price method, the difference being that within the TNMM method are compared net margins/mark-ups, while within the other two methods are compared gross margins/mark-ups. TNMM is the most used method in practice due to the fact that companies deal with a lack of information regarding the expenses classified by destination, so that it is impossible to determine the gross mark-up/margin of similar independent companies (Luca, 2009).
- *Profit Split Method* is applied when the related parties are involved in highly integrated activities or when the related parties bring unique/ valuable contributions to the transaction – for examples uses unique intangibles. In this situation, it would appropriate to apply the profit split method, as independent companies “could wish to share the profits in proportion to their respective contributions” (Chand and Wagh, 2014).

When applying the transfer pricing methods, the profitability indicators (i.e. the margins or the mark-ups) should be computed as a ratio between the operational result obtained from the analysed transaction and a certain base (i.e. costs, sales or assets). The base should be an indicator which is not affected by transactions with related parties (Luca, 2009). For example, in the case of a manufacturer, the sales are recorded in relation to a related party, while the costs are incurred in relation to independent suppliers. Given this, for a manufacturer, the net profitability indicator (i.e.

the mark-up) should be computed as a ratio between the operational results and the operational costs related to the transaction analysed.

2.3 Comparability analysis

In order to perform the comparability analysis, at least one of the methods described above should be applied. In this respect there could be used internal or external comparables. The internal comparables can be used only if one of the companies involved in the related party transaction was also involved in similar transactions with independent companies. If this situation does not exist, then the external comparables should be used (OECD, 2010). In order to identify external comparables, there are used various specialised databases such as Amadeus, Orbis, TP Catalyst etc. These databases contain information about various categories of companies. Information presented within the databases is those submitted by companies to the Trade Register.

To identify the external comparable companies, there are used various criteria/filters related to the geographic location, business activity (i.e. activity codes), independence status, availability of information etc. (Cools, 1999). The search process of external comparables (known as the benchmark study) is performed until it is obtained a sufficient number of companies. For example according to the practice from Romania, a sufficient number is of minimum 5 comparables and if this number is not reached performing the search on the Romanian market, the search should be extended on the EU market (Order 442/2016). In the end, the comparable companies should be those which have a similar functional profile with that of the tested party.

In order to determine if a transaction is compliant with the arm's length principle, a comparison between the profitability indicator obtained by the tested party from that transaction and the profitability indicator registered by the comparable companies identified, should be performed. Within the OECD Transfer Pricing Guidelines it is recommended to compute the profitability of each comparable company as a multiple year average. In this respect, there should be used the last years for which the financial information is available. The justification of the multiple year average is that "to neutralize the negative influences from change in economic conditions, short-term foreign exchange fluctuations, seasonal work, frequent law alterations, etc. and make economic conditions for different companies as equal as possible" (Dessatniuk and Cherevko, 2015). According to Dessatniuk and Cherevko (2015), transfer pricing practitioners rely on three-year average results. Moreover, the authors noted that in order to increase the reliability of the results, an inter-quartile range should be determined based on the average profitability indicator computed for each comparable company. The inter-quartile range represents the range from 25th to the 75th percentile of the average profitability indicator of the comparable companies. The purpose of this range is to exclude potential outliers (i.e. extreme values).

The Romanian legislation requires the computation of an inter-quartile range in order to assess if a transaction complies or not with the arm's length principle. If the mark-up/margin applied within that transaction is situated within the range, then the transaction complies with the arm's length principle.

3. RESEARCH METHODOLOGY

The research methodology used within this paper is both, qualitative and quantitative. We detailed below the research methodology used in order to achieve the two objectives presented within the first chapter.

To achieve the first objective (i.e. to illustrate the steps that a company should follow in order to substantiate that the related party transactions in which it is involved, comply with the arm's length principle), we applied initially a qualitative research methodology. In this respect, we performed a detailed analysis of the provisions of the OECD Transfer Pricing Guidelines related to the steps that should be applied and how these should be applied in order to test the arm's length principle. After the understanding of these provisions, we performed a quantitative research, using

the case study as a research tool. Within the case study we shown a practical application of the four steps needed for a comparability analysis (Rossing *et al.*, 2017).

Within the first step we performed a description of a related party transaction. When applying the second step we performed a comparison between functions carried out, risks incurred and assets used by each company involved in the transaction. In this step we also selected a tested party. Within step 3 we presented reasons for accepting/rejecting a transfer pricing method. In order to illustrate how should be applied the last step, we selected a sample of companies using in this respect the Amadeus database, online version, number 2704, from March 2017. Criteria applied in order to select the sample are detailed within Chapter 4 below. Further on, to this sample we applied additional criteria in order to find comparable companies with the one tested by us. All criteria applied take into consideration the requirements of the OECD Transfer Pricing Guidelines. Where for the application of a criterion, were required provisions of a local legislation, we used the Romanian ones as we already have a good understanding of them. In Chapter 4 we mentioned the criteria which took into consideration the provisions of the Romanian legislation.

The second objective (i.e. to show the impact of the two approaches presented in the first chapter, on the conclusion regarding the compliance with the arm's length principle) was achieved through the illustration of the last step of the comparability analysis. More exactly, after the identification of the final set of comparable independent companies, we computed the average profitability indicator for each of these companies. There were performed two computations, corresponding to the two situations detailed within the first chapter (i.e. the first computation considered the period 2012–2014, while the second one the period 2013–2015). In the end, we compared the results obtained by performing the two computations. Based on this comparison, we presented the final conclusion regarding the compliance with the arm's length principle.

4. STUDY CASE – ILLUSTRATION OF THE MAIN STEPS RELATED TO THE ANALYSIS PERFORMED IN ORDER TO TEST THE COMPLIANCE WITH THE ARM'S LENGTH PRINCIPLE

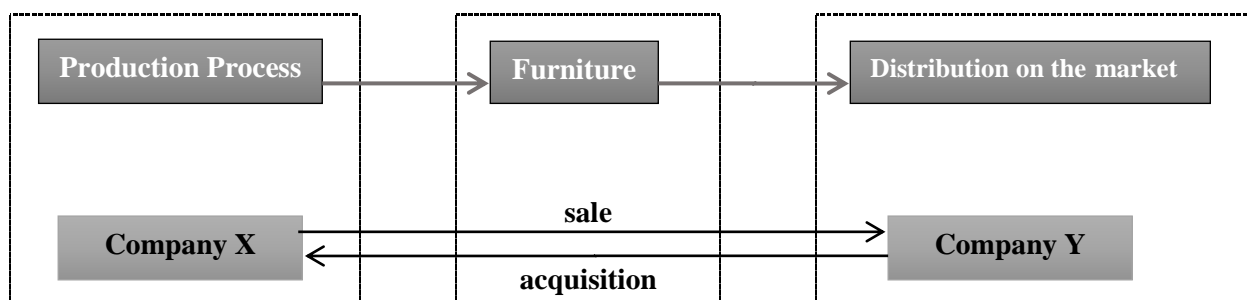
During 2015, Company X produced furniture for the affiliated entity Company Y. The finished products are sold by Company X to Company Y to a price determined based on the total costs incurred by Company X in order to produce those goods, plus a mark-up. Company X manufactures this kind of goods only for Company Y and Company Y purchases furniture only from Company X. The furniture is sold by Company Y to its clients, which are independent companies.

In order to analyse if the price charged by Company X to Company Y complies with the arm's length principle we followed the steps required by the OECD Transfer Pricing Guidelines and outlined by Rossing *et al.* (2017). The application of these steps is presented below:

Step 1: Identification of the related party transaction

The related party transaction is represented by the sales of furniture by Company X and acquisition of it by Company Y. The figure below presents the flow of the related party transaction

Figure 1. Flow of the related party transaction



Source: own processing

Within this step should be summarised the terms and conditions in which the related party transaction is carried out. This should be performed based on the selling – buying agreements concluded between Company X and Company Y and also based on discussions with the representatives of both companies. We presented the terms and conditions in the next step in order to illustrate a link between these and the function performed/risk incurred/asset used by each company.

Step 2: Functional analysis

Table 2 below presents the functional analysis, illustrating the functions performed, risks incurred and assets used by each company. Next to each function/risk/asset are presented the terms and conditions based on which these were determined.

Table 2. Functional analysis

Description	Company X	Company Y
Functions performed		
<i>Acquisition of raw materials</i> (timber, wood) – is performed by Company X from various specialised suppliers.	✓	n/a
<i>Purchase/ production planning</i> – Company Y performs forecasts on sales and based on these establishes a purchase planning. Company Y provides to Company X with this planning, detailing the requirements regarding quantities and timing of delivery. Based on this, Company X establishes a production planning.	✓	✓
<i>Production of furniture</i> – is performed by Company X within its own factory.	✓	n/a
<i>Design of the furniture models</i> – is performed by Company Y. Practically, Company Y develops drawings regarding the design of the furniture and owns the related patents. Company Y provides Company X with the documentation and drawings regarding the design of the furniture in order for Company X to use them in the production process.	n/a	✓
<i>Packing</i> – Company X is responsible for providing an appropriate packaging to protect the products throughout the shipment, from the expedition to destination.	✓	n/a
<i>Transport</i> – Company Y is responsible to organize the transport of goods from the warehouse of Company X to its own warehouse.	n/a	✓
<i>Quality control</i> – Company Y performs a quality control of the goods purchased from Company X. This control is performed at the time of the goods reception. Also, Company X performs a quality control of the raw materials used in production.	✓	✓
<i>Warehousing</i> – given the fact that the production is performed by Company X based on a planning, Company Y being obliged to purchase the goods on the delivery time agreed, the warehousing of the finished products is performed by Company X only for a short period of time (i.e. from the finishing of the production process until the delivery date). However, Company X performs the warehousing of semi-finished products and of raw materials during the production process. Company Y performs the warehousing of the finished products for a longer period, until they are delivered to the final client. More exactly, Company Y works both, based on orders and stocks.	✓	✓
<i>Warranty and repair</i> – the warranty is granted by Company Y. Therefore, this	n/a	✓

Description	Company X	Company Y
company is also responsible for the repair of the goods during the warranty period.		
<i>Marketing and advertising</i> – Company Y organizes marketing and advertising campaigns in order to identify new clients and promote the goods. This company also participates on different events and trade fairs.	n/a	✓
<i>Sales and distribution</i> – is performed by Company Y which owns showrooms and stores.	n/a	✓
Risks incurred		
<i>Market risk</i> – occurs when a company faces either fierce competition and unfavourable market conditions or incapacity to develop markets or services for target customers. If the number of customers of Company Y decreases, such fact would adversely affect the turnover of this company. However, this situation will not affect the turnover of Company X, because Company Y is obliged to purchase the quantities mentioned within the purchase planning.	n/a	✓
<i>Inventory risk</i> – represents the risk that a company registers stocks of finished products or raw materials over a long period of time. This risk also involves the fact that goods being degraded, obsolete, stolen or exposed to natural calamities. Given that both companies perform the warehousing function, the inventory risk is also born by both.	✓	✓
<i>(Product) liability risk</i> – Company Y is responsible to perform the quality control of the finished goods at the time of the reception. Given this and taking into account that the warranty function is carried out by Company Y, this company is responsible to remedy the defects associated with the products delivered to its customers. On the other hand, Company X is responsible to remedy the defects identified by Company Y during the quality control process.	✓	✓
Assets used		
<i>Tangible assets</i> (warehousing, buildings, production equipment etc.)	✓	✓
<i>Intangible assets</i> (patents and trademarks)	n/a	✓

Source: own processing

Based on the functional analysis presented above, we can conclude that Company X is a contract manufacturer, while Company Y is a fully-fledged distributor.

Further on, in order to apply the following two steps needed in order to determine whether the remuneration received by Company X from Company Y complies with the arm's length principle, we have selected Company X as the tested party. The reason for which we selected Company X as the tested party is that this company is the least complex party to the transaction.

Step 3: Selection of the transfer pricing method

Given that Company X manufactures furniture only for Company Y and Company Y purchases this kind of goods only from Company X, there could not be used internal comparables, but only external comparables from public sources.

Below we presented the reasons regarding the acceptance/rejection of each transfer pricing method:

- CUP method – given the fact that there is not available public information regarding prices charged between independent companies for the buy-sell of furniture, we rejected the application of this method;
- cost-plus method and resale price method – as we already mentioned within Chapter 2 of this paper, the specialised databases do not contain information regarding the expenses classified by destination, so that it is impossible to determine the gross profit mark-up of similar independent companies. To avoid this problem, net profitability indicators should be used. Given this, we rejected the application of both, the cost-plus method and the resale price method;
- TNMM – given the fact that this method involves the comparison of net profitability indicators, we selected it in order to analyse if the remuneration paid by Company Y to Company X complies with the arm's length principle. As we described within Chapter 2, the TNMM can be applied in a similar manner with both, the cost-plus method and the resale

price method (the difference being that these two methods compare gross profitability indicators, while the TNMM compares net ones). Taking into consideration that the selected party is Company X, we chose the TNMM applied in a similar manner to the cost-plus method, and we rejected the TNMM applied in a similar manner to the resale price method (which would have applied if the tested party had been Company Y);

- profit split method – considering that the related party transaction analysed does not involve interrelated activities which determine the impossibility to identify comparables, and that the entities involved in transaction do not provide important intangible assets, we rejected this method.

Conclusion of the process regarding the selecting of the transfer pricing method

Summarizing, TNMM applied in a similar manner to the cost-plus method is the most appropriate method that should be applied in order to analyse the compliance with the arm's length principle of the price charge by Company X to Company Y.

Step 4: Comparability analysis

Given that the tested party is Company X and the selected method is TNMM applied in a similar manner to the cost-plus method, within this step we compared the net profitability indicator obtained by Company X from the sale of furniture to Company Y with the net profitability indicators obtained by comparable independent companies.

Strategy search applied in order to select the sample of comparable independent companies

In order to identify comparable independent companies we used the following categories of criteria:

- criteria applied in the Amadeus database: in this phase we obtained an initially sample of companies;
- quantitative and qualitative criteria: we submitted the initially sample of companies returned by the Amadeus database to further analysis, applying manual quantitative and qualitative screenings.

Table 3 below presents a detailed description of each type of criteria applied.

Table 3. The search strategy

<i>Details</i>	<i>Description of the criterion applied</i>
I. Criteria applied in the Amadeus database	
1. Criterion applied: status of activity	
This criterion was applied in order to eliminate inactive companies, factor that could distort the financial results.	We have selected active companies and companies with an unknown status.
2. Criterion applied: geographic criterion	
The geographic criterion is established by each country, within the domestic legislation. For example, in Romania the comparability analysis should take into account territorial criteria in the following order: national, European, pan-European, international.	Initially we selected companies which perform their activity on the Romanian market. Given that we did not obtain a sufficient number of comparables (i.e. 5), we extended the search on the EU market.
3. Criterion applied: the activity code	
By using the activity code, entities performing activities similar to those analysed can be identified. In this respect, we used the NACE REV. 2 classification.	We selected companies which have the following activity codes related to the manufacture of furniture: <ul style="list-style-type: none"> • 3102 – Manufacture of kitchen furniture; • 3103 – Manufacture of mattresses; • 3109 – Manufacture of other furniture.
4. Criterion applied: independence	
The purpose of applying this criterion is to ensure the independence of comparable companies in order to eliminate the risk of intra-group transactions (i.e. it is questionable if the intra-group transactions are at market level, and thus they should be eliminated). When applied this type of criterion, we considered the Romanian legislation, according with a 25% ownership percentage is used in order to analyse the independence of a company (i.e. in order to determine if that company is an affiliated company). We applied various criteria in order to ensure the independence of the companies from the sample, as follows:	

<i>Details</i>	<i>Description of the criterion applied</i>
4.1 Type of financial statements	
Only companies with financial data from unconsolidated financial statements were selected.	
4.2 Shareholders	
We selected companies in which no shareholder (legal entity or individual) holds directly or indirectly a percentage of 25% or greater than 25% of the shares.	
4.3 Subsidiaries	
We eliminated companies that own an interest in subsidiaries of 25% or more.	
5. Criterion applied: multiple years	
In order to perform an analysis of the year 2015 (when the related party transaction analysed taken place) we used the weighted average of the indicators from the three most recent years. According to the provision of the OECD Guidelines, in order to minimize the fluctuations caused by exceptional events, it is recommended to perform an analysis based on multiple years.	<p>In our analysis, we used the financial data of comparable companies, according to each of the two situations presented within Chapter 1 of this paper, as follows:</p> <ul style="list-style-type: none"> • situation 1: years between 2012 and 2014; • situation 2: years between 2013 and 2015.
II. Quantitative criteria	
1. Criterion applied: availability of financial information	
The purpose of this filter is to eliminate companies that do not have financial data available in order to calculate the profitability indicators needed to perform the comparability analysis.	We eliminated companies which do not have financial information available in Amadeus for all the years analysed. More exactly, if a company did not have available the financial information for all the three years analysed, it was eliminated from the sample.
III. Qualitative criteria	
1. Criterion applied: availability of information	
The purpose of this filter is to ensure availability of sufficient information, based on which to perform the selection of the final set of comparable companies.	We eliminated companies which do not have sufficient public data in order to analyse their business activity. More exactly, we eliminated companies which did not have an official web-site or have this site under construction at the moment of our search (i.e. April 2017). We also eliminated those companies which have a web-site with an insufficient content in order to determine if they are comparable with the tested party (i.e. Company X).
2. Criterion applied: independence	
The purpose of applying this criterion is to ensure the independence of comparable companies in order to eliminate the risk of intra-group transactions.	We eliminated companies, which according with the information published on their web-site, are member of a group of companies.
3. Criterion applied: comparability between the activities carried out	
The purpose of applying this filter is to ensure that the entities selected in the final set are comparable to the tested party (i.e. Company X).	For the companies which were not eliminated until this last stage of the search, we performed a detailed analysis of the information published on their web-sites and eliminated those companies which do not have a functional profile similar with that of Company X (i.e. have other business activity). Companies accepted as comparables are those which manufacture furniture and are contract manufactures (i.e. perform an activity similar with that performed by Company X).

Source: own processing

5. RESULTS AND INTERPRETATIONS REGARDING THE IMPACT OF THE TWO APPROACHES

Results obtained by performing the search on the Romanian market

After applying the first category of criteria (i.e. those applied in Amadeus database), we obtained an initial sample of 14 companies. After applying also the quantitative and qualitative criteria we obtained a final set of 2 comparable independent companies. Table 4 below presents, for each of the two approaches detailed in the first chapter of this paper (i.e. using the period 2012–2014 vs. the

period 2013–2015), the number of companies eliminated after applying the quantitative and qualitative criteria.

Table 4. Results on the RO market

Summary of selection criteria	Period 2012-2014		Period 2013-2015	
	No. of companies checked	No. of companies rejected	No. of companies checked	No. of companies rejected
Initial sample (returned by Amadeus)	14			
Quantitative criteria				
Lack of financial information	14	0	14	0
Qualitative criteria				
Insufficient information	14	6	14	6
Member of a group	8	0	8	0
Other business activity	8	6	8	6
No. of companies accepted	2		2	

Source: own processing

As can be observed, 2 comparable companies remained in the sample after the application of all criteria. Given that this number is not sufficient to determine an inter-quartile range, we have expanded our search on the EU market. According to the practice from Romania, a sufficient number is represented by minimum 5 comparables.

Results obtained by performing the search on the EU market

After applying the first category of criteria (i.e. those applied in Amadeus database), we obtained an initial sample of 143 companies. After applying also the quantitative and qualitative criteria we obtained a final set of 9 comparable independent companies. Table 5 below presents, for each of the two approaches detailed in the first chapter of this paper (i.e. using the period 2012–2014 vs. the period 2013–2015), the number of companies eliminated after applying the quantitative and qualitative criteria.

Table 5. Results on the EU market

Summary of selection criteria	Period 2012-2014		Period 2013-2015	
	No. of companies checked	No. of companies rejected	No. of companies checked	No. of companies rejected
Initial sample (returned by Amadeus)	143			
Quantitative criteria				
Lack of financial information	143	37	143	42
Qualitative criteria				
Insufficient information	106	25	101	24
Member of a group	81	8	77	9
Other business activity	73	64	58	59
No. of companies accepted	9		9	

Source: own processing

For each of the 9 companies selected we computed the average profitability indicator for the period 2012-2014 and the average one for the period 2013-2015. Given that the selected transfer pricing method is TNMM applied in a similar manner to the cost-plus method, the profitability indicator is net cost plus (NCP), computed based on the below formula. We used this indicator, as we already mentioned within Chapter 2 of this paper, the profitability indicator should be a ratio between the operational result and an indicator which is not affected by related party transactions (i.e. in case of a manufacturer this indicator being the expenses).

$$NCP = \frac{\text{Operating Profit}}{\text{Operating expenses}} = \frac{\text{Operating margin}}{1 - \text{Operating margin}}$$

Appendix 1 presents the 9 selected comparable independent companies identified, their NCP indicator for the period 2012–2015, the average NCP computed for both periods (i.e. 2012–2014 and 2013–2015) and the financial information based on which was computed the profitability indicator.

Inter-quartile range

Based on the average NCP (i.e. WNCP) computed for the comparable independent companies selected above, we determined an inter-quartile range for both periods (i.e. 2012 – 2014 vs. 2013–2015). This range was determined using the quartile function of the Microsoft Excel application. Table 6 below presents the inter-quartile range.

Table 6. Inter-quartile range

<i>Inter-quartile range</i>	<i>WNCP 2012-2014</i>	<i>WNCP 2013-2015</i>
Minimum	-3.21%	-2.31%
Quartile 1	0.61%	0.11%
Median	1.55%	1.74%
Quartile 3	1.82%	2.55%
Maximum	7.11%	6.44%

Source: own processing

Conclusion of the comparability analysis

Using the financial information of independent companies from the period 2012–2014, as could be observed from the above table, the inter-quartile range spans from 0.61% to 1.82% with a median of 1.55%. The inter-quartile range obtained by using financial information from the period 2013–2015 is between 0.11% and 2.55% with a median of 1.74%.

Given this, we can conclude that the inter-quartile range does not change significantly from a period to other. The median of the inter-quartile range recorded a slow increase in the period 2013–2015 compared with the one from 2012–2014. However, this result should be correlated with the evolution of the European market of the contract furniture manufacturer, which in 2015 compared with 2014 recorded also a slow increase (<https://www.worldfurnitureonline.com/research-market/-0074172.html>).

Therefore, the using of different approaches with regards to the multiple years considered in the analysis have a significant impact on the inter-quartile range and on the final conclusion about the compliance with the arm's length principle, only if in the year under analysis (2015 in our study case) it is recorded a significant evolution on the market in which the transaction is performed.

On the other hand, the small variation of the inter-quartile range among the two situations could also impact the final conclusion. For example if Company X adds a mark-up of 2% on the costs incurred in order to manufacture the furniture sold to Company Y, according to the first situation there is not respected the arm's length principle, as the mark-up of 2% is not situated within the inter-quartile range, while using the period 2013–2015 the related party transaction analysed complies with the arm's length principle.

6. CONCLUSIONS AND DISCUSSIONS

Regarding the steps that should be followed in order to document the compliance with the arm's length principle, it is very important to apply them in cascade, as the results from a previous step influence the analysis from the next step.

Further on, the main conclusion of our study is that the deadline established by countries for the documentation of the arm's length principle influences the approach which will be used by

companies in respect to the years considered for the comparability analysis and due to this, also the final conclusion about the compliance with the arm's length principle. Given this, we consider that the substantiation of the arm's length principle (as it is required by IAS 24) is a subjective analysis which is influenced by the domestic legislation of the countries. In this context, the main question that could arise is that if there is necessary a rule which should be applied by all countries. This rule could be related either to the deadline for the documentation of the arm's length principle or to the approach used for the selection of the years included in the comparability analysis. At this moment, if a related party transaction is analysed within a jurisdiction, it could comply with the arm's length principle and, if it is analysed in another jurisdiction, it may not comply with this principle. This situation may conduct to a double taxation of results within a multinational group of companies.

The limits of our research are represented by the criteria applied in order to identify the final set of comparable companies. These criteria reflect our understanding of the provisions of the OECD Transfer Pricing Guidelines. Another limit of the research is represented by the small number of identified comparables. However, with all these limits we consider that our research contributes to the arm's length principle literature.

Future research directions involve the performing of the comparability analysis for a company which operates in an industry that recorded a significant evolution in the year in which the related party transaction took place, compared with the previous years. The main objective of this research will be to identify in which measure a significant evolution of the industry impact the inter-quartile range determined in the two situations (presented in the first chapter).

In addition, another research direction may take into consideration the different percentage used by countries in order to determine the affiliation relationship between companies and to analyse if this percentage impacts significantly the inter-quartile range.

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Appendix 1. Financial information for the comparable independent companies, for the period 2012–2015

Company name	BvD Identification No.	Country	Operating revenue (Turnover) th EUR				Operating P/L [=EBIT] th EUR				NCP (%)				WNCP 2012 -	WNCP
			2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015	2014	2013 - 2015
Adriatica S.R.L.	IT01114800418	Italy	4,156	4,222	4,127	3,938	96	52	76	72	2.36	1.26	1.87	1.86	1.82	1.66
Cocinas Terol SL	ESB03446358	Spain	579	812	847	1,015	50	49	49	47	9.55	6.39	6.18	4.86	7.11	5.74
Comodex Societate Cooperativa Mestesugareasca	RO1200872	Romania	509	570	637	548	9	9	8	(16)	1.72	1.61	1.35	-2.76	1.55	0.11
Erdholz SRL	RO18274831	Romania	1,782	1,628	1,742	1,726	36	35	19	33	2.06	2.21	1.10	1.95	1.78	1.74
Glicerio Chaves Horneros SL	ESB13038096	Spain	42,145	39,930	41,127	46,817	3,262	2,191	1,133	4,416	8.39	5.81	2.83	10.42	5.65	6.44
Muebles Orga SL	ESB30082135	Spain	1,272	1,051	1,110	1,187	(65)	(14)	10	(7)	-4.86	-1.32	0.88	-0.62	-1.98	-0.35
Nadem S.R.L.	IT03518400878	Italy	4,013	3,186	3,023	2,456	(84)	(334)	80	49	-2.06	-9.50	2.72	2.05	-3.21	-2.31
Netcucine S.R.L.	IT05506290724	Italy	36,169	35,629	40,437	40,985	728	820	100	1,188	2.05	2.36	0.25	2.98	1.49	1.83
SAN Martino S.R.L.	IT02235610413	Italy	3,051	2,293	2,731	2,602	(45)	49	45	96	-1.46	2.19	1.66	3.81	0.61	2.55

SOME ASPECTS RELATED TO THE NATURE, RECOGNITION AND MEASUREMENT OF VIRTUAL ASSETS: BE AWARE OF THE POSSIBILITY OF CONTROLLING THESE ASSETS

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Abstract

This paper discusses Virtual Assets and some of the controversial aspects related to their nature, recognition, evaluation and measurement. The importance of the topic has grown in the course of the last years, because of the emergence of phenomena like “the new economy” and emergence of virtual transactions. This trend has generated accounting challenges related to the recognition and measurement of this type of Assets. This present paper explores some of these issues, among other points highlighting the controversies related to the issue of controlling such resources, reviewing some of the challenges brought to accountants and (when existing) some of the potential solutions brought by IFRS

Key words: *Intangible Assets, Virtual Assets, Subjectivity, IFRS*

1. INTRODUCTION

This research is focused on a discussion of the nature, recognition’ challenges and measurement of Virtual Assets, which are emerging as a source of income for companies and individuals. Related research questions are:

- 1) What are Virtual Assets?
- 2) What are the challenges related to their recognition as Assets in terms of IFRS rules?
- 3) How can they be measured in terms of IFRS rules ?

Virtual Assets are defined as “electronic data stored on a computer or the internet. These assets include emails, digital photos, electronic bank statements, domain names, and online accounts” (Grau, 2011). Virtual Assets are intangible and are, consequently, a segment of the wider category of Intangible Assets. In order to offer a better framework of the whole dimension of Virtual Assets, this paper will also cover a general discussion of the emergence of Intangible Assets.

This paper is focused on:

- 1) Providing a general overview of the growth in importance of Intangible Assets in general, of which Virtual Assets are part
- 2) Providing a discussion of the challenges related to the very recognition of Virtual Assets in terms of IFRS rules
- 3) Discussing the challenges related to the measurement of Virtual Assets in terms of IFRS rules

The methodology does not make use of any primary or secondary data. Indeed, the author offers a critical review of some specific parts of IFRS useful to address those challenges related to the recognition and measurement of Virtual Assets. This paper will be divided into four main parts. The first section will discuss the emergence of Intangible Assets in general. The second will expound the nature and growth of importance of Virtual Assets. The third part will focus on the challenges related to the recognition of Virtual Assets in terms of IFRS rules. Whereas the fourth part will focus on how Virtual Assets can be measured in terms of IFRS rules. Conclusion and references will follow.

2. THE EMERGENCE OF INTANGIBLE ASSETS AS A CHALLENGE FOR THE TRADITIONAL REPRESENTATION OF ASSETS

The various challenges related to Virtual Assets are framed as a consequence of the proliferation of virtual transactions and immaterial Assets which has, already since a long time, modified the traditional representation, recognition and measurement of Assets. The classical trend had been, for a long time, limited to recognizing only tangible Assets and incorporating invisible (intangible) resources within the wide concept of “Goodwill” (Johnson and Petrone, 1998; Alfredson et.al., 2009). This approach was devised to respect those ideas according to which Assets must be real resources, countable and directly measurable in terms of production costs, purchase costs and market sale value. The advantage was that the financial statements were gaining in terms of objectivity, because, for example, the historical cost of an item was directly and objectively measurable. Intangible items were considered to be unreliably recognizable and even less reliably measurable for being classified as Assets and included in a Balance Sheet (Jerman and Manzin, 2008). This traditional approach did not resist the challenges brought by an increasing surge in importance of Services, which are immaterial by definition. Moreover, there has been certain phenomena like the effective trade of trademarks and logos which has witnessed an increase in terms of importance and exchange values (Nobes and Parker, 2010). Furthermore, the development of the “New Economy” has increased the weight of immaterial assets within the total value and revenue sources of companies. These growing trends, with increasing intensity, have clearly created challenges to accountants (Nobes and Dumay, 2013). These challenges were not ignorable, as the risk was that a large portion of monetized and monetizable items were left out of the Balance Sheet or, eventually, generically incorporated into the category of Goodwill. The challenge has been accepted and in the course of time, the list of items directly recognized as (intangible) Assets has widened, therefore taking into account the transformations occurred in the various sectors of the worldwide economy. The emergence of Virtual Assets has added to the challenge, because these particular type of resources are also intangible (by being virtual) and do not fit within the traditional representation of Assets.

3. THE NATURE AND GROWTH OF IMPORTANCE OF VIRTUAL ASSETS

Virtual Assets are electronic data (Walker and Blachy, 2011). They can be stored in a computer or on the web. This definition includes emails, digital photos, domain names. Digital Assets may have financial value. The information contained in an email is important, it can be protected by confidentiality (thus giving origin to a financial damage and eventually to a financial claim in case of breach of confidentiality), digital photos may also be on sale (eventually when they represent a blueprint tradable on the market) thus contributing to the accruing of income or losses to a particular company. Grau (2011), quoting the Wall Street Journal, informs that at the same time when he was writing there were \$32.9 billions worth of Virtual Assets only in the United States. The same author maintains that, still in 2011, there were 32.9 billions of unclaimed Virtual Assets. This happens because the access to the exploitation of Digital Assets is normally protected by a password, which is often known only by one person. Assets can be lost in case this person leaves the working position or passes away, retrieving the data can be extremely difficult.

The growing importance of Virtual Assets has been clearly recognised both at the level of the academic literature, as well as by professional reports. The reliance put by companies on data incorporated on a computer is nowadays a central part of their strategies. A considerable part of the marketing activities and the advertising industry makes use of electronic tools like pictures and videos. A simple websearch would reveal how Large MNEs as well as Small and Medium Sized companies make a regular use of various sorts of Virtual Assets as defined at the onset of this section. Visual images or videos are effective communicative skills and they transmit a message in a way which reaches the viewers and listeners. A combination of slogans, voice tones, colours and selected images reaches the brain of the addressees, probably conveying that particular message that the

company intends to transmit. The strength of visual and video tools is well known to advertisers, sales personnel and marketing specialists.

Communication means have changed and nowadays a webchannel like Youtube is a suitable platform for the promotion of companies through web indirect advertising. These videos are protected by copyrights and trademark laws and represent a source of income for companies, considering the impact that the video may have on viewers' consumer attitudes. Moreover, in a digital economy, videos and pictures may reasonably represent an Asset for the very platform where they are posted. A video downloaded on the Youtube (or on an equivalent channel) represents a source of income not only for the company holding the intellectual rights on it, but also for the very Youtube platform. There is a growing market for the acquisition of advertising space on web platforms and the payment goes to the organiser of the web tool where the video is posted. A similar logic applies also to a social network like Facebook. The corporation managing the web social network platform (also called Facebook) draws its income from the advertising fees charged to those other companies using the Facebook space to promote their products. There is a problem regarding the recognition of the material posted on web platforms like Youtube and Facebook as Assets by those very companies owning the platforms (Facebook itself and Google who owns Youtube). The next section will explore whether these various items are effectively recognisable as Assets on the basis of existing IFRS rules.

4. RECOGNITION OF VIRTUAL ASSETS

The next point, discussed in this section, is related to the recognition of Virtual Assets. The recognition of Assets is a process which is central to their reporting in the Balance Sheet. There is a fundamental distinction between the meaning of the term Asset in accounting terms and the meaning the very word may have in other more colloquial (or in any case out of Accounting) contexts. In the field of Accounting, the definition of Assets is given by the IASB Framework as "Asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity".

There are three elements which are central to the recognition as an item as an Asset in the Balance Sheet of any entity using IFRS/IAS standards: the capacity to control the Asset, the expectation of financial benefits and the emergence from past transactions. It seems clear how Virtual Assets respect those criteria related to likely economic benefit accruing to the company and to their emerging from past transactions (purchase or internal creation).

However, there is a real issue with the capacity of the Company to control Virtual Assets and this is a main point. Controllability means the legal right to dispose of the item, modifying it, selling it, renting it or even destroying it. The extent to which holders of certain Virtual Assets like videos, pictures effectively control their resources depends on those conditions accepted at the moment of posting them and on the relevant legislation. The problem is represented by the effective capacity from the side of (for example) Facebook and Google to control those posted Assets. Videos and pictures (as well as any other material) may be deleted and edited by the posting party. This factor would, in principle, play against the possibility of the platform to invoke a legitimate recognition of the very hosted Virtual Assets. Still, the story cannot be easily concluded denying the possibility that these particular items are recognised as Assets by the hosting agency. There are controversies, involving also legal aspects, related to the conditions under which the posting party is allowed to make a free use of the hosting platform. Those parties using the services of the platforms posting their material for free agree to general terms and conditions which could eventually entail the transfer of specific rights to the platform. A discussion of the legal effect and validity of such clauses embedded in the general agreement would go beyond the scope of this present paper. However, the point relevant to our paper is the extent to which the various agreements confer a certain Control to the platform holders over the posted items. This would be central to the recognition of items as Assets according to the IASB. This is eventually an issue which would deserve specific attention.

A similar conundrum characterizes the activity of companies like Ueber and AirBandB. These do not own any of those taxi cars and accommodation places and act as pure brokers. They obtain resources from Assets over which they have no real control, still the number of cars and houses/flats they offer is their main source of income. While agreeing that these companies do not have control over the very items, one may still consider how not recognising them at all would provide an understatement of the effective amount of resources available to draw revenue from. This represents a challenge for accountants and deserves some attention.

As discussed, when Assets are posted outside of the legitimate webpage of their creator, they are in principle a source of income for the a) creating and posting as well as for b) the hosting company. The posting and creating company may legitimately expect a financial benefit from its own advertising, whereas the hosting company (i.e. Youtube, Facebook) , while eventually offering its space for free, collects advertising from third companies and eventually (more or less transparently) sells information about the content of the posts to other agents. The trick , already highlighted, is that the creating party may actually lose some controlling rights, this depending on the particular conditions agreed with at the moment of registering and/or posting the material. The issue becomes even more tricky considering that the validity of these particular agreements may be depending on specific national legislations on on-line agreements and eventually vexatious clauses. The identity of the controlling entity of a specific Virtual Asset, in such a case, risks to differ across the territories where the Assets are displayed. Existing IFRS/IAS standards are not (yet) useful in solving this particular puzzle. The effective control of the Assets may represent a challenge for Accountants and would deserve specific research attention.

5. MEASUREMENT OF VIRTUAL ASSETS

Moving from the recognition to the measurement of Assets, there are certainly some interesting remarks to formulate. Virtual Assets are (not yet) covered by any specific IFRS/IAS standard and are part of the category of Intangible Assets. The relevant standard is the IAS 38. According to this particular IAS, Virtual Assets (as Intangible) should initially be measured at cost. Subsequent measurements can follow the cost minus amortisation method and impairment. The assessment of the impairment and of the amortisation obviously rests on the usual limitations concerning the reliability of amortizing and impairing Intangible Assets (Murdoch, 2009). Alternatively, the reporting entity may follow the re-evaluation method, allowing for Fair Value assessments. Clearly, also in this particular case, any Fair Value assessment presents risks of reliability and offers space for massaging of statements. It is clear that there are little ways to obtain a perfectly reliable Fair Value of any Virtual Assets. Nonetheless, this is a common problem of the use of Fair Value in general. It is reasonable to think that devising a method for calculating the Fair Value of Virtual Assets is not less scientifically sound than devising the Fair Value of other Intangible Assets not traded in markets.

6. CONCLUSION

Virtual Assets represents an innovative aspect of Accounting practices and challenges. Still, it seems that overall existing IFRS/IAS offers a suitable set of rules and principles to recognise and measure these particular items. Still, there may be issues related to the effective capacity of the entity which is benefiting from the economic benefit to control the Asset. There can be more than one entity obtaining substantial economic benefits from an item but only one may have legitimate control over it. This fact represents a challenge because standards should neither allow for the recognition of items not controlled (otherwise the category of Assets would overexpand and abuses of all sorts could be possible) nor companies should blatantly ignore the importance of items over which the entity has no real control as for the production of revenue.

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THE EPHEMERAL VALUE OF STOCK – WHAT IFRS AND GAAP CAN(NOT) CAPTURE ACCORDING TO A CZECH CASE STUDY

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Abstract

Both the US GAAP with their “US accountants” background and the IFRS with their international drive, faced a dilemma about how to approach and value stock. The EU embraces the IFRS and EU member states update their national laws accordingly. Since the valuation of stock is a challenge for US GAAP, IFRS and Czech national standards, it is relevant to examine their conceptual approaches and then confront them with a real Czech case study with inside data. The price paid for stock in the given case departed from the value based on the standards, and the presented accounting and contractual price growth rate brings suggestions regarding the valuation of the stock of a company where a power battle over the control takes place. The underlying quasi-hypothesis about the ephemeral value of the stock is getting confirmed and the reasons for that are becoming recognized. Due to the conceptual instability regarding the legal fiction of the legal personality of a company, the virtual nature of stock and other factors, the ephemeral value of a stock can hardly be fully captured. The situation of a power battle demonstrates the inherent subjectivity and particularity. However, still the current valuation and appropriate standards could be improved, provided a deeper understanding of the nature of stock is achieved. Further, economic, law and behavioral aspects should be commonly appreciated and thus push the holistic understanding closer to the reality of business and life in the global post-modern society in the 21st century.

Keywords: IFRS, stock, US GAAP, value

1. INTRODUCTION

Post-modern global society is exemplified not only by a very intense competition and digitalization (Pelikánová, 2012) and increasingly more complex and dynamic organizations (Piekarczyk, 2016), but as well by an exponential growth in the focus on accounting standards. However, the first decade of the 21st century brought forth a set of crises demonstrating that accounting standards, and accordingly prepared financial statements, do not, in and of themselves, eliminate fraud (Turečková & Nevima, 2016), manipulation and misrepresentation. Universal standards benefiting from a general and unanimous recognition, and enjoying a perfect interpretation, application and enforcement, are a vision and perhaps a mission, but definitely not yet a reality. Currently, the US GAAP is perhaps overshadowed by the IFRS and only the future will ultimately answer whether the underlying economic philosophy and concepts of the IFRS will globally prevail and whether this will bring about the expected results, such as stability, transparency, fraud reduction, etc. However, already at this point, a preliminary scrutiny of both the concepts and approaches of accounting standards, vis-à-vis a breaking down issue in relation to a case study, can be presented and discussed.

Both the US GAAP and the IFRS encompass conservative financial accounting, and this even regarding financial instruments, namely a special type of tradeable financial asset called a security. A security can be either a debt security (such as bonds) or an equity security (such as common stock) or a derivative (such as options). A stock of a company means participation, an asset sui generis and control instrument. Once this company is clear and concrete, the term “share” instead of the term “stock” is used. The stock is an equity-based financial instrument reflecting

ownership of an issuing entity, while the share is such a specific instrument reflecting ownership of the defined company which has issued it. However, can one person own another? Does the shareholder, having his share in the defined company, become the owner of this company?

In addition, the stock has a virtual nature and is linked to the company, which is ultimately just a legal fiction. Obviously, historical cost and even the value of the company based on the balance sheet do not always lead to the determination of the real value of the stock. In addition, certain stock is traded irregularly and just to a small extent. How should it be valued?

The Czech Republic, as an EU member state, is an excellent setting for such a case study and the issue of the valuation of a stock traded not via a Stock exchange or bourse is an appropriate issue for such a case study, especially since real data about the accounting and sales price of the stock over a period of several years can be presented. Namely, the transfer of a stock demonstrates the complexity of the overlap of business and law (Vivant, 2016) and brings to the surface many controversial topics, often related to the legal personality fiction and corporate veil doctrine. Indeed, transferring the stock means transferring a virtual interest and control on somebody else with the consideration taking usually a monetary form. Unlike typically relative commercial deals in the form of a plain contract between two or more parties, in the case of a stock transfer many stakeholders are directly or indirectly involved, and this makes the deal more absolute. The potential for various types of conflicts, especially conflicts of interest, calls for a proper legal setting and enforcement. However, the law cannot overregulate and go into great detail and thus stifle business. Hence, the US, EU and EU member states, including the Czech Republic, provides only a general law framework for accounting and leaves it up to private or semi-private professional institutions to further develop accounting standards. The FASB in the US issues US GAAP, and the IASB issues IFRS, enjoying a growing international recognition, including by the EU and specifically by the Czech Republic. One of the reasons is the fact that the EU is established based upon the doctrine of the famous four freedoms of movement, including the movement of capital, in the single internal market (Cvik & Pelikánová, 2016). The EU understands that the operation of the single market and the competitiveness of European business is critical, that digitalization is indispensable in the global society (Pelikánová, 2014) and a certain accounting harmonization is indispensable, namely the endorsement of the IFRS.

A Czech company with a tradable stock not quoted on the Stock exchange, which recently underwent rather massive transfers of stock between already existing shareholders, represents an interesting case study showing how challenging it is to assess the ephemeral value of the stock, testifying about the general business setting and generating recommendations for the future, i.e. even contributing to the chronic discussion about the (alleged) dichotomies IFRS v US GAAP and EU law with IFRS v the Czech national law on accounting. Indeed, the underlying quasi-hypothesis about the ephemeral value of the stock is on the pathway to be confirmed, the reasons for that are also on their way to the recognition as well as insights and suggestions regarding the value of stock in the case of a power battle.

2. DATA AND RESEARCH METHODS

A scientific and academic exploration of the valuation of stock requires a deep and holistic understanding of the business as well as law setting. An open-minded and yet still sufficiently focussed approach needs to explore the general setting and move to a concrete situation in a given jurisdiction, ideally a study case. Namely, pertinent standards in relation to the valuation of stock have to be presented, while giving special attention to their concepts. In the light of that, thereafter, a real Czech case study has to be explored and both accounting and the actual paid value of stock critically discussed. Such a combination of general theory on fundamentals with a real life experience with stock valuation can be highly beneficial, bringing fresh ideas, provided that appropriate data and methods are used.

The data must reflect the cross-disciplinary and multi-jurisdictional nature of the topic and thus needs to be extracted from a multitude of resources and entail not only per se standards but, as well, related organic, sociological and other aspects. Primary resources, especially the inside data linked to the case study, have to be explored, along with secondary resources, such as legislation, standard settings and academic articles.

The methods must mirror the nature of the topic and the underlying quasi-hypothesis about the ephemeral value of the stock, which can hardly be fully captured by accounting norms and standards. In addition, the methods have to work with the data generated by the indicated open-minded and multisource research. Indeed, the yield of data generated or indicated by research is to be processed by Meta-Analysis (Silverman, 2013), while using a holistic approach, a critical comparison of laws and confronting the concepts with the reality of the Czech case study. Due to the inevitable fact that economic, legal and technical aspects are involved, attention must be given to both qualitative and quantitative data and the deductive and inductive aspects of legal thinking (Matejka, 2013), as well as business and sociological aspects, must be respected. As a result, the quantitative research and data is complemented by qualitative research, along with a critical closing and commenting and refreshed by socratic questioning (Areeda, 1996).

Such a set of data and methods allows both for systematically assessing the concepts of appropriate standards and for the confrontation of the value of stock, determined by these standards and actually paid. This facilitates presenting at least suggestions about how to answer the underlying quasi-hypothesis about the ephemeral value of the stock and reasons for that.

3. US GAAP AND IFRS CONCEPTUAL APPROACH TO THE VALUATION OF STOCK

The continental law jurisdictions have an inclination to formalism, while the common law jurisdictions have an inclination to pragmatism and informalism (Pelikánová, 2012). However, neither the continental law universe nor common law universe have made an ultimate move towards creating a law instrument on accounting standards to be valid and applied generally. Indeed, each state makes its own struggle, certainly while reflecting its adherence to the continental law family or common law family, and has its own national law on accounting standards and other requirements for the preparation and issuance of financial statements of companies and other subjects. Well, in the absence of an international law on this topic, and ‘taking into account’ the growing globalization and digitalization, a clear demand for universal accounting standards emerges. Typically, these standards are not the result of legislative or other activities of states and their governments, instead they are products of semi-public, or even private, organizations, which later on are transposed (sometimes even by the “cut-and-paste” method or by direct reference) into national laws. Quite the best known accounting standards fitting this description are the US GAAP of the FASB and IFRS of the IASC. Hence, before exploring the Czech case study and dealing with accounting values and real paid prices for shares, it is critical to overview the conceptual background of the key model standards.

3.1 US GAAP conceptual approach to the valuation of stock

The United States Generally Accepted Accounting Principles (“US GAAP”) were established by the American Institute of Certified Public Accountants (“AICPA”). Since 1972, the US GAAP are established by the Financial Accounting Standards Board (“FASB”), which is recognized by the Securities and Exchange Commission (“SEC”) as well as by AICPA. The operation of the FASB is supported and overseen by the Financial Accounting Foundation (“FAF”), which is an independent, private sector, not for profit organization from Connecticut. This organic (personnel) and structure information in the historical context is critical for an understanding of the US GAAP conceptual approach to the valuation of stock. In addition, the US GAAP are not uniform, unlike IFRS. The US GAAP provides general standards for accounting while often reflecting the particular industry and includes a number of exceptions. The theory identifies the facilitation of the efficient capital

allocation in the economy as the object of the GAAP (Kothari et al., 2010), i.e. capital should flow to its most highly valued use and so ultimately maximize the value. Naturally this idea of efficient allocation and valuation (earning quality) increase overshadows the contracting or stewardship concepts, and is expressed by the US GAAP drafters, i.e. accountants and CPAs.

To put it plainly, it cannot be overstated that the US GAAP have always been predominately set and shaped by certified accountants, auditors. Therefore below, the trio of assumptions, the four principles and five constraints for accounting, based on the US GAAP, clearly point to their authors and their conceptual preferences, and this including the value of stock.

Table 1. US GAAP – Overview of assumptions, principles and constraints with comments

US GAAP	Assumptions	Principles	Constraints
	<ul style="list-style-type: none"> • business entity (indep.) • monetary unit • periodicity 	<ul style="list-style-type: none"> • historical cost • revenue recognition • matching • full disclosure 	<ul style="list-style-type: none"> • objectivity • materiality • consistency • conservatism • cost constraint
Comments	Issue with legal fiction of the corporate independency v. business reality (e.g., how independent and separate is a company from its 95% or 100% shareholder?)	Historical cost principle rejects the fair market value and even in cooperation with the revenue recognition often totally departs from the (stock price) reality.	What is objective evidence about the value of shares? Does not persistent conservatism kick the value of stock deeper and under the reality?

Source: Prepared by authors based on US GAAP and their own knowledge and observations

In sum, the US GAAP are basically earnings-oriented, focus on historical cost, are slightly reluctant to recognize various types of intangible assets and are generally more conservative than IFRS (Beisland & Knivsfla, 2015). These features are hardly reconcilable with the stock valuation in the 21st century, especially if shares of a close company are involved. Although the theory suggests that GAAP's principles and their application focus on control (performance measurement and stewardship) and this leads to high verifiability (Kothari et al., 2010), it needs to be pointed out that the desire to control a company can overshadow data on performance measurement and stewardship, see below the case study.

The AICPA Code of Professional Conduct attempts to address issues generated by a (too rigid) application of the US GAAP, and especially while seeing the deficiencies vis-à-vis the value of the stock, it is worthy to cite the answer offered by this Code. For a further discussion, certain terms are underlined.

1.320.030 Departures From Generally Accepted Accounting Principles

.01 It is difficult to anticipate all the circumstances in which accounting principles may be applied. However, there is a strong presumption that adherence to GAAP would, in nearly all instances, result in financial statements that are not misleading. The "Accounting Principles Rule" [1.320.001] recognizes that, upon occasion, there may be unusual circumstances when the literal application of GAAP would have the effect of rendering financial statements misleading. In such cases, the proper accounting treatment to apply is that which will not render the financial statements misleading.

.02 The question of what constitutes unusual circumstances, as referred to in the "Accounting Principles Rule" [1.320.001], is a matter of professional judgment involving the ability to support the position that adherence to a promulgated principle within GAAP would be regarded generally by reasonable persons as producing misleading financial statements.

.03 Examples of circumstances that may justify a departure from GAAP include new legislation or the evolution of a new form of business transaction. Examples of circumstances that do not justify departures from GAAP include an unusual degree of materiality or conflicting industry practices. (AICPA, 2016)

It is discussable whether there is really a strong presumption that US GAAP standards with principles of historical cost are a somewhat misleading valuation of stock, especially if the stock is not traded via a Stock exchange or bourse and the involved company is closely held and/or in a unique situation of fighting over the control. It is obvious that the legislative setting of various thresholds protecting minority shareholders, as well as majority shareholders, the squeeze-out rules (Cvik et al., 2017), rules on the board's commission, voting, etc. is important. The magic threshold participations of 50%, 66%, 80%, 90% and 95% and the surcharge/discount due to the number of shares of stock and near thresholds can dramatically impact the value of the involved stock. Hence, if US GAAP are too rigid and conservative and the modifications are made via a rather unclear business judgment, is the ephemeral value of the stock better, or even perfectly, caught by the IFRS and their drive for the market value?

3.2 IFRS Conceptual approach to the valuation of stock

The International Financial Reporting Standards („IFRS”) are standards issued by the IFRS Foundation and the International Accounting Standards Board („IASB”). Their history is much shorter and more international than the history of the US GAAP. Indeed, the International Accounting Standards Committee („IASC”) issued between 1973 and 2001 International Accounting Standards („IAS”) and in 2001 the new International Accounting Standards Board („IASB”) took over the responsibility to issue these standards, renamed IFRS. Since 2002, when the FASB made the Norwalk agreement with IASB, the IFRS has kept gaining more attention and importance (El-Gazzar & Finn, 2017). Researches suggest that the IFRS are principles-based standards which allow greater discretion to corporate management and the auditors in interpreting and applying these standards (Nobes, 2006).

The IFRS are a response to a global demand from world-wide stakeholders, including regulators, investors, businesses, and auditors, for a unique and universal set of high-quality, globally-accepted accounting standards. Currently, over 130 jurisdictions recognize, implement, or at least partially make part of their national accounting regulation, IFRS issued by the IASB in London (Houqe & Monem, 2016). The IFRS pursue the same objective as the US GAAP, but they are much more universal and general, not going into industry particularities and in setting exceptions, as do the US GAAP. Overallly, the IFRS are less conservative than the US GAAP and are more balance sheet oriented historical cost and earnings oriented (Beisland & Knivsfla, 2015).

The AICPA declares that the *„U.S. adoption of a single set of high-quality, globally accepted accounting standards will benefit U.S. financial markets and public companies by enabling the preparation of transparent and comparable financial reports throughout the world. The AICPA is committed to providing the accounting profession with the information and tools, such as the Web site IFRS.com, needed to assimilate and implement a new set of standards.”* (AICPA, 2017). Well, then the conceptual approach of the IFRS to the valuation of stock is important, truly world-wide. At the same time, it would be remiss not to mention significant controversy between the FASB with the US GAAP and the IASB with the IFRS regarding the degree to which fair value should serve as a basis for financial reporting (Kothari et al., 2010).

Interestingly, IFRS 9 began as a joint project of the IASB issuing IFRS and FASB issuing US GAAP with the aim to make the ultimate goal of reporting all financial instruments at fair value. Namely, IFRS 9 determines how an entity should classify and measure financial assets and requiring recognizing them in financial statements. *“At initial recognition, an entity measures a financial asset ... at its fair value plus or minus, ... not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition or issuing of the financial asset.”* (IASB, 2017).

Table 2. IFRS 9 – Overview of three valuation models of financial instruments

Amortized cost	Fair value through other comprehensive income	Fair value through profit or loss
Assets held to collect cash	Assets held to both collect cash and re-sale	Default category

Source: Prepared by authors based on IFRS and their own knowledge and observations

Further, IFRS 9 deals with impairment and hedge accounting, but it remains questionable how nearly these valuation models reflect the ephemeral valuation of the stock as, among else, an instrument of control of somebody else. Well, let's test the valuation of stock based on a real case from the Czech jurisdiction.

Generally, research and academic analysis suggest that businesses adhering to IFRS have a lower rate of restatements than those adhering to US GAAP, but this without significant differences in terms of sources of restatements and the impact on net income or shareholders' equity (El-Gazzar & Finn, 2017).

4. CZECH CASE STUDY – WHEN THE FAIR MARKET VALUE IS NOT FAIR

As mentioned above, the Czech Republic is a member of the EU and the Czech national law just partially embraced IFRS, which are endorsed by the EU. It is highly illustrative to quickly overview the legal and factual setting of the case study and discuss the discrepancy of results. Namely, after summarizing the Czech legal framework and depicting the target company, the accounting and other data about the value and price regarding the stock of this company will be explored and ultimately the conceptual deficiencies will be analyzed.

4.1 Czech Case study – the legal framework

Since the Czech Republic is a member of the EU, the legal norms applicable in the Czech Republic can have a provenance from three legal systems: (i) the international legal system, (ii) EU legal system, and (iii) the Czech national system. In addition to these "state made" legal norms, other generally recognized norms can apply, and this based on a direct reference in "state made" legal norms or on other, less positivist and more natural, instruments. Since regarding the "Czech" valuation of stock, there are not any directly applicable norms from the international legal system, i.e. there are no such international treaties or customs, the focus will go to the EU law and Czech law.

The post-Lisbon EU has both supranational and intergovernmental natures and has normative and other characteristics centered around the concept of the single market with significant institutional features and a competing interest group (Damro, 2012). EU law, which is neither a typical international law nor a typical federal or state law, is integrated into national laws in a fierce and penetrative manner, behaving like an occupying authority on a foreign soil, by making use of a national procedural setting to directly incorporate and enforce its norms with the national jurisdiction of the EU member state (Azolai, 2011). The constitutional setting of the post-Lisbon EU law consists of the Treaty on EU ("TEU"), Treaty on the functioning of EU ("TFEU") and Charter of fundamental rights of the EU ("Charter"). This constitutional trio, i.e. EU primary law, is reflected by secondary and supplementary EU law, as well as by the leading EU strategy. Currently, this is the ten year strategy, Europe 2020: A strategy for smart, sustainable and inclusive growth COM (2010) 2020 final ("Europe 2020"). Europe 2020 is strongly impacted by both formal and informal institutions (Pasimeni & Pasimeni, 2016) and focusses on areas outside of the Commission's jurisdiction and which has but little to do with increasing competitiveness (Erixon, 2010). In addition, its implementation points to persistent differences between EU member states (Çolak & Ege, 2013) due to different social, political and economic traditions (Pelikánová, 2017) and to the fact that smart, sustainable and inclusive activity, especially innovative activities, of businesses are far from being a spontaneous, market-based process (Pohulak-Żołędowska, 2016).

As a matter of fact, the structural, indebtedness (Lajtkepova, 2016) and fiscal burden diversity (Balcerzak, 2016b) and various indicators show problems in the Europe 2020 setting, as well as the insufficient efforts of many European economies, especially the most important ones (Balcerzak, 2015).

However, it cannot be denied that Europe 2020 attempts to develop the technological (Pelikánová & MacGregor, 2015) and other potentials (Pelikánová & MacGregor, 2016a) of a European economy (Balcerzak, 2016a) and systematically pushes for the harmonization, if not unification, of the publication of certain key private business and law data. This data might be critical for financial accounting, tax accounting and even managerial accounting (Jindřichovská & Kubíčková, 2016 and 2017). Examples of this trend are Directive 2009/101/EC of 16th September, 2009 on the coordination of safeguards which are required by Member States of companies (“Directive 2009”) and the Directive 2013/34/EU of 26th June, 2013 on the annual financial statements, consolidated financial statements and related reports (“Directive 2013”). These two Directives need to be understood in the context of the Regulation (EC) 1606/2002 of 19th July, 2002 on the application of international accounting standards, which requires all listed companies to prepare their consolidated financial statements in accordance with the IFRS (“Regulation 2002”). In addition, Regulation (EC) 1126/2008 of 3rd November, 2008 on adopting certain international accounting standards in accordance with the Regulation 2002 codifies the IFRS as adopted by the EU (“Regulation 2008”). Regulation 2008 includes IAS 32 Financial instruments: presentation and IAS 39 Financial instruments: recognition and measurement, the precursors of the IFRS 9.

Table 3. IAS 32 and IAS 39 as stated in Regulation 2008

<i>IAS 32</i>	<i>IAS 32 establishes principles for the classification of financial instruments as financial liabilities or equity. In particular, those principles apply to the classification of puttable instruments that allow the holder to put those instruments to the issuer for cash or another financial instrument.</i>	<i>Disclosure: Financial assets and financial liabilities at fair value through profit or loss</i>
<i>IAS 39</i>	<i>The terms defined in IAS 32 are used in this standard with the meanings specified in paragraph 11 of IAS 32. IAS 32 defines the following terms: — financial instrument, — financial asset, — financial liability, — equity instrument.</i>	<i>Disclosure: When a financial asset or financial liability is recognised initially, an entity shall measure it at its fair value plus, in the case of a financial asset or financial liability, not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition or issueance of the financial asset or financial liability.</i>
<i>Guideliness</i>	<i>After initial recognition, an entity shall measure financial assets, including derivatives that are assets, at their fair values, without any deduction for transaction costs it may incur on the sale or other disposal, except for the following financial assets: (a) loans and receivables as defined in paragraph 9, which shall be measured at amortised cost using the effective interest method; (b) held-to-maturity investments as defined in paragraph 9, which shall be measured at amortised cost using the effective interest method; and (c) investments in equity instruments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured and derivatives that are linked to and must be settled by delivery of such unquoted equity instruments, which shall be measured at cost. ... All financial assets, except those measured at fair value through profit or loss, are subject to review for impairment in accordance with paragraphs 58–70 and Appendix A paragraphs AG84-AG93.</i>	

Source: Prepared by authors based on Regulation 2008

The Czech Republic is a member of the EU and the EU law applies to it, i.e. the Regulation, without any further ado, and Directives as to the aim to be achieved. Hence, Czech companies fitting in the definition of the Regulation 2002, i.e. all listed companies, must apply accounting standards according to IFRS as codified by the Regulation 2008. However, out of the scope of the listed companies and consolidated financial statements, “only” EU Directives apply and thus there is still space for the Czech legislature to enact its “own” accounting standards law. Based on the data provided by the World Bank and the worldwide governance indicators, the corruption perception score of the Czech Republic in 2011 reached 0.30, while continental law Poland reached 0.49, France 1.41, and Germany 1.71 and common law United Kingdom 1.58 (Houge & Monem, 2016). In addition, the Czech law is known to have a chronic issue with enforcement (Pelikánová & MacGregor, 2016b).

The Czech law shares the continental tradition and the Czech legal system belongs to the continental family. This is important, because a country’s legal system affects its reporting practices (El-Gazzar & Finn, 2017) and it is even argued that earnings quality is higher in common law countries than in continental law countries (Ball et al., 2000). The Civil Code and/or Commercial Code are pivotal for continental jurisdictions. The Czech law underwent a massive re-codification and currently the new Czech Civil Code absorbed part of the Commercial Code, while another part became an independent statute on corporations, i.e. the Business Corporation Act („BCA”) (Pelikánová & MacGregor, 2016b). Hence, for the valuation of the stock according to the Czech law, importance is given to the below indicated *lex specialis* as well as two *leges generali*, namely the Czech Civil Code and the BCA.

Legal entities keep reliable records on their property situation, and this even if they do not have a duty to keep accounting according to another statute NOZ. (Art.119 New Czech Civil Code)

The executive assures a duty for keeping prescribed records and accountings, of a list of associates and, upon a request, informs associates about the matters of the company (Art.196 BCA on the Ltd.).

“The statutory authority of the company is the board of directors. The business management of the company belongs to the board of directors. Nobody is allowed to give orders to the board of directors about the business management....financial statements for the approval, and in compliance with the Bylaws as well the proposal about the distribution of the gain or payment of the loss.” (Art.196 BCA on the Ltd.).

Naturally, these general norms are foundations which must be developed in an *appropriate lex specialis* about the accounting, and consequently, as relevant for the valuation of the stock, i.e. the Act No. 563/1991 Coll., on accounting (“Accounting Act). The Accounting Act has been amended many times and there is a myriad of Decrees further developing it. It implements the relevant EU law, including Directive 2009 and Directive 2013, and uses almost all options for simplifications or exemptions allowed by this Directive to reduce the administrative burden for SMEs (Bušová et al., 2016).

The Accounting Act provides fundamental normative guidelines on valuation and appraisal to be done by the so-called accounting entities, i.e. by legal entities, natural persons conducting businesses, etc.

Accounting entities have the duty to appraise their assets or its parts and liabilities in the manner according to this Act.” (Art.24).

From individual items of the assets and liabilities, the appraising is done e) by the nominal value for financial instruments ...f) by the acquisition price for participation and value papers and derivativesthe acquisition price is the price for which the asset was purchased plus related costs..... (Art.25). ...

From individual items of the assets and liabilities are appraised by the real value... a) value papersthe real value is the market value ... (Art.27).

Well, these are fundamental normative guidelines provided in a mandatory manner by the Accounting Act, i.e. official Czech rules for appraising stock, such as shares of the target company.

4.2 Czech Case study – the target shareholder company

The target shareholder company is a Czech company with a seat in the Czech Republic and governed by the Czech law. This target company shared all significant data for the case study with the authors, under the condition that its anonymity is protected. Therefore, the below description includes only a part of them and is rather general.

The registered capital of the target company is CZK 101 000 000. The target company has a trade license and is allowed to conduct business in the fields of car repairs, accounting services, fiscal services, butchering, etc. The main business activity is the agricultural production, including production of raw agriculture outcomes for their processing and further resale. During the period 2010–2012, one of the shareholders had been purchasing shares via shares purchase agreements (“SPA”) from minority shareholders in order to pass the threshold and become the majority shareholder of the target company. The target company has a board of seven directors and important legal documents of the target company must be signed by the chairman of the board of directors, or by the vice-chairman of the board of directors or by the CEO or an agent having a power of attorney from one of them. The target company manages 1 500 hectares arable land and is a beneficiary of a repetitive annual dotation (subsidy) in the amount of CZK 11 000 000 yearly.

The target company has issued the following types of shares:

- 2 870 shares on name in a nominal value of CZK 1000;
- 1 493 shares on name in a nominal value of CZK 10 000;
- 1 664 shares on name in a nominal value of CZK 50 000.
-

Table 4. Capital (share) structure of the target company

Number of shares	Nominal value per share in CZK	Total value of shares in CZK
2870	1 000	2 870 000
1493	10 000	14 930 000
1664	50 000	83 200 000
Total value of all shares (registered capital)		101 000 000

Source: Prepared by authors based on the accounting and other data, including financial statements, provided by the target company

The Bylaws include provisions regarding contingency of the transfer of shares, i.e. shares are transferable only upon the consent provided by the Board of Directors. The target company issued only shares on name and the total number of shareholders reached the number 511. On 1st January 2011, the principal shareholders were one business corporation with 7.6% shares and members of the Board of Directors and of Supervisory Board (in total 10) with 22% shares. The remaining shares, i.e. 70.4% shares, were held by 500 minority shareholders. The target company paid dividends only twice during the period 2001–2012 and there were CZK 5–1000 for each share. Until 2011, the target company did not make any significant investment, its machinery was neglected and outdated and just a part of the areable land was exploited (for sowing). Although no steps were taken for modernization and development, the target company took on loans. The revenue of the target company and profit during the period 2009–2012 is included in the below Table.

Table 5. Revenue and profits of the target company in 2009–2012

Year	Turnover in CZK	Profit/Loss in CZK
2009	61 601 000	- 4 758 000
2010	63 402 000	+ 814 000
2011	52 824 000	+ 2 855 000
2012	46 558 000	+ 588 000

Source: Prepared by authors based on the accounting and other data, including financial statements, provided by the target company

Until 2011, the shareholder composition of the target company was stable, see above one shareholder with 7.6%, ten shareholders combined with 22% and the remaining 500 shareholders combine with 70.4%. However, in 2011 one of the 500 minority shareholders entered in the financial market with the internet to get shares from other minority shareholders and to become the majority shareholder of the target company. Indeed, this minority shareholder wanted to pass the majority control threshold and thus participate at, if not determine, the business management of the target company. This shareholder was already a majority shareholder of another company doing similar business in the neighboring district, i.e. managing 2 000 hectares of land and using it for both plant and animal production. Unlike the target company, this neighboring company every year paid out dividends from the profits in the amount of up to 11% of the nominal value of the shares.

The motivation of the minority shareholder of the target company that was not doing very well, and who was a majority shareholder of the neighboring company, which was doing much better, was obvious. This shareholder did not agree with the business management and business strategy of the target company, and he wanted to get the power to change that and basically to establish the business management in a style similar, if not identical, to the business management in the neighboring company. The minority shareholder wanted to keep the agricultural production as the key activity of the target company, but wanted as well to expand in other fields and industries, such as power supply, while taking advantage of modern world technologies.

Hence, in 2011, this minority shareholder sent an offer to other minority shareholders of the target company and based on it managed to purchase 8% of the shares for 20% of their nominal value (!!!). This was significantly facilitated by the fact that the target company seldom paid dividends, and that the Board of Directors, which had an important amount of shares (22%) did not initially perceive the situation as a threat. For two months, they underestimated the purchasing activity of the minority shareholder buying shares from other minority shareholders. Thereafter, it became clear that the minority shareholder was not merely buying a few extra shares, but instead he wanted to “get” the target company. This induced shareholders of the target company to speculate and increase their selling price. This situation is still going on, into 2017, and the shareholders anxiously await further increases in the price, and only shareholders that are in financial straits sell shares for the currently offered price, which is 50% of the nominal value. The minority shareholder managed to buy shares for 20% of the nominal value in 2011, but in 2017 must pay at least 50% of the nominal value. Manifestly, the power battle for the control of the target company is a crucial factor in determining the price of the shares. The accounting value, historical cost or current balance sheet have very little to do regarding the determination of the price to be paid for minority shares.

4.3 Czech Case study – comparison of the accounting value and paid value and their rate of growth

The case study focusses on a typical scenario of a power battle over a company between existing shareholders with the motivation to change the business management. It is obvious that, the closer one minority shareholder will be to a majority/control threshold, even the more such a shareholder will “need to get a few more shares” and might be open to pay a bonus price, i.e. much more per share than what is the accounting value or previous contractual prices for identical shares purchased earlier. The stock value in such a context becomes truly ephemeral and at the edge, if not out of reach, of standard principles of US GAAP, IFRS and even national accounting standards. Due to a collaboration with the target company and access to inside data, we have a unique opportunity to expose and compare the accounting value and contractual value and the rate of growth of the target company and thus cast a beam of light of this dark area, where often the stock value has a life of its own and far away from recognized standards and valuation and appraisal methods.

In compliance with the national accounting setting in the Czech Republic, the accounting value will be calculated based on the balance sheets of the target company, namely by dividing the real own capital by shares, while respecting their nominal value, i.e. the accounting value of shares with a nominal value CZK 10 000 will be 10 times higher than of shares with a nominal value of CZK 1 000 and 5 times lower than that of a share with a nominal value of CZK 50 000. The access

of data for the time period 2005–2016 allows to not only see statically the accounting value of the shares, but offers as well a dynamic perspective, i.e. their rate of growth.

Table 6. Own capital and accounting value of shares of the target company in 2005–2016 (in CZK)

Year	Own Capital	Accounting value of a share with a nominal value of CZK 1 000 (2 870 pieces of shares)	Accounting value of a share with a nominal value of CZK 10 000 (1 493 pieces of shares)	Accounting value of a share with a nominal value of CZK 50 000 (1 664 pieces of shares)
2005	104 094 000	1 030	10 300	51 500
2006	104 487 000	1 034	10 340	51 700
2007	106 950 000	1 058	10 580	52 945
2008	106 938 000	1 058	10 580	52 939
2009	102 017 000	1 010	10 100	52 503
2010	102 519 000	1 010	10 100	52 504
2011	104 617 000	1 035	10 358	51 790
2012	104 122 000	1 030	10 309	51 545
2013	106 591 000	1 055	10 553	52 767
2014	114 533 000	1 134	11 341	56 709
2015	114 195 000	1 130	11 306	56 532
2016	115 397 000	1 142	11 425	52 127

Source: Prepared by authors based on the accounting and other data, including financial statements, provided by the target company

Considering the description of the target company and its business management, the above indicated values are not surprising, i.e. the amount of own capital as stated on the balance sheet has not changed dramatically during the period before and even after 2011 and consequently the accounting value of shares remained rather stable. A completely different picture provides the overview of really paid prices for shares during the period before and after 2011.

Table 7. Average contractual prices paid for shares of the target company in 2005–2016 (in CZK)

Year	Average contractual price paid for one share with a nominal value CZK 1 000 (% to the nominal value)	Average contractual price paid for one share with a nominal value CZK 10 000 (% to the nominal value)	Average contractual price paid for one share with a nominal value CZK 50 000 (% to the nominal value)
2005	280 (28%)	2 300 (23%)	11 000 (22%)
2006	280 (28%)	2 300 (23%)	11 000 (22%)
2007	245 (25%)	2 200 (22%)	10 200 (20%)
2008	230 (23%)	2 050 (21%)	10 200 (20%)
2009	225 (23%)	1 935 (19%)	10 100 (20%)
2010	220 (22%)	1 935 (19%)	10 100 (20%)
2011	200 (20%)	2 000 (20%)	10 000 (20%)
2012	250 (25%)	2 500 (25%)	12 500 (25%)
2013	300 (30%)	2 800 (28%)	12 800 (26%)
2014	420 (42%)	3 100 (31%)	14 000 (28%)
2015	500 (50%)	5 000 (50%)	25 000 (50%)
2016	500 (50%)	5 000 (50%)	25 000 (50%)

Source: Prepared by authors based on the accounting and other data, including financial statements, provided by the target company

The data about the paid prices for shares illustrates the determination of the minority shareholder to get the control of the target company in order to change the unsatisfactory business management. Further, it indicates that deals were negotiated individually, and thus the fairly insignificant differences between prices within the same year occurred. Since 2011, prices for shares with

a nominal value CZK 1 000 reacted faster to the trend and grew faster than the shares with a nominal value CZK 50 000. Nevertheless, after a few years, they unified in 2015 and remained so in 2016. Hence, regardless the nominal value of the share, it can be concluded that the original real paid price reaching 20% of nominal value climbed in 2015 to 50% of nominal value, and this irregardless of the fact that the own capital basically has not changed.

Further, this data reveals that two growth milestones occurred during the period 2005–2016, namely in 2011 and in 2014. The reason for the „jump“ in the price in 2011/2012 was explained above, i.e. it was the entry of the minority shareholder on stage with the intent to get the control of the company. Based on inside information from the target company, the authors of this paper were able to confirm their expected explanation of the “jump” in the price in 2015 – the minority got very close to the majority threshold. Pursuant to the Czech law, Art. 412 BCA et foll. these thresholds are 30% (quorum for the general assembly), 50% (simple majority), 66.7% (majority for deciding about capital changes), 75% (majority for deciding about priority rights) and 90% (majority needed for squeeze-out). In 2015, the minority shareholder worked very hard to reach one of these milestones and succeeded. Currently, the (originally minority) shareholder would like to move on towards the next threshold, i.e. milestone, but he does not have quite as much determination as previously and basically the cards are on the table. The originally minority shareholder is open to buy for the same price as in 2015, but other shareholders hope to get another “jump” in the price. The original majority shareholder managed to partially change the business management and the near future will bring valuable data on this highly interesting case study. However, already now it is obvious that the price of shares of the target company has had very little to do with their accounting value. Although the IFRS is allegedly more market value oriented than the US GAAP, they both with their principles fail to capture these ephemeral business nuances. Is this inevitable? Naturally, accounting standards must be objective and cannot sink in casuistic particularities, but the selected case study shows very clearly that the shareholder company is a person sui generis and that the stock of a company is far from being a generic asset. A deeper understanding and higher awareness needs to be achieved in order to manage to further develop accounting standards for the valuation of stock. Clearly, there are objective factors to be considered and included in such updated valuations, such as the proximity to a majority threshold.

5. CONCLUSION

The more things change, the more they stay the same, “its like déjà vu all over again” as Baseball legend Yogi Berra famously stated..... Indeed, errors, frauds and lack of (corporate) transparency (Huang et al., 2016) are a function of the effectiveness of the accounting regime, irregardless whether the US GAAP, the IFRS or national rules apply (El-Gazzar & Finn, 2017). All roads lead to Rome..... Indeed, both the US GAAP and the IFRS have a solid background and their accounting criteria lead to the production of accounting information of no significantly different quality (El-Gazzar & Finn, 2017). In both the common law and continental law universe, the shareholder company is a legal fiction and its stock is hardly to be qualified and even more difficult to be valued. FASB, AICPA and even IASB agree that the most important feature of food financial reporting are reliability and relevance (Thijssen & Iatridis, 2016) and it cannot be overstated that this is correct as well for stock valuation, especially if shares of close company in the middle of power battle are involved, such as in the case study.

The examined Czech case study revealed that the value of shares of a given, not listed, shareholder company may have very little to do with the historic (or other) cost, nominal value or even its market value from a prior period. It is necessary to humbly admit that assessing the ephemeral value of such shares can be properly done only if the concept of the shareholder company and its shareholders and their shares is properly understood and if extrinsical data (such as about the law majority thresholds) and intrinsical data (such as the type of the company and its main activity) is available. Otherwise, the demand for reliability and relevance can hardly be satisfied.

There is no doubt that stock is intangible and its value ephemeral, and that is due especially to the legal construction of the fiction of the shareholder company and to the dichotomy between a passive investment approach and an active power control approach. Shares of a given shareholder company are not generic assets and they do not have the same value, even at the very same moment. Close companies, S corporations and other types of not listed companies are a typical platform for power battles and various games with hidden cards (poker) and bids (auction bridge). After all, the corporate veil goes down and the shareholder company is not a subject but the object of the law and of these games. The stock is a control leverage instrument and basically for each shareholder or third party has a different significance. Despite this inherent subjectivity and particularity, there are stable points for valuation and accounting standards should reflect it. One of them should be the proximity to the law thresholds of control. Indeed, the valuation of stock should be founded on a multi-disciplinary co-operation of economics, law and behavioral science. The critical elements should constitute pragmatism, integrity, the rule of law and the behavioural reality of the highly competitive global post-modern society in the 21st century.

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Aspects of Financial Accounting

FINANCIAL REPORTING FOR SMES IN BANKRUPTCY AS VIEWED BY INSOLVENCY PRACTITIONERS: THE CASE OF POLISH ENTITIES WHICH DO NOT KEEP BOOKS OF ACCOUNT

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Abstract

In recent years, significant simplifications have been made in the financial reporting of the smallest entities. During bankruptcy proceedings in Poland, it is possible for the debtor to seek exemption from the obligation to submit to court any given element of the financial statement if, in the course of its business operations the entity has not kept accounting documentation. The purpose of this paper was to examine the experience of insolvency specialists in reference to the quality of financial statements prepared for insolvency purposes by non-bookkeeping entities and whether the specialists support the idea of waiving the obligation to submit financial statements by these entities in court. The purpose of this study stems from the belief that bankruptcy specialists may have an impact on changes in information obligations of the debtor / bankrupt. As a result of the research, it was found that the opinions of bankruptcy specialists concerning the financial statements of the examined entities are very different, both extremely positive and negative. The results of the study indicate a low assessment by insolvency professionals of the qualitative characteristics of financial statements of entities which were studied. Relevance was best rated – on a scale from 1 to 5 this characteristic was rated 3.27, which is slightly above average. At the same time, the results of the study do not provide an unambiguous declaration about the possibility of exempting entities which were researched from the obligation to submit financial statements to court.

Keywords: *bankruptcy, insolvency, financial reporting, Poland, SME's*

1. INTRODUCTION

Small and Medium Enterprises(SMEs) are a driving force and a dynamically growing sector of any given economy. They are more and more frequently operating not only locally but internationally. Their significance in the development of individual countries is highlighted by numerous scientific studies (e.g. Czeglédi, Fonger, & Reich 2015; Hsuehchang, 2013; Radas, Božić, 2009). As a result, various actions are taken to ensure the comparability of financial statements on an international scale. These include the International Accounting Standards Board's special financial reporting standard specifically made for small and medium-sized enterprises: IFRS for SMEs (Albu et al., 2013). The concern for the development of small and medium entities is visible in the legal regulations created in the European Union. In recent years, with Directive 2013/34/EU significant simplifications have been introduced to the financial reporting of the smallest entities in order to facilitate their operations, development and even transparency of financial statements (eg. Bušovová, Dřínovská, Gláserová & Otavová 2016; Bauer, 2016; Provasi & Sottoriva, 2015; Mamić Sačer, Dečman & Sever 2015).

However, despite the changes leading to the development of SMEs, there are entities which – due to small size and specificity of the operations – have no need to use complicated accounting rules. In Poland, most businesses use simplified forms of recording business activity. In the course of ordinary business operations, this is a significant simplification and a reduction in the operating costs of these entities. However, there are situations in which all entities, regardless of size, are required to prepare financial statements or some of its elements. One such case are two of four types of restructuring proceedings. Obligatory requirement to prepare financial statements for all entities also applies to the trustee on the day preceding the declaration of bankruptcy.

In Poland, the method of valuation and recording data in books of account – also in the case of bankruptcy – is defined by the balance sheet law. On the other hand, the bankruptcy law determines the moment financial statements are to be submitted to court and made available to parties of the court proceedings. In recent years, financial reporting requirements during bankruptcy proceedings in Poland have been minimized, also in the case of SMEs which were not obliged to prepare financial statements in the course of ordinary business activity (Bauer, 2015).

The ideas considered in this paper are based on the assumption that the current reporting requirements are not unchangeable. The law constantly evolves. In addition, accounting has been developing for centuries, along with changes to the economic environment, and even as a response to its needs. Changes to the scope of financial reporting of entities undergoing bankruptcy may be due to information needs of involved parties, bankruptcy professionals and practitioners. Therefore, knowing their needs in reference to making financial statements available is significant.

In the context of the above considerations, the purpose of this paper is to analyze the opinion of insolvency specialists, with particular emphasis on practitioners as a factor that can determine future changes in the financial reporting of SMEs undergoing bankruptcy proceedings.

The experience of insolvency experts on the quality features of financial statements provided in court by non-bookkeeping entities (as a determinant of their usefulness) and the possibility of exempting them from the obligation to prepare any items of financial statements during bankruptcy proceedings will be examined.

The presented results are part of a wider research into the role of accounting in the bankruptcy proceedings. The survey was conducted on a sample of 58 bankruptcy specialists. This group includes not only judges, trustees with in-depth legal knowledge and many years of experience in insolvency proceedings, but also members of the Minister of Justice Council for the Amendment of Bankruptcy and Reorganisation Law, who had a real impact on the new Bankruptcy Law, including financial information.

2. ACCOUNTING AS AN INFORMATION SYSTEM FOR STAKEHOLDERS OF BANKRUPTING ENTERPRISES: THEORETICAL BACKGROUND

Accounting, as a rule, is focused on being an information system for companies continuing their business operations. This goal is reached through the creation and publication of high quality financial reports. As highlighted by International Financial Reporting Standards “*The objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity. Those decisions involve buying, selling or holding equity and debt instruments, and providing or settling loans and other forms of credit*” (The Conceptual Framework For Financial Reporting, 2017, The Blue Book, OB2). In this context, entities during insolvency are not those that would be, in accordance with IFRS, the main reason for drawing up financial statements. The aim of the bankrupting business is to efficiently handle the insolvency proceedings, including the repayment of as much of the debt as possible. These entities do not acquire new investors, lenders and other creditors, and their information obligations regard creditors who have invested their assets in the pre-bankruptcy period and court representatives (Bauer, 2015).

IFRS do not exclude the possibility for other users to use financial statements, such as regulators and members of the public other than investors, lenders and other creditors. However, IFRS explicitly state that, financial reports are not primarily directed at these other groups (The Conceptual Framework For Financial Reporting, 2017, The Blue Book, OB10). With this in mind, the courts and their representatives may also be parties using financial statements in the assessment of bankrupt entities, for example for the purpose of covering bankruptcy costs or the possibility of satisfying the claims of creditors (Bauer, 2015). As research indicates, both qualitative and quantitative information is essential in assessing bankruptcy risk (Zorn et al., 2017, p. 25).

In Poland, according to the Doing Business Report, insolvency proceedings take an average of 3 years (World Bank Group, 2017). At the same time, scientific studies point out that accounting marginalizes the information needs of entities where continuation of business operations is at risk (Walińska, Jędrzejewski, 2009, p. 116, Bauer 2015), and the quality of reporting data is unsatisfactory (Wędzki, 2012, p. 178). The fact that correct application of balance sheet law can lead to distortions of the financial situation of an entity is a major limitation to the informative role of accounting in the bankruptcy process (Mączyńska, 2009).

However, the new law mainly uses financial data as the grounds to start bankruptcy proceedings (Górowski, 2016, p. 216), and the widespread use of the financial statement in bankruptcy predictions indicates that it contains information significant when assessing the company's financial condition (Wędzki, 2013, p. 452). In spite of problems that occur because of accounting of insolvent entities, the data derived therefrom become elements of the insolvency information database. These elements become useful for creditors if, of course, they are granted access to court records.

Regardless of certain "defects" of accounting rules for bankruptcy, not only in Poland but also in other countries, financial statements are an element of the bankruptcy information database (Smith & Stromberg, 2004).

Beginning January 1, 2016 bankruptcy proceedings in Poland, are proceedings which lead to the liquidation of assets of insolvent debtor. Starting X 2003 till the end of 2015 bankruptcy proceedings could also take the form of proceedings leading to an arrangement. This type of proceedings are restructuring proceedings as of 2016.¹

In Poland, the scope of data provided by accounting for the bankruptcy proceeding has been significantly reduced in recent years. The Bankruptcy and Reorganization Law (BRL) imposed an obligation on the debtor to submit a financial report to court (starting 2003, when the law went into effect). Only in situations where the debtor was not required to keep accounts book could he request to submit only the balance sheet. However, after a few years the obligation was reduced for all debtors to submit it to court together with the request for bankruptcy of the balance sheet. On the other hand, if the debtor did not keep an accounts book, he was entitled to apply for exemption from submitting to court any element of the financial statement. The current bankruptcy law, which has been in effect since 2016, upheld the same obligations to submit to court elements of the financial statement (by both the debtor and the trustee).

Among bankrupt entities, the vast majority of them are SMEs (Coface Annual Report, 2017, p. 7), which use The Polish Accounting Act or just simplified forms of tax returns.

In practice, the Bankruptcy Law provides the possibility to take on a simplified approach to reporting obligations by the SMEs. Debtors whose entity does not keep accounts book, have the right to seek exemption from the obligation to submit the balance sheet to court. On the other hand, after bankruptcy is declared, the trustee is obliged to prepare a financial statements for the day preceding the declaration of bankruptcy. This obligation applies to all entities, regardless of their size (Bauer, 2015).

The law evolves with changes in the economic environment. Changes in accounting and reporting have a significant impact on the expectations of users. In the case of insolvency proceedings, changes in the information provided by accounting are also visible in recent years. Further development or reduction in the amount of information can be due to the needs of insolvency specialists and their perception of information needs of proceedings' participants.

¹ Restructuring proceedings are a separate issue and are not discussed in this paper.

3. THE SIGNIFICANCE OF THE FINANCIAL STATEMENT OF NON-BOOKKEEPING ENTITIES IN THE OPINION OF INSOLVENCY SPECIALISTS

3.1. Financial statement in insolvency proceedings in previous research

Nobel Prize winner J. E. Stiglitz, among others, encourages scientists to conduct research into the economic side of the bankruptcy process (2004, p. 9): “Most economists do not spend much time analyzing the economic consequences of alternative bankruptcy codes, but modern capitalism could not have developed without bankruptcy”. A similar view is expressed by E. Mączyńska (2008, p. 12–15). She stated that the studies related to the bankruptcy of companies are still insufficient. At the same time, insufficient identification of the occurrence of bankruptcy can foster its spread. Research on financial reporting during a bankruptcy threat and at time of bankruptcy is part of an effort to reduce the negative effects of bankruptcy of businesses.

Research on the possibility to use financial statements for corporate bankruptcy concerns is mainly focused on the subject of bankruptcy prediction. The issue of bankruptcy early warning models in world literature was disseminated several decades ago by such scientists as E. I. Altman, K. Breeman, G. Springate, J. G. Fulmer, H. Koh and L. Killough (Hołda, 2006).

The issue of modeling bankruptcy is relatively new in Polish scientific literature. The increased interest in this topic is related to the departure from a centrally planned economy towards a market economy. Studies about forecasting bankruptcy were conducted by: Waśniewski and Skoczylas, Mączyńska, Gajdka, Stos, Hadasik, Appenzeler and Szarzec, Wędzki, Hołda, Prusak, Hamrol, Czajka, Piechocki and Szczerbak.

The issue of financial statements as a source of information in the bankruptcy process in both Polish and international literature is extremely rare. Most of the work are theoretical studies containing concepts and analyses of the impact of law on the accounting of the bankrupt (e.g. Newton, 2010). There is also a trend in the way reporting valuation is carried out and utilized for the purpose of insolvency proceedings (Bauer, 2015a; Bauer, 2014). Empirical research has also been conducted on the availability of financial statements in court files of bankruptcy proceedings (Bauer, 2015b; Bauer, 2009).

Research on the role of financial statements of entities from the SME sector is far less numerous. These studies focus on the potential use of accounting data for risk assessment of these entities (eg Gordini, 2014, p. 6433–6445; Pederzoli, Torricelli, 2010, 5–9; Altman, Sabato, 2005, p. 15–42). F. Ciampi and N. Gordini (2013, p. 23) point out that studies mainly focus on medium and large enterprises that systematically produce detailed financial documentation, whereas only a small number of authors pointed out that specific default risk models are required to evaluate the risk profiles of small firms.

At the same time, he believes that specific models are important because small enterprises (SEs) represent a significant part of the economy of virtually every nation. In the context of the planned research, attention should be paid to the conclusions of E. I. Altman, G. Sabato and N. Wilson (2010, p. 1–33). The authors point out the need to supplement accounting information with non-financial and “event” information data when creating credit risk models for small and medium enterprises. As a result of the research, they state that data relating to legal action by creditors to recover unpaid debts, company filing histories, comprehensive audit report/opinion data and firm-specific characteristics make a significant contribution to increasing the default prediction power of risk models built specifically for SMEs.

Research on the use of financial statements during bankruptcy proceedings of non-bookkeeping entities is pioneering. So far, this subject has not been taken up. Nevertheless, in the context of the introduced simplifications for SMEs in the European Union, the author would like to draw attention to financial reporting of the smallest entities undergoing bankruptcy proceedings.

3.2. Data and research methodology

Empirical research was conducted between June 2016 and January 2017.

During the first stage, questionnaires were filled out by participants of the Third Congress of Restructuring Law on June 16–17, in Warsaw. About 200 insolvency and bankruptcy specialists, including insolvency judges, trustees, other insolvency practitioners and members of the Council of Ministry of Justice for the Amendment of Bankruptcy and Reorganisation Law, who created an amendment to the Bankruptcy Law, which came into effect on January 1, 2016. During the Congress, 34 filled out questionnaires were returned.

Due to insufficient sample size, the second part of research was expanded by including in the sample group bankruptcy practitioners who cooperate with the District Court for Krakow-Centre in Krakow, the 8th Economic Division for Bankruptcy-Restructuring and the Katowice-East District Court in Katowice, the 10th Economic Division for bankruptcy. In the second stage of the study, the sample was increased by 24 participants, resulting in 58 questionnaires returned altogether.

It is worth noting that the research sample included:

- 10 judges conducting insolvency proceedings²,
- 11 members of the Minister of Justice Council for the Amendment of Bankruptcy and Reorganisation Law,
- 51 people who have declared that they have practical experience in insolvency proceedings conducted in 2013–2015; 30 of them have declared to also have practical experience in proceedings under the Law that went into effect in 2016.

The group of bankruptcy specialists, due to the limited nature of the phenomenon, is not large. The sample group includes answers of almost 40% of all the members of the Justice Council for the Amendment of the Bankruptcy and Reorganisation Law (the council consists of 28 members) (Ministry of Justice, 2012). The sample group also includes a large percentage of insolvency judges. According to the data of the Association of Restructuring and Bankruptcy Judges, there are 12 departements in Poland dealing exclusively with bankruptcy cases. There are a total of 87, 8 job positions for judges in these departments. In addition, there are 18 economic departments, which also deal with insolvency cases. However, there is no known number of judges who deal with insolvency proceedings in these departments.

The research sample collected allows to assume that the completed questionnaires contain the opinions of those who, in their professional work, influence the scope and even the quality of financial documentation collected in court for the purpose of bankruptcy proceedings.

3.3. Research procedure and results

The focus of the research was entities from the SME sector that do not keep books of account in the course of normal business operations. In recent years, their reporting obligations have been significantly reduced in the bankruptcy proceeding. As the expectations of stakeholders affect accounting requirements, it was considered advisable to examine the insolvency experts' opinion on:

- their experience with regard to the qualitative characteristics of non-bookkeeping entities which have drawn up documents for the purpose of insolvency proceedings,
- abolition of the obligation to submit to court any elements of the financial statement of the aforementioned entity.

In the context of the above considerations, two of the questions posed to insolvency specialists concerning non-bookkeeping entities were taken into account. Questions that were in the form of a scale assessment request and the responses received are listed below.

Question 1:

Please evaluate respective qualitative characteristics of financial statements which you have analyzed during bankruptcy proceedings for NON-BOOKKEEPING ENTITIES, on a scale of 1 to 5 (where 1 means insufficient and 5 means very good):

² 15 respondents indicated double occupational affiliation. One of the judges declared that his leading occupation was scientific work in the field of legal science. At the same time he indicated that he had practical experience in insolvency proceedings.

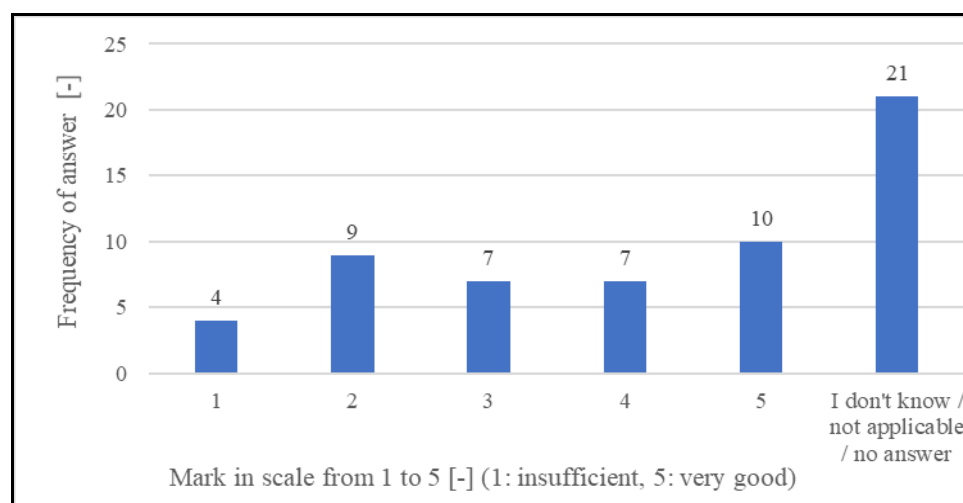
- a) relevance, this means that, reporting information can influence users' decisions (Fig. 1)
- b) faithful representation, means completeness, no errors and impartiality of information in reports (Fig. 2)
- c) comparability, this means that, the financial data of the entity can be compared between the reporting periods (Fig. 3)
- d) comparability, this means that, the financial data of a given entity can be compared to other entities (Fig. 4)
- e) verifiability, allows for the verification of the amount or other parameters through observation (Fig. 5)
- f) timeliness, this means giving information in time to enable the user to make a decision (Fig. 6)
- g) understandability, this means clarity and conciseness of information (Fig. 7)

Answers “I don't know”, “not applicable” and no answer were added collectively, in the last bar. In all cases 6 people answered “I don't know”, 13 “not applicable”. 2 people provided no answer to most characteristics, only in the assessment of “understandability” no answer was given by 4 people.

Such a high total non-response rate (36%–40% of all respondents) points to the problem of assessing the qualitative characteristics of financial statements of non-bookkeeping entities by bankruptcy professionals.

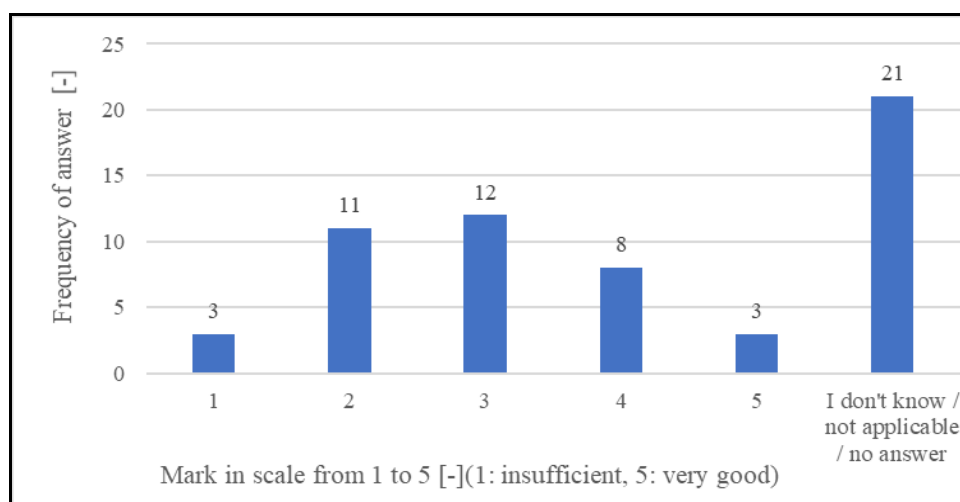
The distribution of responses is shown in the graphs below (Fig.1–Fig.7)

Figure 1. Relevance, as a characteristic analyzed by insolvency specialists in bankruptcy proceedings of non-bookkeeping entities



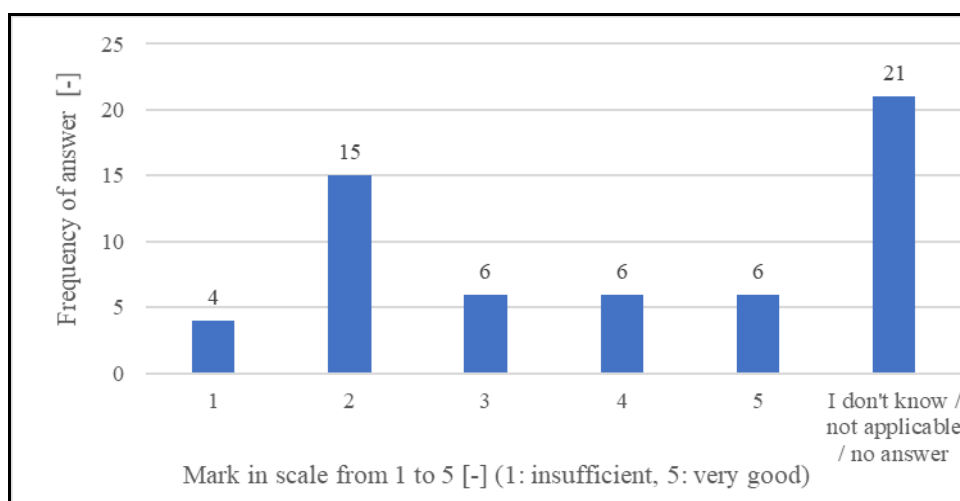
Source: own study

Figure 2. Faithful representation, as a characteristic analyzed by insolvency specialists in bankruptcy proceedings of non-bookkeeping entities



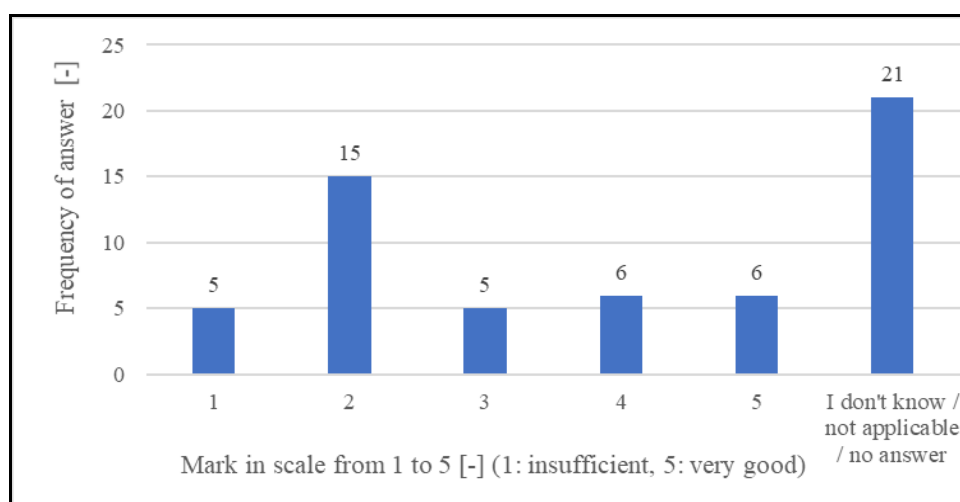
Source: own study

Figure 3. Comparability of financial data over various periods, as a characteristic analyzed by insolvency specialists in bankruptcy proceedings of non-bookkeeping entities



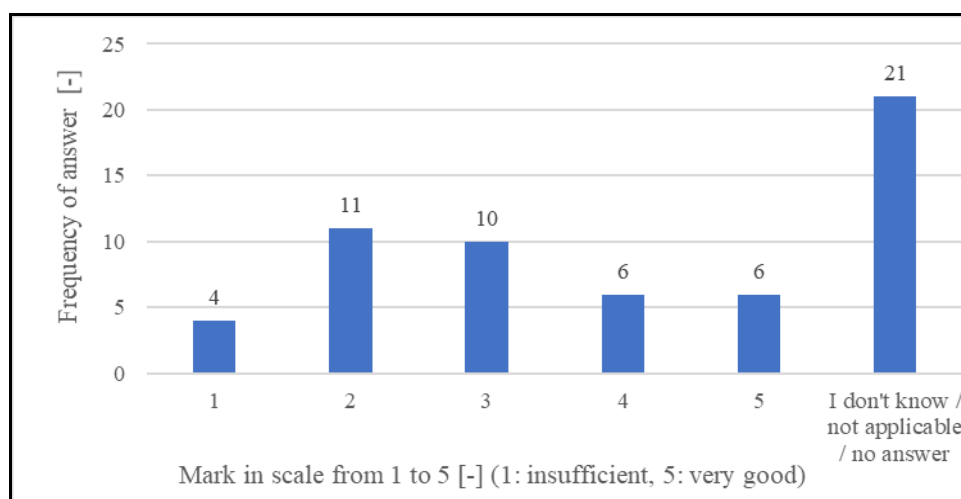
Source: own study

Figure 4. Comparability of financial data between entities, as a characteristic analyzed by insolvency specialists in bankruptcy proceedings of non-bookkeeping entities



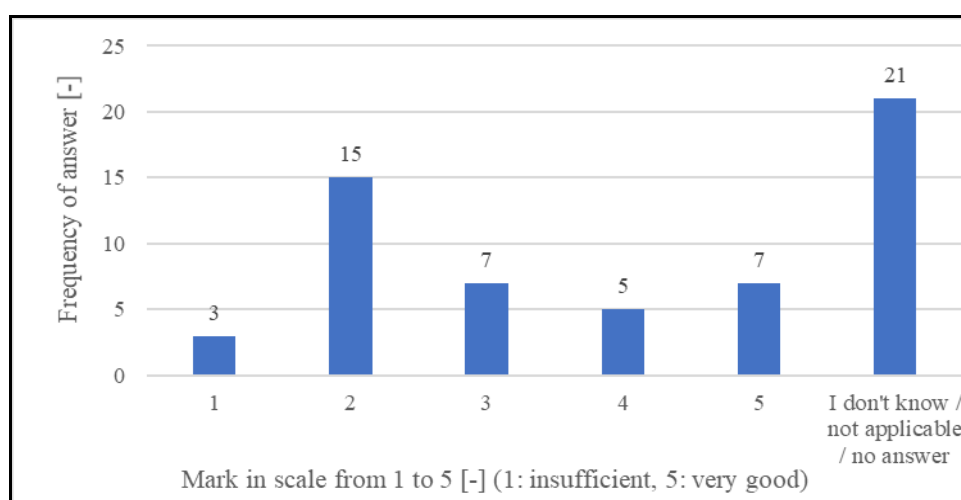
Source: own study

Figure 5. Verifiability, as a characteristic analyzed by insolvency specialists in bankruptcy proceedings of non-bookkeeping entities



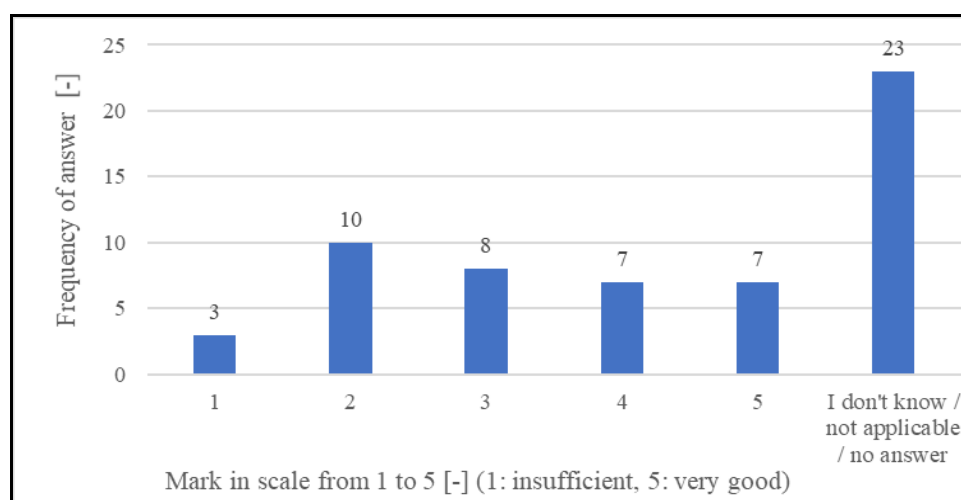
Source: own study

Figure 6. Timeliness, as a characteristic analyzed by insolvency specialists in bankruptcy proceedings of non-bookkeeping entities



Source: own study

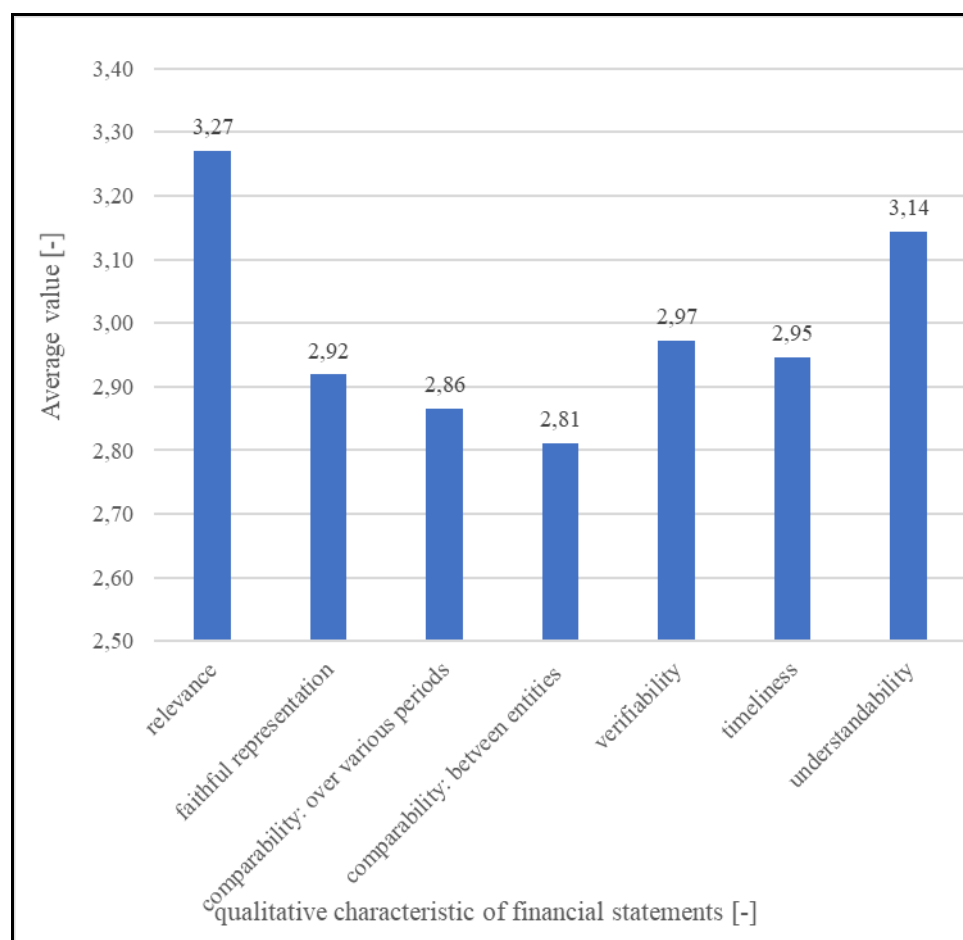
Figure 7. Understandability, as a characteristic analyzed by insolvency specialists in bankruptcy proceedings of non-bookkeeping entities



Source: own study

With regard to all qualitative characteristics of financial statements drawn up for non-bookkeeping entities which were being researched, insolvency specialists did not take a clear stand. This is primarily shown by the relatively high proportion of respondents who did not make a scale assessment. In addition, all respondents indicated both extremely negative and very positive responses. Due to the lack of unambiguous assessments, the average for individual qualitative characteristics of financial statements was derived, based on the experience of bankruptcy specialists (Fig. 8).

Figure 8. The average for individual qualitative characteristics of financial statements analyzed by insolvency specialists during bankruptcy proceedings of non-bookkeeping entities



Source: own study

Among the qualitative characteristics of financial statements drawn up for insolvency purposes for non-bookkeeping entities, the best ranked average is relevance. As second, respondents indicated understandability. The worst ranked was the features of comparability, between entities as well as over various periods. All averages oscillate around 3.

In the course of further research, it was decided to check whether bankruptcy specialists are in favor of the possibility to exempt non-bookkeeping entities from the obligation to prepare any elements of the financial statements for the purposes of insolvency proceedings.

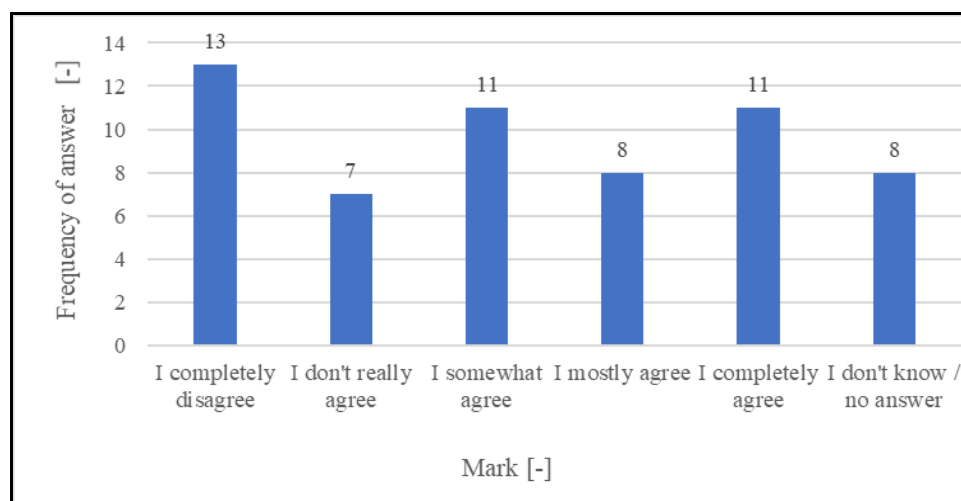
Question 2

Please provide your opinion to the following statement, using a scale from 1 to 5 (1 means I strongly disagree, 5 means I completely agree) whether exclusion of NON-BOOKKEEPING ENTITIES from the obligation to prepare any elements of financial statements for insolvency proceedings is reasonable.

More respondents provided answers to this question than question 1. Only 6 people responded "I don't know" and 2 people did not choose any answer on the scale. This means that,

a significant proportion of people who were unable to provide comments on the quality features, provided their opinion on the idea of eliminating the obligation to submit to court any elements of the financial statements by non-bookkeeping entities. The results are shown in Fig. 9.

Figure 9. Insolvency experts' opinion on the possibility of exempting non-bookkeeping entities from the obligation to submit to court any elements of the financial statement



Source: own study

The answers to the questions posed, indicate a significant differentiation of opinions among insolvency specialists on the subject matter which was researched. 20 respondents disagreed with exempting non-bookkeeping entities from the obligation to submit to court any elements of the financial statement, while 19 respondents favor such exemption.

The conducted study indicates that there is no clear assessment of both the qualitative characteristics of the financial statements of non-bookkeeping units and the assessment of the possibility of exempting those entities from submitting financial statements or elements thereof to court. As shown by the results, insolvency experts differ in their opinions on the financial statements of the analyzed entities.

They can therefore be considered as a group of external stakeholders, which – due to significant differences of opinion on the financial statements of non-bookkeeping entities – will not have a significant influence over changes in this area.

4. CONCLUSIONS

At present, on the territory of the European Union steps are being taken to facilitate accounting for entities from the SME sector, such as the simplification of financial statements for micro and small entities. In Poland, these changes have even resulted in an increase in the income threshold which indicates the need to maintain books of account. However, in recent years there has been a decrease in reporting requirements not only for the smallest businesses but also those undergoing bankruptcy.

The information obligations of entities in the bankruptcy proceeding should depend on the characteristics of these entities, their ability to draw up documentation and the information needs of stakeholders. It should be noted that entities undergoing bankruptcy may have trouble paying extra court proceedings costs. It is said that you have to be quite rich to go bankrupt (Marsh, 2010, p. 45). Therefore, limiting their reporting obligations just to information necessary to attain clarity of the information during the bankruptcy proceeding should be optimal.

As a result of the research, it was found that the opinions of bankruptcy specialists concerning the financial statements of the examined entities are very different, both extremely positive and negative. The results of the study indicate a low assessment by insolvency

professionals of the qualitative characteristics of financial statements of entities which were studied. Relevance was best rated – on a scale from 1 to 5 this characteristic was rated 3.27, which is slightly above average. At the same time, the results of the study do not provide an unambiguous declaration about the possibility of exempting entities which were researched from the obligation to submit financial statements to court.

Research on the role of financial statements in the bankruptcy proceeding is very rare. It concerns mainly theoretical considerations related to the discussed issue, although in recent years empirical research has been conducted in Poland on the availability in court, of various elements of financial statements and reporting valuation of assets of the bankrupt. Research on the role of financial statements in bankruptcy predictions is much more frequent. A small proportion of these studies concerns SMEs. Research on the economic aspects of bankruptcy proceedings both in Poland and in other countries is difficult since bankruptcy is widely regarded as a legal process rather than an economic process and due to the lack of databases containing financial data related to bankruptcy.

However, such scholars as Nobel Prize winner J. E. Stiglitz are encouraging scientists to study the economic side of the bankruptcy process, stating that this research is necessary for the proper execution of the bankruptcy proceedings.

The results discussed in this paper are considered by the Author as a contribution to further research. However, the sample group being used is a significant proportion of bankruptcy experts in Poland.

Due to a low number of questionnaires, the research will be continued on a larger sample group. It will also be continued in the context of linking past experience with the quality characteristics of financial statements of the analyzed entities and the possibility of exempting them from the obligation to submit financial documents to court.

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AN ANALYSIS OF THE INFORMATION TECHNOLOGIES USED IN THE ACCOUNTING DEPARTMENT IN ROMANIA. EVIDENCE BEFORE AND AFTER THE ECONOMIC CRISIS

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Abstract

In this research we established the impact of information technologies on the Romanian companies' accounting department. We distributed questionnaires in two different moments in time: 2007 and 2014 (before and after the economic crisis). Our investigation focuses on: (i) the types of technologies used, (ii) the reasons of implementation of specific technologies, (iii) the benefits brought by the use of IT, (iv) the difficulties met during the implementation process and (v) the future effects of the IT. We came to the conclusion that there is a change in the degree of implementation of the information technologies in the Romanian enterprises. Previous studies show a varied range of benefits generated by IT, but also a great number of difficulties generated by their adoption. In this research, we followed the manner in which the different types of IT influence the activity of the persons employed in the accounting departments of the companies functioning in Romania. We pursued all the aspects which have to be taken into account by a person who decides to implement technologies: the way the company obtained IT (by purchasing them or by developing them within the company), the types of application used within the accounting department (an ERP system or independent applications), the expected benefits, the difficulties encountered, the future effects which can be exploited.

Keywords: *information technologies, accounting, transition economy, Romania, economic crisis*

1. INTRODUCTION

The long-term growth and its sustainability in transition economies such as Romania depend on the success of private enterprise management (Lukman et al., 2011; Themistocleous et al., 2011). In transition economies (namely the countries situated in the Eastern Europe and the ones that resulted from the breakup of the Soviet Union), the information technologies (IT) offer a good support for the managers, who frequently lack other resources (Roztocki & Weistroffer, 2008). The research regarding the use of IT in the transition economies is low (Roztocki & Weistroffer, 2015; Soja & Cunha, 2015). Yet, as the settings of the developed economies cannot be compared with the transition economies, the research results from the first ones may not be correct for the second (Hoskisson et al., 2000). Prior research in Romania and in other transition economies suggests that existing solutions are not readily available and face human-related challenges. The importance of this study is given by the fact that nowadays the population of the transition economies represents about a third of the total population of the world (Soubotina & Sheram, 2007). Also, considering that these countries had for about a half of a century a comparable economic evolution, the analysis of the evolution of the IT in case of one country can emphasize some characteristics specific to the entire group.

The present economic environment of these countries is characterized by the need to work with big volumes of data, competition, complexity, frequent changes etc. In this context, IT becomes a need for the survival of the companies, instead of a competitive advantage. The pressures put on IT led to their development, making them capable to face the present needs of the companies.

Previous studies show a varied range of benefits generated by IT, but also a great number of difficulties generated by their adoption. In this research we followed the manner in which the different types of IT influence the activity of the persons employed in the accounting departments of the companies functioning in Romania. We pursued all the aspects which have to be taken into account by a person who decides to implement technologies: the way the company obtained IT (by

purchasing them or by developing them within the company), the types of application used within the accounting department (an ERP system or independent applications), the expected benefits, the difficulties encountered, the future effects which can be exploited.

This paper is structured as it follows: (i) the literature review regarding the impact of IT, (ii) background, (iii) the research method, (iv) the results of the research based on a questionnaire, (v) conclusions.

2. LITERATURE REVIEW

During the soviet influence, in the transition economies the accounting information was not transparent and the control only targeted the fulfilment of planed objective. After the fall of the communism in the 90s and the new status of these countries, IT's role changed. The IT characteristics in transition economies are presented in Table 1.

Table 1. IT characteristics in transition economies

Characteristics	Source
Lack of strategic role of IT	Roztocki & Weistroffer, 2008; Soja, 2011; Soja & Paliwoda-Pękosz, 2013
Lower level of IT use	Soja, 2011; Zuboff, 1985
Need for external support in IT adoption	Bernroider et al., 2011; Lech, 2012; Themistocleous et al., 2011
Impact of IT-related foreign investments	Dobija et al., 2012; Samoilenko, 2008
Insufficient customer-orientation	Ketikidis et al., 2008
Inadequate planning	Ketikidis et al., 2008; Soja, 2008
Restricted resources	Soja, 2011; Soja, 2008
Critical role of people-related considerations	Zuboff, 1985

The research regarding the use of IT in transition economies is mostly directed towards the themes presented in Table 2.

Table 2. The use of IT in transition economies

Theme	Examples of articles
IT adoption and diffusion	Bernroider et al., 2011; Lech, 2012
IT implementation	Hovelja, 2009
Economics of IT	Albu et al., 2015; Dewan & Kraemer, 2000; Dobija et al., 2012; Gerasymchuk & Sakalosh, 2007
Enterprise systems	Soja, 2008; Soja & Paliwoda-Pękosz, 2009
E-commerce	Bauer et al., 2010; Davidavičienė & Tolvaišas, 2011; Djurickovic & Kovacevic, 2011
E-government	Bogdanovic & Pinteric, 2008; Djurickovic & Kovacevic, 2011
IT investment	Hanafizadeh et al., 2009

The reasons identified for the low IT investments in transition economies include the high costs (with the licenses, implementation, maintenance, etc.) and the lack of knowledge of the users (Bernroider et al., 2011; Soja, 2008; Soja & Paliwoda-Pękosz, 2009). Prior research brings evidence that the lack of training and the existing infrastructure represent difficulties in the IT adoption process (Albu et al., 2015; Soja & Paliwoda-Pękosz, 2009); consequently, IT customization and simplification are needed (Bernroider et al., 2011). On the other hand, the expected benefits are the following (Soja, 2015): data availability and better information flow, improvement of company process, legacy system shortcomings, economic indicators improvement, company development and growth, organizational and system integration, reaction to company environment, external factors, system modernization,

business process reengineering.

Previous studies focused on the analysis of the impact of IT on the financial accounting (Debreceeny & Gray, 2001; Dewan & Kraemer, 2000), management accounting (Gerasymchuk & Sakalosh, 2007), audit (Banker et al., 2002; Stanciu & Mangiuc, 2006) etc. The advantages brought by IT in the accounting departments are not necessarily quantifiable (such as, for instance, an improvement of the company's productivity); they can also be intangible (for instance, transforming the work of the accountants, which can lead in the end to an increase in productivity). Potential effects of the use of IT are the dematerialization of the documents and procedures, the inter-organizational information systems, the definition of the roles in organizations and the improvement of the managerial processes (Reix, 2002).

In order to describe the benefits and to analyse the difficulties generated by the IT we used in the questionnaire two classifications, as it follows: (i) the classification suggested by (Shang & Seddon, 2002) in order to describe the benefits (operational, managerial, strategic, IT infrastructure, organizational) and (ii) the classification suggested by (Soja, 2008) regarding the difficulties (economic, technical, organizational, social).

3. BACKGROUND

The study was made on a sample of companies from Romania, a country in South-Eastern Europe, in transition from the communism. It relied on a questionnaire that was distributed to the same sample of companies in 2007 and 2014. The years chosen were representative for the country. 2007 was one year ahead of the economic crisis. Romania became a member of the European Union on January 1st 2007 and had a period of economic boom. The managers did not grant a too big importance to the information offered by the accounting department, using mostly other sources of information in the decision-making process. Accounting was considered a useful tool for the achievement of the requirements of the state. In 2008 the Romanian economy faced a slowdown. The first effects of the crisis appeared: the products and services request decreased significantly, the competition became stronger. This led to a consolidation of the decision-making process for the companies. Management became more careful, starting to use strategies for the cost control and reduction. For this, it had to ask for more financial and nonfinancial information from the accountants. Lots of the data was obtained with the help of more advanced IT, such as the ERP systems (ERPS). The second moment of the study was 2014, when the economic crisis was over, but left behind companies better focused strategically.

4. RESEARCH METHOD

The questionnaire tested the opinion of the accountants regarding the impact of IT. In 2007, the questionnaire was distributed by e-mail to accountants of the companies which were randomly selected. In September 2014, the questionnaire was disclosed on Google Drive. The invitation to answer to the questionnaire was sent to the accountants employed in the companies included in the study in 2007. We received 82 answers to the questionnaire in 2007 and 77 in 2014.

The questionnaire included fourteen questions. They were split into two parts. Based on the answers received to the questions included in the first part, the companies were classified in terms of size.

The next part was dedicated to the collection of the data regarding the IT used in the accounting department. The questions analysed:

- The adoption of a computers network;
- The way in which the IT was brought into the company;
- The types of IT used for the accounting information;
- The most important criteria for choosing the IT systems;

- The degree of use of Excel;
- The positive effects generated by the use of the IT systems;
- The difficulties which appeared in the implementation of the IT systems;
- The future effect of the use of IT on the company;
- The degree in which the needs of the users are satisfied by the technologies used.

The variables used in the statistical tests were codified as presented in Table 3.

Table 3. Variables used

Question	Variable	Description	Values		
			-1	0	1
Q I.2	VB01	Turnover			
Q I.5	VB02	Existence of a computers network:		No	Yes
Q II.1	VB03	The computerization of the accounting department	by developing software within the company	by purchasing software from one IT company	by purchasing software from several IT companies
Q II.2	VB04	Type of software used in the accounting department	independent software on activity types produced by several companies	independent software on activity types produced by one company	an ERPS
Q II.4	VB05	Percentage of works made with Excel	0–33%	33–66%	66–100%
Q II.6A	VB06	Operational benefits		No	Yes
Q II.6B	VB07	Strategic benefits		No	Yes
	VB08	Managerial benefits		No	Yes
Q II.6D	VB09	IT infrastructure benefits		No	Yes
Q II.6E	VB10	Organizational benefits:		No	Yes
Q II.8A	VB11	Dematerialization of the documents and procedures		No	Yes
Q II.8B	VB12	Computerization of the inter-organizational relationships		No	Yes
Q II.8C	VB13	Redefinition of roles within organizations		No	Yes
Q II.8D	VB14	Improvement of the managerial processes		No	Yes
Q II.9	VB15	Percentage in which the software corresponded to the expectations of the respondent	No	1–50%	> 50%

The companies of the respondents were included in an activity industry (production 23.17%; distribution 35.37%; services 39.02%; other domains – such as IT, constructions -2.44%. thus, in terms of size, we can say that we have a good representation of our sample.

The data was analysed using the statistics software Eviews.

5. RESEARCH RESULTS

a. Preliminary Analysis

The preliminary analysis of the results is presented in Table 4.

Table 4. Preliminary analysis

Option	2014 (%)	2007 (%)
Part A. Size of the companies analysed		
Number of employees		
- Between 1 and 25	35.10	40.24
- Between 26 and 100	53.25	56.10
- Over 100	11.70	3.66
Turnover		
- Between 0 and 1,000,000 euro	74.00	57.32
- Over 1,000,000 euro	26.00	42.68
Total assets		
- Between 0 and 1,000,000 euro	79.20	56.10
- Over 1,000,000 euro	20.80	43.90
Part B. Computerization of the accounting department		
By developing software within the company	16.88	17.07
By purchasing software from several IT companies	11.69	25.61
By purchasing software from one IT company	71.43	57.32
Part C. The type of software used in the accounting department		
An ERPS	53.25	41.46
Independent software on activity types produced by one company	31.17	42.68
Independent software on activity types produced by several companies	15.58	15.85
Part D. Most important factors involved in the software selection		
Quality/Cost report	68.44	30.49
The complexity of the application and the fact that it covers the entire activity of the company	68.23	52.44
Other factors	42.86	2.44
The references regarding the software, especially the ones received from companies in the same activity domain	38.27	15.85
The professionalism of the team that presented the software	25.97	6.10
The time requested by the implementation of the software	23.38	1.22
Part E. The use of Excel or similar software		
0–33%	59.74	58.54
33–66%	23.38	20.73
More than 66%	16.88	20.73
Part F. The future effects of the implementation and use of IT		
The articulation of the information system, internal control and governance	71.43	81.71
The computerization of the inter-organizational relationships	70.13	80.49
The improvement of the managerial processes	67.53	80.49
The dematerialization of the documents and procedures	49.35	67.07
The redefinition of the roles in the organizations	46.75	63.41

In most of the companies included in our sample (74.39% in 2014 and 64.94% in 2007) there is a computer network that works in the entire company. The software used in accounting department was brought using the ways included in Table 4, part B. We notice a dramatic change in the situation during the period analysed. While most of the software was delivered by only one IT company both in 2014 and 2007, the percentage increased a lot during the second period. Another important finding is that the percentage of companies in which the software for the accounting department was produced in-house decreased. These may be related with the change in the accountants' role after the crisis (Albu, 2013). The categories of software used in the accounting department are presented in Table 4, part C.

The results are in line with the ones obtained to the previous question. We notice that there is a very small difference in the percentage of the companies purchasing software from several companies, but more than a half of them own an ERPS in 2014. The finding corresponds with the

changes in the economic environment produced during the crisis in Romania, proving once again that the managers adopt a more strategic view in their decision-making process.

The most important factors used to select the software for the accounting department are presented in Table 4, part D. The percentage is computed as the number of respondents identifying a certain criteria divided by the total number of answers. We notice that the percentages are much higher in 2014. Most of the respondents selected more than one option. In total, there were 204 options selected (89 in 2007), with an average of 2.65% (1.09% in 2007). It shows that the buyers are paying more attention to what they are buying and are better informed. Also, we notice that in 2014 there were several important factors with high scores, while in 2007 the complexity of the software has a score a lot higher than the second factor ranked. In the same time, the respondents mentioned many other factors considered in the software selection. The most important were the availability of the IT company to change the software sold and the strategic alignment between the software and the activity of the company.

Excel or similar software is used by the companies in our sample in the two moments in time in the percentages presented in Table 4, part E. Even though the percentage of the departments in which Excel is used for less than 33% of the works only slightly increased, an important finding for our research is the decrease in the percentage of the ones using Excel for more than 66% of the works. Excel is used for the preparation of the cash flow statement, the budgets, various reports and analyses etc.

In terms of benefits arising from the implementation of information systems, and the difficulties encountered, data comparability is not 100% assured. Respondents had particular difficulties in 2007 with these questions, which led to their reorganization.

The operational benefits (e.g. operating time, increased productivity) were preferred by respondents in both studies, being classified in first place. The benefits generated by the IT infrastructure faced a considerable change: in 2014 were classified third out of five (79%) and in 2007 in last place (1.75%).

The difficulties encountered in implementing IT were tested in 2007 through an open question that received only 29 responses, among which: delays in reporting, definition of integrity restrictions, difficult collaboration with IT specialists, long implementation time, importing data from the old system, the software company not knowing the domain's characteristics, crowded staff, etc. In order to increase responses, respondents were offered a multiple choice question in 2014. The percentage of respondents who selected each option was: organizational -48%; technical -43%; economic -25%; social -20%.

The future effects of the implementation and use of IT the respondents reported are detailed in Table 4, part F. We notice that the ranking remained unchanged. However, the percentages decreased for all the effects expected from the software used in the accounting department. Other future effects mentioned by the respondents were: the reduction of the decision-making time, saving resources, generation of correct and coherent information, a better analysis of the costs, the possibility of integration of the accounting software.

The biggest part of the respondents (71% in 2014 and 93.91% in 2007) considers that the information systems implemented in the accounting departments corresponded to their requests in a percentage higher than 50%.

b. Regression Analysis

Based on the correlation matrix for 2014 we could test the following model:

$$VB01 = \alpha + \beta VB02 + \gamma VB04 + \lambda VB11 + \varepsilon$$

where: α , β , γ , δ are the correlation coefficients and ε is the intercept.

This regression analysis tests the correlation between the turnover (VB01) and the existence of a unique computers network (VB02), the type of software used in the accounting department (VB04) and the dematerialization of the procedures and documents (VB11). The statistics for this model are presented in Table 5. The equation resulted using the data collected is:

$$VB01 = -0.460399 + 0.643334VB02 + 0.130942VB04 + 0.080482VB11 + \varepsilon$$

R² of 21.28% identifies in the model a correlation below the average level. A future modelling is possible, but as the model is not validated at an average level, it is not competitive.

Four other models (trying to explain the types of software used in the accounting department, the use of Excel or similar software or the existence of a unique computers network within the company) were tested, but none of them was validated.

Table 5. Model 2 tested

Dependent Variable: VB01				
Method: Least Squares				
Sample: 1 77				
Included observations: 77				
Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	-0.460399	0.140804	-3.269788	0.0016
VB02	0.643334	0.157935	4.073418	0.0001
VB08	0.130942	0.139180	0.940808	0.3499
VB10	0.080482	0.098702	0.815405	0.4175
R-squared	0.212813	Mean dependent var		0.012987
Adjusted R-squared	0.180463	S.D. dependent var		0.697618
S.E. of regression	0.631542	Akaike info criterion		1.969245
Sum squared resid	29.11570	Schwarz criterion		2.091001
Log likelihood	-71.81594	F-statistic		6.578421
Durbin-Watson stat	1.844007	Prob(F-statistic)		0.000536

The correlation matrix for 2007 was:

Table 6. Correlation matrix (2007)

	VB01	VB02	VB03	VB04	VB05	VB11	VB12	VB13	VB14	VB15
VB01	1.000000	0.068659	-0.035163	-0.180030	0.110045	-0.007652	0.001512	0.059728	0.063521	0.212029
VB02	0.068659	1.000000	-0.120465	-0.024391	0.002114	-0.113831	-0.006878	-0.097621	-0.006878	0.173153
VB03	-0.035163	-0.120465	1.000000	-0.243320	-0.201955	-0.012214	-0.064891	-0.021928	-0.207419	0.074135
VB04	-0.180030	-0.024391	-0.243320	1.000000	-0.043765	-0.039533	0.133793	0.095344	0.133793	-0.106081
VB05	0.110045	0.002114	-0.201955	-0.043765	1.000000	0.057712	0.074490	-0.073544	0.074490	0.142452
VB11	-0.007652	-0.113831	-0.012214	-0.039533	0.057712	1.000000	0.375321	0.329821	0.178876	-0.167928
VB12	0.001512	-0.006878	-0.064891	0.133793	0.074490	0.375321	1.000000	0.328790	0.456439	-0.031609
VB13	0.059728	-0.097621	-0.021928	0.095344	-0.073544	0.329821	0.328790	1.000000	0.328790	0.102293
VB14	0.063521	-0.006878	-0.207419	0.133793	0.074490	0.178876	0.456439	0.328790	1.000000	-0.118008
VB15	0.212029	0.173153	0.074135	-0.106081	0.142452	-0.167928	-0.031609	0.102293	-0.118008	1.000000

Based on the responses received in 2007, we could not validate any model.

6. CONCLUSIONS

Most of our respondents use in their activity complex ERP systems. In both periods, the responses show that, in general, accountants are satisfied with the applications they use. They report on a bigger number of benefits than difficulties generated by the implementation and use of IT. In the same time, many respondents consider that the technologies can have future effects on their department. The efficiency of the systems used results also from the fact that Excel or similar software is used for less than 33% of the respondents' activities.

After the economic crisis, we notice the increased importance granted to IT. The companies

prefer the purchase of an ERPS which is able to assure a complex processing of the information, instead of acquiring smaller software or using in-house application.

The correlation matrix proves that the use of IT impacts on the performance of the company. Even though the model is not performant it represents a necessary start and, in the same time, an original construction, considering the diversity of variables and explanatory phenomenon or the typology of exogenous factors.

The originality of the study resides in the fact that we conduct our research in two moments in time: before and after the economic crisis, which impacted the Romanian economy. We show that the crisis had a positive effect on the use of the IT. Another contribution is that the research was conducted in a transition economy. While most of the research regarding the IT comes from developed countries, the study of the phenomenon in other settings is necessary. Thus, through this research, we respond to this call received from the researchers in the domain.

One of the limits of our research is represented by the small number of answers received. Yet, the number is representative for our country, where the respondents are cautious before participating in a research.

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IFRS IMPLEMENTATION IN ESTONIA: CURRENT SITUATION AND THE PERSPECTIVES OF FUTURE DEVELOPMENTS

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Abstract

Nowadays the International Financial Reporting Standards (IFRS) became the global standards for financial reporting. IFRS have gained world-wide recognition with more than 100 countries require public companies to use IFRS. However, in spite of the growing popularity of IFRS the implementation and usage of IFRS still varies largely across countries and seems not very popular in Estonia. The present research examines the main reasons why large and medium sized companies in Estonia are not willing to voluntarily adopt IFRS. The authors conducted a survey among large and medium Estonian companies. The main findings of the research suggest that costs of transition to IFRS outweigh the benefits, which in most cases are not that significant and recognized by companies. It was also noted that the audit fees are higher for the reports prepared in accordance with IFRS than compared to the ones prepared under local GAAP. Based on the results of the research it may be concluded that currently Estonian companies do not see IFRS as the number one in their priority list and would prefer to report under local GAAP.

Keywords: *benefits, costs, Estonia, IFRS implementation*

1. INTRODUCTION

The International Financial Reporting Standards (hereinafter IFRS) has reached significant importance in contemporary accounting theory as well as the everyday professional practice. The implementation of IFRS is associated with higher transparency, comparability and quality of the accounting information (Byard and Yu, 2011) as well as the economic efficiency arguments (Guerreiro et al., 2012). In most countries the adoption of IFRS is compulsory for all or most domestic publicly accountable entities and financial institutions and voluntary for all other entities. According to the latest information of the American Institute of Certified Public Accountants (AICPA) „approximately 120 nations and reporting jurisdictions permit or require IFRS for domestic listed companies, although approximately 90 countries have fully conformed with IFRS as promulgated by the IASB and include a statement acknowledging such conformity in audit reports“ (AICPA IFRS Resources, 2017). Numerous notices regarding the voluntary adoption of IFRS (Toyota Industries Corporation, Recruit Holdings Co., Ltd., Fujitsu etc) during last decade indicate that more and more large companies switch from local GAAPs to the IFRS.

However, the IFRS are still not very popular in Estonia. Therefore, authors considered it worth attention that a very small amount of the potential users of IFRS – large and medium sized companies have voluntarily adopted these standards. Authors believe that main reasons of non-adoption of IFRS are the complexity and high costs associated with this process. Authors also suggest that such factors as lack of qualified specialists, unclear benefits of transition to IFRS and the main market on which company is operating will also have an impact on the voluntary adoption of IFRS among Estonian companies.

The remainder of the paper is organized as follows: after the linkage of the IFRS topic to current literature, authors provide a practical insight into the voluntary IFRS adoption among Estonian companies identifying the main reasons of non-adoption. Furthermore, authors present the results of the survey conducted among the Estonian companies which have not voluntarily adopted IFRS so far. Results are taken as a basis for concluding remarks.

2. LITERATURE REVIEW

From the very beginning the adoption of IFRS in Europe is considered to be the most significant, „controversial and debate-generating change in financial reporting“ (Armstrong et al., 2010). Even today, in spite of the growing popularity of IFRS over local GAAPs the implementation and usage of IFRS still varies largely across countries. In most countries IFRS still remain a supplement and do not totally substitute the local GAAP (Haslam et al., 2016). Among the main numerous factors affecting the IFRS the researches outlined the corporate culture (Yurekli, 2016), whose studies revealed that there is a direct link between corporate culture and IFRS adoption and that externally orientated companies have already implemented IFRS; country and industry (Stadler and Nobes, 2014), firm size (Ali et al., 2016) and timing (Stent et al., 2015).

The adoption of IFRS is associated with various benefits including the increased usefulness of reporting (Cheung, 2016) in general and disclosures in particular (Daske and Gebhardt, 2006), improved quality of earnings (Houqe, 2016) and the improved accuracy of analysts' forecast (Tan et al., 2011). It should also be noted that much has been mentioned about the important role of IFRS in increasing the comparability, transparency and quality of the accounting information (Byard and Yu, 2011). The findings of Horton et al. (2013) also suggest that the mandatory IFRS adoption has improved the information environment of the company.

However, it should be noted that not all researches unanimously outline numerous benefits; the results of the study of Liu and Sun (2015) suggest lack of significant changes in earnings quality after the IFRS adoption in case of public Canadian companies. In several cases costs happen to outweigh these benefits. The research of Jones and Higgins (2006) revealed that in case of 60 firms from Australia's top 200 corporations many respondents appeared to be not well prepared for transition to IFRS and quite sceptical about the possible benefits (Jones and Higgins, 2006). It is obvious that the preparation of financial statements under the IFRS for the first time is not so easy and is quite time and effort consuming, as standards are quite complicated and need proper understanding and careful reading, which is also confirmed by the studies of Mackenzie et al. (2014). The transition to IFRS may also be associated with increased audit fees as the companies may need to change auditing company, and switch to the global recognized one, which is also evident from the studies of Wieczynska (2016).

However, it is still unclear whether the adoption of IFRS would necessarily result in the improvement of the accounting and reporting, the findings are quite controversial (Ahmed et al., 2013; Lopes et al., 2016). The results of Hung and Subramanyam (2007), suggest that „accounting standards per se do not have a major impact on the value relevance and timeliness of financial statement information“ (Hung and Subramanyam, 2007).

It can also be argued whether the desired outcome of high quality accounting and reporting has been reached (Gebhardt and Novotny-Farkas, 2011) as the impact of adoption of IFRS varies across countries (Devalle et al., 2010) and largely depends on the local accounting standards especially in those, where significant differences of local GAAP in comparison to IFRS may be observed. This statement is especially valid for the European countries, there, for instance, in Netherlands the number of major differences between Dutch GAAP and IFRS is relatively limited (Brouwer & Hoogendoorn, 2017); in the Czech Republic implementation of elements of IFRS into Czech accounting standards is only partial and in spite of the fact that each change of the Accounting Act involves some elements of IFRS there are still significant differences due to the different (continental) model of accounting (Jindrichovska & Kubickova, 2017) and in France, there a strong move toward harmonization with IFRS in 1995–2005 followed by the financial crisis led to the situation that convergence is no longer a topical issue, especially for individual accounts (Le Manh, 2017).

In the volume 14, 2017 of the journal „Accounting in Europe“ dedicated to the role and current status of IFRS in the completion of European national accounting rules André (2017) has suggested a very concrete and precise classification of convergence between IFRS and National GAAP for medium and large non-listed non-financial companies in the following sub-groups: (1) full IFRS (Cyprus); (2) those that refer and are closely aligned to IFRS (Croatia, Denmark etc.) or to IFRS for SMEs (Estonia,

Ireland etc.), (3) those while influenced by IFRS, retain complete independence (Romania, Spain etc.) and (4) those that show limited influence mostly when accounts are for other purposes such as taxation, dividend distribution or creditor protection (Austria, Belgium, etc.) (André, 2017). These groups provide a wide overview of the current situation of IFRS adoption in Europe. It should also be noted that while Malta, Portugal, Slovenia and Estonia demonstrated the positive view of IFRS (Micallef, 2017; Isidro & Pais, 2017; Novak & Valentincic, 2017; Alver & Alver, 2017) in Poland „IFRS are considered by the government as not applicable to the broad spectrum of Polish companies. Nevertheless, IFRS affect national accounting regulation and practice through more subtle channels“ (Klimczak & Krasodomska, 2017). In general, it can be concluded that no unanimous attitude to IFRS implementation and opinion on IFRS adoption exists among European countries.

3. OVERVIEW ON THE ADOPTION OF IFRS IN ESTONIA AND WORLDWIDE

Nowadays the International Financial Reporting Standards (IFRS) have become the global standards for financial reporting. More than 100 countries require public companies to use IFRS. Therefore, these standards are widely used in most countries across the world as illustrated by data of the table 1.

Table 1. IFRS implementation all over the world

Region	Number of jurisdictions				
	Jurisdiction in the regions	Jurisdictions that require IFRS for all or most domestic publicly accountable entities	Jurisdictions that require IFRS as a per cent of the total jurisdictions in the region	Jurisdictions that permit or require IFRS for at least some (but not all or most) domestic publicly accountable entities	Jurisdictions that neither require nor permit IFRS for any domestic publicly accountable entities
Europe	43	42	98%	1	0
Africa	19	15	79%	1	3
Middle East	9	8	89%	1	0
Asia and Oceania	32	24	75%	3	5
Americas	37	27	73%	8	2
Totals	140	116	83%	14	10
As per cent of 140	100%	83%	-	10%	7%

Source: Financial Reporting Standards for the World Economy published by the International Financial Reporting Standards Foundation

The International Financial Reporting Standards Foundation brings out the following main observations regarding IFRS (Financial Reporting, 2015):

- Nearly all jurisdictions have publicly stated a commitment in support of global accounting standards.
- The relevant authority in nearly all jurisdictions has publicly stated that IFRS should be the global accounting standards.
- IFRS is required for all or most domestic publicly accountable entities (listed companies and financial institutions) in 116 jurisdictions of the 140 jurisdictions profiled
- Around 60 per cent of the 116 jurisdictions that require IFRS for domestic listed companies also require IFRS for unlisted financial institutions and/or large unlisted companies
- Around 90 per cent of the 116 jurisdictions that require IFRS for domestic listed companies also require or permit IFRS for many unlisted companies.

- Most of the remaining 24 jurisdictions that do not yet require IFRS for all or most domestic listed companies already permit IFRS for at least some domestic listed companies. (Financial Reporting Standards for the World Economy).

Nowadays, in Estonia IFRS is required in both consolidated and separate financial statements of financial institutions as a result of the Regulation (EC) No 1606/2002, which was passed on 19.07.2002 by the of the European Parliament and the European Council of Ministers and required the adoption of IFRS by all EU listed companies since 2005 (Regulation (EC)). IFRS is also permitted in both consolidated and separate statements of other companies (Deloitte Global Services Limited, 2017). Companies, which do not use IFRS for accounting and reporting should use the Estonian GAAP (until 2012 Estonian GAAP used to be a simplified version of IFRS; effective January 1, 2013, the new Estonian GAAP is mainly based on IFRS for SMEs with minor exceptions (Estonian Accounting Standards Board, 2016). The detailed overview of the Implementation of IFRS and IFRS for SMEs: the case of Estonia is given by Alver & Alver (2009) and Alver et al. (2014), where authors have divided the integration of Estonian accounting system to the framework of IFRS into two stages: implementation of IFRS, and implementation of the IFRS for SMEs. According to Alver & Alver (2017) in general it can be concluded that „Estonia’s position on IFRSs is very positive and despite switching to the IFRS for SMEs as base for the local guidelines, they are still used as a very important reference point and source of interpretation for national accounting rules based on the EU Accounting Directive“.

According to the data of the Estonian Centre of Registers and Information Systems during the years 2012–2016 the number of enterprises preparing their financial reports under IFRS in Estonia fluctuated between 260 and 304. This amount is quite small in comparison to the growing number of economically active enterprises in Estonia as confirmed by the data of Statistics Estonia, presented in table 2.

Table 2. Economically active enterprises by number of employees, years

Number of Employees	2012	2013	2014	2015	2016
Total	108 884	112 760	113 765	117 398	120 450
250 and more	173	182	191	195	196
50–249	1 115	1 126	1 162	1 200	1 184
10–49	5 705	5 793	5 874	6 281	6 293
Less than 10	101 891	105 659	106 538	109 722	112 777

Source: Statistics Estonia

The data of the table 2 reveals that micro enterprises make up the majority of business enterprises in Estonia (93% and 94% in 2015 and 2016 years respectively), while large and medium-sized companies make up only 1% of the total number. However, authors considered it worth attention that a very small amount of the potential users of IFRS – large and medium sized companies have voluntarily adopted these standards.

4. RESEARCH DESIGN

The main aim of the present research is to investigate why IFRS is not widely voluntarily adopted by large and medium size companies in Estonia and reveal the importance of various factors on their decisions. The authors used data obtained from the survey conducted among companies, selected from the Estonian commercial register as of 07.03.2017 according to the following criteria: 1) more than 250 employees; 2) annual revenue more than 50 million EUR; 3) statement of financial position total more than 43 million. In authors opinion these large and medium sized companies will be most likely to adopt IFRS voluntarily. Author has excluded the following companies from the sample: companies quoted at stock exchange, banks and financial institutions, hospitals, funds and partnerships. In total, the questionnaire was sent to 379 companies. The questionnaires were also

distributed via professional groups on Facebook and Estonian Accounting and Taxation Portal (Raamatupidamis-jamaksuinfoportaal) during the period of 28.02.2017–24.04.2017.

The survey consisted of 16 questions related to the usage of IFRS. The language of the questionnaire was Estonian. In order to present the questions and make it possible to collect data, an online survey engine Google Forms was used. The survey included one open question, where respondents were asked to state three reasons why the company does not use IFRS, and one multiple choice question, where respondents were asked to select rank for each argument from 1 (not important at all) to 5 (very important). While conducting the survey the authors concentrated on companies not currently using IFRS in order to identify the reasons and in total 51 responses from such companies were collected in the process. Table 3 shows the data about the profile of the respondents.

Table 3. Data of the surveyed organizations

Status	Sample
Area of operation:	
International and local	38
Local	13
Total	51
Field of operation:	
Provision of services	16
Mixed sector	16
Manufacture	10
Trade	9
Total	51
Size of company:	
Large	26
Medium	25
Total	51
Years of operation:	
0 to 10years	9
>10 years	42
Total	51

Source: authors

This information was compiled and analysed based on the size of the company, operations market and the field of activities.

5. RESULTS

The main results of the survey are presented in table 4, which reveals the main reasons, which influence the choice for adoption of IFRS by large and medium Estonian private companies.

Table 4. Total sample mean scores by statement (1 = not important at all; 5 = very important)

Reason	Weighted-average
Cost of IFRS implementation outweigh the benefits	4.29
Changes related to the adoption of IFRS are unfavourable for the company	4.24
Complexity of IFRS	4.08
Similarity of IFRS with Estonian GAAP	3.94
Unclear benefits of transition to IFRS	3.86
Lack of qualified specialists, lack of resources for their outsourcing	3.86
Presence of parent company, quoted at stock exchange	3.63
Plans to enter the stock exchange	3.25
Size of the company	3.12
Prejudice of managers in regard to transition to IFRS	3.04
Geographical spread of operations of the company	2.98
Presence of foreign shareholders	2.92
Presence of foreign parent company	2.80
Presence of foreign subsidiary company	2.75
Legal entity form	2.71
Possibility of the principal-agent conflict	2.67
Field of activities	2.24

Source: authors

From the data of the table 4 it becomes evident that the main reasons influencing the decision of companies not to adopt IFRS are the fact that costs outweigh the benefits. In authors opinion such transition is regarded by companies as not only time and effort consuming (complexity of IFRS, score 4.08), but also the one resulting with substantial additional costs related to the training of accountants and also higher audit fees. The companies also do not associate this transition with any valuable benefits as they are quite satisfied with the local GAAP and are reluctant to changes especially if they are not forced to implement them.

The authors also considered it vital to analyse the responses in regard to the size of the company; results are presented in the table 5.

Table 5. Comparison of scores by the size of the company (1 = not important at all; 5 = very important)

Reason	Large	Medium
Main users of information are located in Estonia	3.69	4.40
Complexity of IFRS	4.00	4.16
Similarity of IFRS with Estonian GAAP	4.00	3.88
Unclear benefits of transition to IFRS	4.31	3.76
Costs associated with the adoption of IFRS outweigh the benefits	4.50	3.56
Lack of qualified specialists, lack of resources for their outsourcing	4.12	3.56
Prejudice of managers in regard to transition to IFRS	3.31	2.76
Changes related to the adoption of IFRS are unfavourable for the company	4.23	4.24
Size of the company	3.27	2.96
Legal entity form	2.77	2.64
Possibility of the principal-agent conflict	2.73	2.60
Geographical spread of operations of the company	3.00	2.96
Plans to enter the stock exchange	3.31	3.20
Field of activities	2.12	2.36
Presence of foreign parent company	2.96	2.64
Presence of parent company, quoted at stock exchange	3.69	3.56
Presence of foreign subsidiary company	3.04	2.44
Presence of foreign shareholders	3.00	3.92

Source: authors

Table 5 reveals the differences in responses of large and medium companies. Both type of respondents outlined that the one of most vital reasons of non-adoption of IFRS is that the changes related to this process are not regarded as beneficial and favourable for the company. They also stated that the presence of parent company, quoted at stock exchange would influence their decision. Among the least important factors appeared to be selected: field of activities, legal entity forma and the possibility of the principal-agent conflict.

The analysis of the responses in regard to the market, where the company mostly operates is presented in the table 6.

*Table 6. Comparison of scores by the market, where company operates
(1 = not important at all; 5 = very important)*

Reason	Domestic	Both domestic and international
Main users of information are located in Estonia	4.62	3.84
Complexity of IFRS	4.00	4.11
Similarity of IFRS with Estonian GAAP	3.69	4.03
Unclear benefits of transition to IFRS	3.46	4.00
Costs associated with the adoption of IFRS outweigh the benefits	3.46	4.34
Lack of qualified specialists, lack of resources for their outsourcing	4.15	4.00
Prejudice of managers in regard to transition to IFRS	2.69	3.16
Changes related to the transition to IFRS are unfavourable for the company Changes related to the adoption of IFRS are unfavourable for the company	4.54	4.13
Size of the company	2.62	3.29
Legal entity form	2.62	2.74
Possibility of the principal-agent conflict	2.31	2.79
Geographical spread of operations of the company	3.15	2.92
Plans to enter the stock exchange	3.31	3.24
Field of activities	2.46	2.16
Presence of foreign parent company	2.62	2.87
Presence of parent company, quoted at stock exchange	3.54	3.66
Presence of foreign subsidiary company	2.46	2.84
Presence of foreign shareholders	2.92	2.92

Source: authors

The data presented in the table 6 confirms that domestic companies seem less interested in the adoption of IFRS as their main users of information are located in Estonia, IFRS seems quite complicated for them and they do not see any huge differences in regard to local GAAP (scores 4.62; 4.00 and 3.69 respectively). Both types of companies presented in the table 6 have also outlined the importance of the unclear reasons of IFRS adoption and the fact that the costs outweigh the benefits. The authors also find it useful to find out whether there would be any differences in responses in regard to the main field of activity of the company (see table 7).

Table 7. Comparison of scores by the field of activities (1 = not important at all; 5 = very important)

Reason	Trade	Services	Manufacture	Mixed
Main users of information are located in Estonia	4.11	4.56	3.00	4.13
Complexity of IFRS	4.11	4.06	4.30	3.94
Similarity of IFRS with Estonian GAAP	4.33	3.81	4.00	3.81
Unclear benefits of transition to IFRS	4.11	3.75	3.60	4.00
Cost of IFRS implementation outweigh the benefits	4.56	4.19	4.00	4.44
Lack of qualified specialists, lack of resources for their outsourcing	3.89	3.81	3.70	4.00
Prejudice of managers in regard to transition to IFRS	2.89	3.06	2.80	3.25
Changes related to the adoption of IFRS are unfavourable for the company	4.56	4.19	3.40	4.63
Size of the company	3.45	3.00	2.60	3.38
Legal entity form	2.33	3.19	2.30	2.69
Possibility of the principal-agent conflict	2.78	2.88	1.80	2.94
Geographical spread of operations of the company	3.56	3.19	2.30	2.88
Plans to enter the stock exchange	3.45	3.25	2.70	3.50
Field of activities	1.78	2.88	2.10	1.94
Presence of foreign parent company	3.11	3.50	2.80	2.44
Presence of parent company, quoted at stock exchange	3.78	3.56	3.20	3.88
Presence of foreign subsidiary company	3.11	2.88	2.30	2.69
Presence of foreign shareholders	3.22	2.88	2.40	3.13

Source: authors

From the results of the survey presented in the table 7 it may be concluded that all type of companies considered the fact that cost of IFRS implementation outweigh the benefits as the most important reason influencing the adoption of IFRS, complexity of IFRS and unclear benefits were also ranked as important factors.

6. CONCLUSIONS AND DISCUSSION

The results of research indicate that Estonian companies do not associate the adoption of IFRS with significant and valuable benefits. They also consider these standards as quite complex ones and believe that in case of transition to IFRS the costs would outweigh the benefits. The results of the survey are in line with findings of Jones and Higgins (2006), confirming the scepticism of companies in regard to possible benefits of IFRS adoption. In authors opinion this may be explained by the fact that companies consider implementation of IFRS as complicated, money, time and effort consuming process, which in turn would require major changes in the companies' accounting and reporting system. Most companies participated in the survey have more than 10 years of operating experience and seem to be reluctant to changes following the principle "leave well enough alone". It should also be noted that the other obstacle outlined by the respondents appeared the need to switch to another auditing company, as also confirmed by the studies of Wieczynska (2016), which again would result in higher costs for the company and exit from the comfort zone.

In general, it can be concluded that in spite of the growing popularity of IFRS across the world it is still not widely adopted in Estonia. However, the authors strongly believe that globalisation and worldwide trend of increased transparency, quality of financial reporting and convergence will generate rapid changes in this field.

The authors are aware that the present study has several limitations: the sample of the selected companies should be increased and the survey should be also conducted among the companies having voluntarily adopted IFRS to reveal the main benefits and obstacles as seen by the IFRS users. For the

future research we expect to broaden the scope and conduct a survey in several EU state members to examine the differences related to the adoption of IFRS across different countries.

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THE ACCOUNTING PROFESSION IN DIFFERENT BACKGROUNDS: COMPARISON OF THE CZECH REPUBLIC AND CHINA

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Abstract

Examination of the role of accountants and accounting profession in different national environments is the goal of this study. In particular we investigate different perception of the role in the Czech Republic and China. We claim that the historical development and the nature of continental accounting system influenced by the specific features of accounting and accounting profession in the Czech Republic, where the main role of company accountants is assumed to be the tax calculation and optimization. On the other hand economic system, its rapid development, cultural and historical conditions of the Peoples Republic of China (PRC) suggest different recourse. Here we claim that transformation of Chinese economic system to market principles and implementation of IFRS could cause changes in recognized accounting principles and country's accounting profession and this could impact the economic system as a whole. Many similar features can be seen in both national economies. In our study we want to verify whether there are any differences in perception of accounting and accounting profession in Chinese companies in comparison to those in the Czech Republic. To assemble the opinions of respondents we use the questionnaire survey method. To evaluate the results of the investigation we use the statistical tests of correlation and F-test to test for the differences between the two sets of responses. Our results confirmed the validity of our hypothesis of existence of different opinions depending on nationality of respondents. We found that there are differences in both opinions on the role of accountants in business and in attitudes to selected business problems. Although the findings have several limitations due to sample selection, we can sum up that there exist significant differences in perception of the role of accounting and accountants between the two countries depending on historical traditions and different national environment in the two economies.

Key words: *accounting profession, financial reporting, national environment, cultural differences*

1. INTRODUCCION

According to AAA, accounting is "... the process of identifying, measuring, and communicating economic information to permit informed judgments and decisions by users of the information."¹ Accounting profession represents qualified professionals, who are dealing with accounting at various levels.

The importance of accounting information and the position of the accountant profession is determined by the economic system. Accounting has different position in centrally planned economy and in the market based system. In switching from a centrally managed to a market economy, accounting has to be transformed as an element of the economic system, e.g. Schroll, 1994; World Bank, 2003.

Economic systems in Czech Republic and Chinese are undergoing similar process in terms of transformation of a system centrally controlled to a system operating on market principles.

Accounting concept and the accounting profession should therefore display certain similar or identical features. However, an integral element of every economic system is its particular historical experience and inherited or gained cultural specifics that are projected in every specific activity of a given country or region. These particularities can either support or block the process of transformation.

¹ <https://www.business-case-analysis.com/accountant.html#accountant-roles> accessed on 24.9.2017.

Perception on accounting and accounting profession has been recently researched in many cultures most often, however, in developed societies of Western Europe and North America. Recent studies dealing with perception of accounting and accounting profession were written e.g. in the US by Allen, 2004, in Ireland by Byrne & Willis, 2005, and by Buchan, 2005. Majority of these studies are involved with professional requirements and with ethical issues. Carnegie & Napier (2010) have written critical study assessing the position of traditional accountants and business professional and its changes after Enron scandal.

Our study is not so much involved in critique of accounting profession but it deals more with the perception of the accounting and accountant in a transition CEE country and in China.

The primary stimulus for carrying out this research was the intention to map the situation around accounting and accounting profession in the two countries. Because of different cultural and historical background of the countries we expect that, through our qualitative questionnaire based research, we will find certain similar features but also differences in understanding the position of accounting and perception of accounting profession in particular and in approach to solving partial accounting situations.

The text of the paper is structured as follows: the next section explains the degree and special features of development of the economic system development together with the main of the macroeconomic characteristics of economic background as a foundation accounting profession and accounting way of thinking. The second part deals with the characteristics of accountants and accounting profession and its position in Chinese economic system. The third section presents the used methods in line with goal of our research. The fourth section presents results of our research and provides interpretation. The discussion and limitations of our findings are explained in the fifth part. Conclusion and suggestions for further research are summarised in the last section.

2. BACKGROUND AND MACROECONOMIC CONDITIONS

2.1 China

China has already, for several decades, belonged to the group of fast growing countries and it is a member of so called BRICK. Much has been written about the rapidly growing Chinese economy since 1990s, ranging from sharp criticism of its ideology on one side to admiration of economic results on the other one. Nobel Prize winner Paul Krugman criticised China repeatedly since 1990s (Krugman, 1994, 2010 and 2011). Positive perception of China comes from the recognition of Chinese ability to generate money which is supported by material economic results. From macroeconomic point of view, Chinese economy is now in a healthy state.

Continuing strong external demand is pushing exports of merchandize as well as industrial production in virtually all sectors. Strong domestic demand is projecting into improved dynamics in the manufacturing sector. Current macroeconomic situation can be summed up in key macroeconomic indicators as follows:

Table 1. Macroeconomic Characteristics of Recent Development

	2011	2012	2013	2014	2015
Economic growth of GDP intra year	9.5	7.9	7.8	7.3	6.9
GDP (USD billion)	7.592	8.575	9.694	10.480	10.925
Population in million	1.347	1.354	1.361	1.368	1.375
GDP per capita	5.635	6.333	7.124	7.662	7.948
Export (USD bill)	1.898	2.049	2.209	2.342	2.272
Import (USD bill)	1.744	1.819	1.952	1.959	1.681
Balance (export/import)	1.088	1.126	1.132	1.196	1.352
Inflation rate (CPI)	5.4	2.6	2.6	2.0	1.4
Consumption (Annual variation)	11.0	9.1	7.3	7.7	7.5
Public debt (% of GDP)	14.7	14.4	14.6	14.9	15.5

Source: China statistical yearbook and own elaboration

China is now the second biggest economy and it is doing quite well since the financial crisis as China exited the financial crisis of 2008 in good condition. The country GDP grew above 9%, having low inflation and a sound fiscal position with public debt of less than 15 per cent of GDP.

Although Chinese growth slowed down to from 9.5 in 2011 to 6.9 per cent in 2015, trade balance remains positive as export exceeds country import. Inflation in the country is low in general and consumption is growing modestly. According to China economic outlook published by Focus economic, “President Xi Jinping stressed that the financial sector must serve the real economy and that the government must contain financial risks and implement bolder economic reforms.”²

Moreover, the volume of its international trade is growing as the country does not rely on import of technically advanced products and it is cultivating own R&D. This effort started already in 1990s (Qian, & Stiglitz, 1996). As for economy at large former socialist model is being gradually transformed to new market economy (Stiglitz, 2008).

China is now accenting its internal growth and development, which is based on development of its own abilities starting with building industrial centres and educating and cultivating own workforce (Wang, & Mao, 2017). Many students study abroad in developed Western countries as well as in the countries of the former Eastern Block, which assures certain balance (Wang, & Guthrie, 2004). Motivation of Chinese students studying abroad has always been high. Large trading surplus and balanced budget provides resources and opportunities for further advancement. Moreover it has been historically known, that Chinese people being brought up in the old eastern Confucian tradition are hard working, modest and have respect for hierarchy i.e. recognize their own place in society (Yihong, Yuan, Ying, & Yan, 2007).

Supporting element is also the education. Chinese education has been largely internationalized since late 1990s. Development of higher education in China is summarised by Huang (2003). After 1952, the Soviet communist model was introduced into the People’s Republic of China and it dominated China’s higher education development almost until the end of the 1970s. Subsequently two waves of changing approach to internationalization of Chinese education have taken place. The first major change came in 1978, when the state ministry of education decided to broaden the education internationally. The pragmatic decision was to send students and scholars abroad. The students were expected to focus especially on the fields of science, engineering, agriculture, and medicine. The intent was to gain more educated manpower at a higher level for the national economy. Chinese system was also becoming more decentralized after 1984, when the centre delegated more authorities and responsibilities for dispatching scholars and students abroad to other agencies in the central government, provincial governments, and institutions. Subsequent wave of educating effort started in 1993 with increased outflow of Chinese society members. There has arisen a problem of attracting Chinese scholars and students back home to China. The issue of increasing outflow of qualified personnel abroad remains until now. As in most developing countries it seems that the “brain drain”, as well as the ability to benefit from transnational education. However, the situation is changing due to rising power of Chinese economy within the political and economic scheme of the world.

The OECD report of 2016 entitled *Education in China a snapshot* provides a broad overview and great details of how China’s education system operates. China has the largest education system in the world. It holds the belief that education is the basis of national development and modernisation (OECD 2016, 12). There are four parts of China already involved in the Programme for International Student Assessment, or PISA. The Chinese government assigns a high value to education. The education scheme has been reformed several times. The government uses laws and regulations to protect access to education, and to guarantee its high-quality. The Law on Compulsory Education was enacted, in 1986 representing compulsory nine years of education starting at the age of six. The Ministry of Education formulates the Five-Year Guideline for National Education Development. Subsequently students continue with secondary school or vocational

² <http://www.focus-economics.com/countries/china>

China statistical yearbook 2016, accessed by 27.7.2017, <http://www.stats.gov.cn/tjsj/ndsj/2016/indexeh.htm>

training. University education lasts for four to ten years. (Four years are typical for bachelor degree, more years for master and PhD degrees). As it has been already underlined in previous paragraphs many Chinese students frequently study abroad to enhance the knowledge and skills for their national economy.

As it has been stressed by the Chinese government, the Chinese do not like to waste their resources needlessly and as people they are very modest and hard working. However, in Chinese economy all activities are primarily subject to lowering costs and increasing volume of production. It is known that Chinese do not care very much for natural environment and thus big problems are waiting especially in agglomerations and industrial centres. Obviously further economic and social development of China can become an issue of internal politics moderated by international relations to major political and economic superpowers like USA and Russia and trading blocks, like NAFTA and EU and ASEAN.

Full acceptance of China to the world economic community is conditioned by reaching status of market economy. This is hindered by four unfulfilled criteria³: lack of transparency, removal of non-tariff measures preventing entry of international companies on Chinese market tariffs, significant government interventions and lack of respect of private property. As a negative factor is perceived also the system of five-year plans that does not create room for full influence of market forces and functioning of free market mechanisms (Kloudova, 2006).⁴

To fulfil the second criterion of transition from planned economy to free market a conversion to the new accounting standards was realised. These new Chinese Accounting Standards (ChAS) are adopting the principles contained in International Financial Reporting Standards (IFRS) and are a part of the Chinese standards were adopted on January 1st 2007. Although they do not comply fully with the IFRS, they are considered to be substantially converged. The European Commission permitted Chinese issuers to use the ChAS in the European Community for a transitional period of up to three years. The new ChAS were adopted for all listed companies and they were supposed to be gradually assumed by all other companies and enterprises. It is supposed that the ChAS will be updated in line with development of IFRS in the next years (ICAS, 2010).

Implementation of IFRS in the Chinese accounting system is considered to be the tool, which has transformed the "rules-based" procedures to a more "principle-based" system. The previous standards have been essentially highly prescriptive. In addition they reflected different industry specifics, which caused great differences between individual industrial versions of standards in use. These differences were the main cause of difficulties in preparation of meaningful consolidated accounts (ICAS, 2010).

The implementation of principle-based standards places additional demands in terms of further education on accountants as well as on the audit profession. Changes in Chinese accounting system and concurrent changes in the whole economic system were reflected in thinking of professional accountants and corporate financial managers.

2.2 Czech Republic

The Czech Republic is considered to be a transitional country within the group of CEE countries (countries of Central and Eastern Europe). The CR is a member of the OECD since December 21, 1995. The socio-economic and political background is characterized by changing from a centrally-

³ The following criteria of admittance are formulated in Council Regulation (EC) No 905/98: (1) companies decide on the price, costs and inputs, including raw materials, technology and labour costs, production, sales and investments based on market signals reflecting supply and demand Without major State interference in this matter; the cost of the most important inputs must be based on market value; (2) the Company has clear and unambiguous accounting records audited by independent auditors in line with International Accounting Standards and used in all areas; (3) the cost of production and the financial situation of companies are not subject to significant distortions caused by the former non-market economy system, in particular as regards depreciation of assets, other depreciation, exchange and offsetting; (4) companies are subject to bankruptcy and property laws that guarantee legal certainty and stability for the functioning of companies; (5) conversion of exchange rates shall be made at market rates.

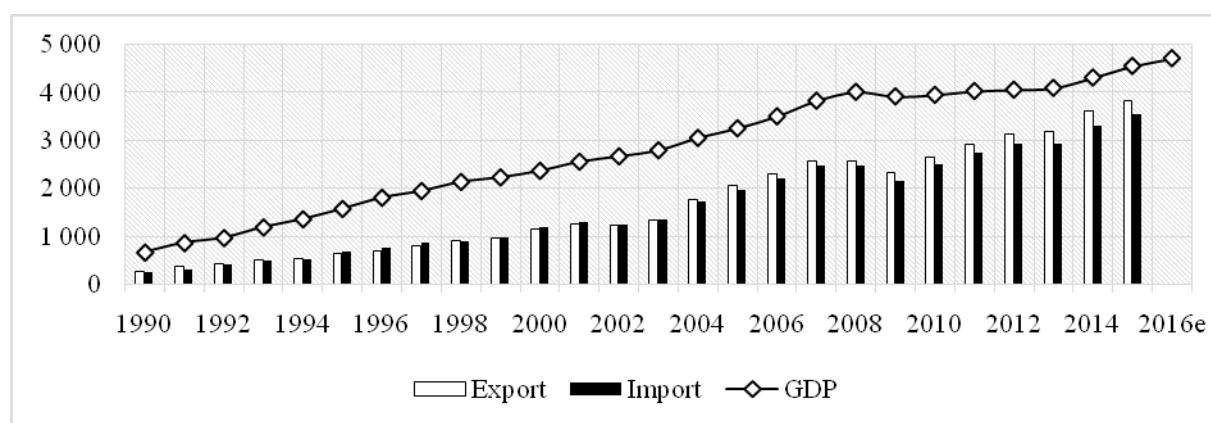
⁴ https://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm8_e.htm

planned to a market economy. One can expect influences of previous arrangements to survive for some time. IFRS adoption has been influenced to a great extent by change of ownership structure, with 58 per cent of companies in foreign hands (Ernest, 2014; Frantál, et al, 2013). This has been generated by previous mass privatization and the ongoing influence of FDIs, which has influenced the scope of implementation or adoption of IFRS in the Czech Republic.

The Czech Republic is a member of the EU, which still demonstrates much diversity (MacGregor Pelikánová, 2017) and has not yet moved for the full harmonization regarding accounting. Hence in the Czech Republic, both the EU law and Czech national law (MacGregor Pelikánová, 2014) apply and consequently, the system of IFRS is implemented as a system of reporting for the companies listed on EU capital markets while the other companies have to comply with the Czech accounting standards (CAS). The CAS are national, rules-based standards with some IFRS elements. The history of the CAS is similar to Chinese ChAS in the field of industrial variation of standards, which in its weaker form has persisted to the present.

Economic development of the Czech Republic should be assessed in the context of developments in other countries due to the economic crisis that began in 2008 and affected most countries, especially developed countries. It is considered the deepest crisis in the post-war period. As for the Czech Republic, after a deep recession in 2009 there came only a moderate recovery in 2010, and in 2011 growth momentum was already lost – as in most EU countries.

Figure 1. Macroeconomic trends



Source: <https://vdb.czso.cz/>

Czech international trade is diversified, but the main export sectors remain machinery and transportation industries. The Ministry of Trade and Industry is supporting exporters by removing barriers to trade, and simplification of the access to information and by government missions strives to increase the volume of trade and increase its diversity

Another measure of quality of macroeconomic environment is frequently characteristic of countries attractiveness for international investors - the Foreign Direct investment. Nevertheless the volume of FDIs reacts not only to economic stability perceived by international companies and conditions for entrepreneurs. Important feature is also the quality of business environment characterized by Business environment ranking the Czech Republic is on 28 place⁵.

FDIs have been important for the economy in late 1990s. Nowadays their importance reverses as foreign companies repatriate their profits that have been earned in this territory and less money remains in the Czech Republic.⁶

After initial reform of accounting regulations, which commenced at the beginning of the 1990s, Czech regulations were first transformed from centrally planned rules to market-based principles. Subsequently, IFRS was introduced to Czech accounting as a voluntary style of reporting in 2003 and 2005. At the same time there remains an obligation to calculate the tax base

⁵ http://www.iberglobal.com/files/business_climate_eiu.pdf

⁶ <http://www.statistikaamy.cz/2015/12/dve-desetileti-primych-investoru-v-cesku/>

according to Czech national GAAP for tax purposes. This obligation persists to date. Therefore, as the Czech companies do not clearly see any clear benefits of IFRS introduction, they are still hesitant to invest in this new style of reporting.

In general, the number of companies reporting according to IFRS is not much, even though their percentage is increasing. There are three principal reasons why using IFRS is less frequent:

- (1) The capital market where IFRS reporting would be compulsory is not very active,
- (2) Industrial relations with foreign entities do not necessarily require more frequent use of IFRS, and
- (3) Perceptions of extra costs associated with implementation of IFRS were verified by recent research survey on a representative sample of 258 Czech companies. The reason for extra perceived costs is valid particularly for SMEs but not for subsidiaries of foreign parent companies, where these costs were already covered by the needs of consolidation. In these cases the lack of interest in IFRS reporting was caused by lack of perceived benefits (Kubíčková, & Jindřichovská, 2016; Korbelova, 2017 Forthcoming).

3. ACCOUNTANTS AND ACCOUNTING PROFESSION IN CONTEXT OF CHINA AND THE CZECH REPUBLIC

Early study on accounting profession in China has been written by Ping in 1999. His paper traces changes in the organisation and regulation of accountancy practitioners in China during the twentieth century, with particular focus on the post-1978 period. It highlights the changing balance over time, between state, market and community as principles for organising practitioners. In spite of the significant movement towards a market economy, the country still remains in the midst of a period of transformation both in Chinese society as a whole and accountancy in particular. At present, the governmental bodies preserve big influence over Chinese accountancy through its control of Chinese accountants.

Tang (2000) summarized the gradual change of accounting practices and impact on accounting profession. The accounting system was inherited from the former Soviet Union, which was principally serving the planning purposes of centrally controlled economy. Driving force of changes was Chinese presence in the international trade. Since 1980s the accounting regulation was progressively changing to serve the growing market economy. The changes included its institutional background as well as the accounting profession. The main users of accounting system were identified as the government; investors, creditors, other relevant parties outside the enterprises and company management. As to accounting profession the author states that many accountants in China did not have a thorough understanding of theoretical reasoning behind the conceptual frameworks and many accountants in China did not understand how to change the existing accounting practices to achieve conformity with the new basic accounting standard inspired by Western tradition. Typical feature of Chinese accounting system is so called “responsibility feature” typical characteristic that was dominant in China for many years. This was although not serving the new market economy, where the real value needs to be considered as well.

The new basic accounting standard went public in 1992. At that time some government officials found it strange and criticized the new system as “exotic”. Nevertheless, it was the Chinese Accounting Society, China's largest academic body that first initiated the accounting standards program and raised the issue of internationalization. However, the Chinese accounting association also needs some innovation. It was revealed that 52 percent of CPAs are 60 or older and only 18 percent of CPAs hold university degrees (Tang 2000, p. 99).

Accounting practice, research, and education in China are in a period of rapid change. The general trend goes from a planned-economy oriented, self-contained tradition toward an outward, open attitude. Internationalization is recognized as an appropriate route through which the level of accounting must be upgraded. Some important measures have been taken to improve the competency of accountants. The unified CPA examination is administered each year, with hundreds

of thousands of candidates sitting the examination (Tang, 2000). Although latest experience shows that improvement has been great and fast, there is still long way to go and the major role will be played by academics.

Recent changes in Chinese accounting profession were analysed by Yee, 2009 and 2012. The author states that the dynamic nature of the state-accounting profession relationship has been mostly explored within the context of western democracies and in context of capitalist economy. This paper contributes by examining the influence of the state power running over the Chinese public accounting profession during the 1990s and takes into account the specific cultural and political environment in China and provides further insights into the dynamic of the relation between state and accounting profession in that era.

To bring in the basic background to build up the background for our comparison, we provide a brief account of position of accountants and accounting profession in the Czech Republic.

Historically the Czech Republic was formally a part of Austro-Hungarian Empire with long its manufacturing tradition where accounting served the needs of industrial economy. The profession is growing from central European tradition and its features were recently characterized in Seal, Sucher, & Zelenka, 1995 and 1996; Sucher et al, 2005; Hellström, 2006; McGee, & McGee, 2008, Albu et al, 2013, Strouhal, & Bonaci 2009, and in Jindrichovska, & Kubickova, 2015.

Accounting profession has traditionally weak role in the Czech Republic. This fact is a consequence of the development of accounting regulatory system. The only regulatory body of accounting in the Czech Republic is the Ministry of Finance. Accounting is regulated by the Act prepared by the Ministry of Finance and approved by the Parliament. The Ministry of Finance issued also detailed guidance for accounting in the form of degree and standards. Although they are not a part of the Act, it became obligatory as it was strictly required by tax authorities. The second regulatory instrument, standards, are issued and approved by the Ministry of Finance without respecting due process. Rigidity of the accounting regulatory system, the lack of the substantial body of private shareholders means that the need for auditors and certified accountants is much smaller than it is in UK or USA (Žárová, Prochazka, Roe, 2014)

“Accounting profession has no tradition in the Czech Republic in contrary with the tradition of tax experts. Only in late nineties of the last century the Chamber of Auditors was established in the Czech Republic. This professional body set exams, consider ethical matters, belongs to the international accounting bodies and so on. The existing accountancy body has taken over a regulatory role for audit, under the supervision of the government.” (Žárová, Prochazka, Roe, 2014, p. 42).

“The implementation of the IFRS into the Czech legislation has brought new quality to financial reporting. Due to their usefulness in comparison with the CAS, the IFRS infiltrate into management accounting systems. In fact, the IFRS carry out (satisfy, meet) the function of internal management accounting, with some modification allowing better internal performance evaluation, in many companies.” (Žárová, Prochazka, Roe, 2014, p. 59)

One can find common features with centralized nature of Chinese environment and the conditions of development of the Czech accounting profession in modern age. Since 1950s the Czech accounting theory and practice was regulated mostly by the state with dominant institutional influence of Ministry of Finance as well.

4. RESEARCH METHODOLOGY

The investigation was based on the assumption used in prior literature that the rule-based accounting systems is perceived as difficult and time-consuming and it has to be converted to principle-based system to overcome the inertia of accounting way of thinking and accounting practice. We suggest that ten years since the transition to principle-based accounting standards is a relatively long period so that accounting attitudes could have been significantly transformed at

least in some features. It can also be supposed that such change represents some of the first expressions of transition from planned system to market economy.

To achieve the aim and perform the comparison, we have used the questionnaire method enquiring two study groups. Both groups were formed by students of the first semester of the academic year 2016/2017 from the faculty of economic sciences at University of Finance and Administration in Prague Czech Republic. The first group consisted of 32 students from the Peoples Republic of China and the second group consisted of 32 students mainly from the Czech Republic (but also from Russia and other countries of the former Soviet Union). Students in both groups were high school graduates, coming from bigger cities and middle class families, whose parents mostly work in the administrative functions. It was therefore plausible to assume that the respondents could have certain knowledge of economic issues and thus be able to form their own opinion in this matter.⁷

The used research method was the questionnaire. The questions in the survey were formulated as employing hypotheses based upon prior literature enlisted further.

1. Features corresponding to the role of accounting in a centrally controlled economy still dominate in accounting opinion of Chinese students as members of Chinese society.
2. The perception of the role of managers and owners in company management system reflects elements of centrally managed system moderated by features of its original cultural environment.

The questionnaire containing four parts was presented to both groups of respondents. The first part provided identification of respondents including their financial reporting experience either their own personal experience or experience of their parents. The following part was organized in three steps, which gradually extended our findings. In the second part we inquired (a) whether the respondent had knowledge or any experience with accounting and tax systems. Subsequently we inquired about (b) the perception and evaluation of accounting and accounting profession. In the final part we have experimentally tested (c) the approach to solution of selected accounting situations. Formulation of questions and model situations were based on findings of Tsakumis, 2003; Ryan, 2006; Prochazka, 2008 and Strouhal, 2014.

Data were first collected through the questionnaire, then coded and subsequently analysed using descriptive statistics (i.e. mean, and standard deviation) to analyse the responses. To measure the degree of similarity of the two sets of responses of groups surveyed we employed the correlation coefficient and the F-test. The F-test was chosen to test the compliance of data sets that cannot obtain negative values, which corresponds to the nature of acquired data.

5. RESULTS

Perception of accounting and accounting profession was evaluated in four steps. In the first step we investigated how respondents understand the role of information provided by financial statements and how they perceive and evaluate accounting and accounting profession. We wanted to find out what is the main goal of accounting and importance of financial statements according to our respondents. The answer consisted of selection of five proposed variant answers with values of 1 to 5. The proposed answers and the average values are presented in table 2.

⁷ We are aware that our sample is rather limited, but we have used everything that was at our disposal at the time. We hope to use much larger sample in our next investigation.

Table 2. The main goal of accounting and the importance of financial statements is:

		Chinese group	Czech group
A	Providing information about processes in the company for its management and administration	1.71	1.78
B	Providing information on the company's financial situation and its performance for the stock exchange transactions and other investors activities	1.88	2.03
C	Providing information for determination of the amount of tax liability	2.13	1.88
D	Providing information for staff evaluation and remuneration	2.31	2.35
E	Providing information for managers' evaluation	2.44	2.5
F	Providing information for banks and other creditors for the purpose of assessing the borrowers' creditworthiness	2.19	2.16
G	Providing information to increase the effectiveness of the internal operations of the company	2.28	2
H	Others	x	x
Correlation		0.7855	
F-test		0.9993	

Source: authors' own investigation

The main importance of the accounting and accounting information was most often perceived with the use in management evaluation (e) and decision-making of managers (d). The responses of both groups did not differ significantly, which was confirmed by the value of F-test. Interesting are the differences in the assessment of b) and c) value between the groups. Higher importance of financial information for capital markets and investors activities was identified by the Czech students, while the by Chinese group of students attributed higher importance to the tax purposes of financial statements. This finding of Czech group is interesting because capital markets play very minor role in financing of companies in the Czech Republic, whereas dominant bulk of funding is provided by bank sector in accordance with historical tradition. It can be also considered as a reflection of the predominant central elements in Chinese economy and general accounting attitude.

The next question was aimed to discover the opinion on the significance of accountants in the management of the firm. The significance of the managerial positions was classified in seven degrees (ranking, representing significance within the seven managerial positions listed in the table):

“Which of the top managerial positions is, in your opinion, more important for the success full operation of the company. Classify the following positions according to their importance (the most important = 1., the least important = 7)”:

The results in a form of average value of the importance of the managerial positions according both groups of respondents are presented in table 4:

Table 3. The perception of the accountants and their role in the system of firm management

		Chinese group	Czech group
a	Company's director	1,935	1,714
b	Chief financial officer	2,419	2,724
c	Business director	4,065	4,393
d	Marketing director	4,871	4,429
e	Personnel director	5,355	5,571
f	Chief accountant	3,935	4,214
g	Production director	5,419	4,893
Correlation		0,962	
F-test		0,925	

Source: authors' own investigation

There is not a great difference in the assessment of the importance of the most of the top managers' positions, but relatively great differences were detected in the position of chief accountant and the production director. The Czech respondents see the position of chief accountant more important than the China respondents, while a group of Chinese respondents has given more importance to the Production Director. This can be perceived as a reflection of remaining significant role of the element of the system of planned economy system in which it is most important to ensure the tasks of the plan, that are supervised by the Production Director. In the Czech group and in the Chinese group, however, the highest importance is attributed to the Personnel Director. The differences of the respondents' answers confirm the value of F-test.

In the following part we used the experiment and we have enquired with the use of three model situations. We wanted to find whether there are any differences in proposed solutions of simple accounting situations. The first question tested the proclivity to caution in reporting of content as a sign of higher conservatism. The other aspect was the reason of the solution – lowering tax or proper information. The model situation was described as follows:

“You are in a position of company's accountant and you have to solve the following issue:

The customer has to pay to your company for product delivery. However the customer got into uneasy financial position and asks for extension of payment. Their financial situation is becoming very difficult and it is possible that they will not pay the full amount. The end of reporting period is approaching and the value of related receivable will be reported in your balance sheet. What accounting treatment of this situation you will recommend?”

(highlight the chosen solution a), b) or c).

The results of both groups are presented in table 4:

Table 4. Compliance with rules of financial reporting

		Chinese group		Czech group	
		Number	%	Number	%
A	You reduce the amount of Receivables (creating adjustment), because the original amount of Receivables would be improperly expressed the volume of firm's assets with regard to the risks that emerged.	5	15.6%	9	32.1%
B	You reduce the amount of Receivables (creating adjustment), because reduction in the amount – adjustments – can reduce the tax base and tax obligations.	16	50.0%	12	42.9%
C	You do not reduce the amount of Receivables (you do not create the adjustment) because the reduction in the item did not occur and only future development will show what will has to be recorded in the books.	11	34.4%	7	25.0%
Correlation		0.5531			
F-test		0.4285			

Source: authors' own investigation

The answers were similar in both groups – the solution with the highest frequency represents the willingness to report with respect to accounting rules and with the same reason – to reduce tax obligation. The role of tax in accounting and the impact on the accounting information was confirmed in both national contexts. The distribution of responses is a little different – as confirmed by the value of F-test. Greater tendency towards conservatism, and greater attention to the risk in the information provided can be seen in the group of Czech students (32.1per cent of the answers),

while the tendency to materiality of the information (as a part of “responsibility feature”) can be seen in a group of Chinese students (34.4 per cent of answers).

The next situation was aimed to test the role of accounting rules in the accountant’s decision-making. The core of the model situation was as follows.

“You are in a position of the company’s accountant and you have to solve the following situation: A new partner has joined the company. His contribution to equity of the company will be a truck as non-monetary endowment. You have to decide on the accounting treatment of this operation. How will you deal with this situation?”

(highlight one of the solutions a) – h) which correspond to your opinion).

The options a)–h) and the corresponding results reached in both groups are presented in table 5.

Table 5. The role of regulation in accountants’ decisions

		Chinese group		Czech group	
		Number	%	Number	%
a	You ask for advice of an accountant working in another company, how did he deal with this situation	3	9.7%	4	13.8%
b	You will search for information in textbooks and interpretative materials (on internet etc.).	5	16.1%	4	13.8%
c	You will search for information in accounting standards and interpretations issued by the Union of Accountants	8	25.8%	0	0.0%
d	You will search for information in the Accounting Law and other legislation governing accounting	9	29.0%	11	37.9%
e	You know the situation and you can solve this situation based on this knowledge	4	12.9%	5	17.2%
f	You ask a consulting firm to provide you with the information	2	6.5%	1	3.4%
g	You ask the tax advisor for relevant information	0	0.0%	4	13.8%
h	Other solutions (no answer)	1	x	3	x
Correlation		0.3615			
F-test		0.7019			

Source: authors’ own investigation

In the table, the most similar and the most contrasting solutions are highlighted. The most frequent suggestion was to consult the legal rules governing the accounting. It was the most common solution both in the Czech and Chinese group. The greater differences occurred in the solution used the recommendation of the Union of accountants. While 25% of the respondents chose this solution in the Chinese group, none of the respondents opted for this solution in the Czech group. This can be understood as an indicator of the changing position of professional accounting in Chinese economy which was strengthened by the process of adoption of the new accounting standards.

In the final model question we tested the views on possible misuse of information in the financial statements and hence the perception of importance of financial information. The respondents should choose one of the suggested statements about the nature of financial information:

“The information in financial statements – in your opinion (*highlight one of the solutions a)–e)*)”.

The offered responses a)–e) and results reached in both groups are presented in table 6.

Table 6. The character of financial information

		Chinese group		Czech group	
		Number	%	Number	%
A	Is strongly private and should be used only for the owners and managers.	4	9.8%	12	42.9%
B	Is public, available for everyone who wants to collaborate with the company	10	32.3%	5	17.9%
C	Is sensitive and its publishing exposes the company to danger	9	29.0%	1	3.6%
D	Presents a picture of the of company's performance and should be publicly available	4	12.9%	3	10.7%
E	Presents the information important for public authorities and national economic statistics and should only be provided to these institutions.	14	45.1%	7	25.0%
Correlation		-0.7033			
F-test		0.9246			

Source: authors' own investigation

The answers and their distribution were quite different in both groups. The majority of Chinese respondents consider the financial information as important for public authorities and national statistics. The majority of Czech respondents consider the financial information strongly private and available only for the firm owners and firm management. Only a few students agreed to this view in the Czech group. Relatively great number of Chinese students (29.0 per cent) considers the financial information as sensitive and its publishing could expose the company to danger. And the same number (32.3 per cent) of the Chinese students the financial information considers as publicly useful and important for the company's collaborates. The difference in answers is confirmed negative value of correlation and the value of F-test.

The last model question concerned possible reason for earnings management and justification of this manipulation.

The respondents should solve this model task:

"The chief accountant of company has decided to use all available opportunities given within the accounting rules to report the lowest possible earnings. You perceive his efforts to report the lowest profit as: ... (Please, choose the most appropriate suggestions in table below)."

Offered solution and answers are presented in table 7.

Table 7. The earnings management and its justifications

		Chinese group		Czech group	
		Number	%	Number	%
A	Reasonable, because he company will not need to pay large dividends,	4	12.5%	2	7.7%
B	Reasonable, because he company will not have to pay high taxes,	5	15.6%	14	53.8%
C	Unwise because it decreases the share price of the company on the stock exchange,	5	15.6%	3	11.5%
D	Unwise because it will worsen the company's credibility in the eyes of banks and lower credit availability,	18	56.3%	7	26.9%
Correlation		0.1007			
F-test		0.9961			

Source: authors' own investigation

The responses are quite different for each group. The most frequent answer in the Chinese group was the refusing to lower the earnings to the lowest level justified by possible restriction of access to credit. The most frequent answer in the Czech group considered reducing profits as appropriate measure accompanied with justification for lower tax liability. It can be explained as a reflection of the growing role of banks in the current stage of transformation in Chinese economy and of the reflection of the role of accounting in the Czech economy. The differences in the distribution of answers are also confirmed by the value of correlation and corresponding F-test.

6. CONCLUSION

Our results confirmed validity of our hypothesis of existence of different perception and related opinion on accounting profession and role of accounting corresponding to nationality of respondents. We found that there are differences both in opinions on the role of accountants in business on accounting profession and particular model business situations. The results of this questionnaire survey revealed some differences in respondents' opinions and approaches representing different national backgrounds.

As to the results of our qualitative research, the answers varied significantly in three of the six questions on attitude of accountants, but in three others they did not significantly differ. The key differences were revealed in issues of (1) the perception of the nature of financial information, (2) the role of a professional organization and (3) in the approach to distortion of financial information. Although the results of our research are for number of reasons mainly indicative, some predicted differences can be accredited to them. On the basis of these, it can be concluded that the hypotheses formulated for this research have been confirmed.

Limitations of our findings are in several levels. The first is the size and structure of both groups of respondents. As the respondents were the first year university students from China and from the Czech Republic. The students were quite young and did not have to have firm opinion on some accounting issues. The second limitation is the nature of used questions in the questionnaire and their reliability to portray researched characteristics. The final reservation may be expressed to the wording of suggested answers or solutions, which sometimes may not be interpreted unambiguously.

Direction of future research: This qualitative research is very informative and rich in its nature; we recommend repeating the research in future years and use more experienced students where their accounting opinion is more firmly settled. Interesting could be also to find students' opinion on further development of accounting profession and perception of accounting jobs.

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DISCIPLINARY RESPONSIBILITY OF ACCOUNTING PROFESSIONS IN POLAND IN THE YEARS 2013–2016

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Abstract

Disciplinary liability of tax advisors was established in connection with the establishment of the self-governing body of this professional group, which was effected by the Act of 5 July 1996 on tax advice. This article discusses the principles of this responsibility and the basic problems of disciplinary responsibility. The statutory auditor is liable disciplinary if he committed a disciplinary offense. Disciplinary punishments consist in the violation by the statutory auditor of the following: practice, professional ethics, independence or national professional standards, Fulfillment of obligations connected with belonging to PIBR, running a business in the form of an audit firm, to perform functions in the management or supervisory bodies of audit firms Disciplinary punishments are: reminder, penalty up to 250 thousand zł, prohibition of testing for a period of one to three years, prohibition of auditing for a period of one to three years for a period of one to three years, prohibition of the profession of statutory auditor for a period of one to three years, prohibited to serve as a member of the Management Board or other managing authority or member of the supervisory board or other supervisory body in audit firms or public interest entities for a period of one to three years, deletion from register.

Keywords: *tax advisers, disciplinary responsibility, disciplinary officer, statutory auditors*

1. INTRODUCTION

In Poland, the finances of businesses and public institutions are dealt with by many people who are obliged to do many things that they are required by law and the needs of their business. Among these people there are business managers, accountants – both on the basis of a contract of employment as well as a civil law contract, and there are also tax consultants and auditors. Each of these individuals must adhere to strictly defined rules regarding the activities performed and must be responsible for the results of the actions taken by them as well as for their failures. The issue of liability is very important because the finances in each unit must be clear and present its financial reality. The purpose of this article is to present the notion of disciplinary liability of people, who in Poland: keep books of accounts, provide tax consultancy services, as well as provide services of auditing financial statements. The article is represented by the method of describing the description of the disciplinary responsibility to the nature of the regulatory acts or acts of the law, which are recognized as being in the process of determining and determining its security. The article presents the issue of disciplinary liability in Poland only, due to its limited volume.

2. THE CONCEPT OF DISCIPLINARY RESPONSIBILITY AND PUNISHMENT FOR IT IS VIOLATION

Disciplinary liability is based on the guilty nature of the act of defrauding the employee's obligations towards the employer or the conduct contrary to the principles of ethics and professional dignity specified in separate documents (e.g. codes)¹.

The literature points out that disciplinary offenses are: deed, disciplinary, unlawful, guilty, and negatively affecting, to a greater degree than the negligence of the protected good. Whatever the definition of responsibility, however, it always involves the behavior of a particular person².

The liability in question has no legal basis in only one legal act, but it is grounded in many provisions. These are the laws and internal codes of organizations regulating the services or professional groups such as the Association of Polish Accountants, the National Chamber of Statutory Auditors, the National Chamber of Tax Consultants. This kind of responsibility does not raise doubts about its functioning. The Constitutional Tribunal in Poland justified the need for disciplinary liability of some professional groups. In one of his judgments, he wrote, "the separation of disciplinary procedures and giving them, first of all, extrajudicial character, may be based on the specific nature of individual occupational groups and the protection of their autonomy and self-government" (Judgments of 8 December 1998, K 41/97, LexPolonica No. 343692, OTK 1998, No. 7, item 117).

In addition, in another judgment, the Constitutional Tribunal pointed out that "the guarantee of the provision of services at the appropriate level is also the system of sanctions and procedures that ensure compliance with the rules of deontology" (judgment of 18 March 2003, K 50/01, LexPolonica n° 362470).

The position of the Constitutional Tribunal is of the opinion that disciplinary proceedings conducted by the self-governing bodies of professional groups are part of the fulfillment by the constitutional function of custody over the proper performance of these professions. This is primarily about the manner in which this conduct is carried out, as well as the penalties imposed on it, which must take into account the public interest and its protection. Disciplinary procedures governing specific occupational groups regulate specific regulations. In general, three stages of disciplinary action can be distinguished:

- preparatory proceedings,
- reconnaissance,
- appeal proceedings.

Each of these stages may differ in different legal regulations. Usually a disciplinary spokesperson is in place, followed by a disciplinary committee in a two-state system. The most commonly held disciplinary actions, including their severity, are:

- admonition,
- reprimand,
- suspension of the profession for a specified period,
- deprivation of the right to pursue a profession.

Disciplinary proceedings are the so-called. internal proceedings. They are just inside a specific institution or organization. Contrary to the orderly procedure, however, they are largely autonomous. Disciplinary proceedings are led by bodies appointed by law, which are composed of employees of the institution or organization or officers of a particular service. etc., appointed for a specific term³.

¹ Giętkowski R., *Disciplinary responsibility in polish law*, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2013, p. 3-5.

² Ura E., *Prawo urzędnicze*, Warszawa 2007, Lexis Nexis, s. 241.

³ E. Bojanowski, Z. Cieślak, J. Lang, *Postępowanie administracyjne i postępowanie przed sądami administracyjnymi*, Warszawa 2010, s. 188.

3. DISCIPLINARY RESPONSIBILITY OF TAX ADVISORS

The tax advisor, in accordance with the Act of 5 July 1996 on tax advisory⁴, carries out the following activities:

- providing advice, opinions and explanations of tax responsibilities
- making statements and tax returns or providing assistance in this regard
- representation of customers in proceedings before tax authorities in all instances and before Administrative Courts
- providing advice, opinions and explanations and carrying out settlements other than taxes – such as public liabilities (eg pension contributions, health insurance)
- advising on international tax law, advising and representing clients in the area of customs duties,
- keeping tax records and other records for tax purposes and providing assistance in this regard

Supervision of proper performance of the profession of tax advisor is exercised by the self-government of tax advisors. The means to implement this obligation are disciplinary measures that the competent authorities of the self-government of tax advisors can apply to persons performing this profession in the event of a violation of their rights or professional obligations. Article 64 of the Tax Advice Act lays down the basis for disciplinary liability of tax advisers and establishes a system of penalties. If the tax advisor fails to perform or improperly performs his duties provided for by law, then he will be subject to disciplinary liability. Obligations under the Tax Advice Act are primarily an obligation to constantly improve qualifications, professional secrecy, regular membership fees and civil liability insurance. formed when carrying out tax advisory activities.

At the same time, disciplinary responsibility is governed by laws outside the legal system. The most important ones include: Resolution No. 9/2002 of the First National Convention of Tax Advisers of 27 January 2002 on the Principles of Ethics of Tax Consultants (amended by Resolution No. 28/2006 of the Second National Congress of Tax Consultants, Resolution No. 22/2007 of the Second Extraordinary Congress of Tax Consultants) No. 60 / 2010-89 / 2010 Third National Congress of Tax Consultants and Resolution No. 23/2014 of the 4th National Congress of Tax Consultants)

- the rules of ethics of tax advisers were published in resolution No. 32/2014 of the National Council of Tax Advisors dated 11 February 2014, Among the principles of ethics tax advisors are distinguished among others:
- To perform professional activities according to the best will and knowledge, honestly and reliably with due diligence,
- to perform their duties in accordance with the law, having regard to the client's good,
- to have a respect for the principles of loyalty and companionship towards other tax advisers,
- to preserve professional secrecy within the boundaries of the law,
- a ban on advertising tax services provided by them, according to the provisions of the Act. It is not an advertisement for the dissemination of information regarding any address data, hours and days of service and the scope of services provided without the use of valuation terms,
- continuous improvement of professional qualifications.

The disciplinary organs of the National Chamber of Tax Consultants assess the activities of tax advisers. Actions that are generally considered to be disgraceful, including those not directly related to the profession, may be grounds for disciplinary action. They can reconcile the image of the profession of tax adviser. As is evident from the principles of professional ethics (Article 2 (2)), the tax advisor is to protect the dignity of the profession and to protect it. Disciplinary liability also

⁴ Dz. U. z 2016, poz. 794

includes tax advisors in companies providing tax advisory services. This applies in particular to the following:

- failure to comply with the obligation to notify the KRDP of any changes to the data submitted for registration in the register of legal persons entitled to perform tax consultancy,
- violation of rules and methods of conducting advertising of tax advisory services,
- failure to comply with the obligation to enter into a civil liability insurance contract,
- performing tax advisory services in the absence of insurance cover.

For acts contrary to the principles of professional ethics, the adjudicating authorities may also recognize the offense related to the offense of a fiscal offense. Disciplinary action can be ordered from the least severe to the most severe. The extensive catalog of disciplinary penalties, ranging from dismissal, reprimand, suspension to the right to pursue a profession, and ending with the disqualification of a profession, allows the award of penalties to be appropriate to the degree of culpability and injury. Bodies adjudicating in disciplinary proceedings against a counselor⁵.

4. DISCIPLINARY RESPONSIBILITY OF STATUTORY AUDITORS

The disciplinary responsibility of statutory auditors is provided for in the new law passed on 11 May 2017 on statutory auditors, audit firms and public oversight⁶. According to art. 139 sec. 1 statutory auditor is subject to disciplinary liability if he or she has committed a disciplinary offense, which may involve an infringement of the following:

- pursue a profession, professional ethics, independence or national professional standards;
- fulfillment of duties connected with the professional self-governing of the statutory auditors;
- conducting business in the form of an audit firm referred to in art. 46, including as partner in a civil partnership, public partnership, partnership or limited partnership;
- performing functions in management or supervisory bodies of audit firms.

In disciplinary proceedings against an auditor, the following penalties may be imposed:

- penalty of admonition;
- a fine;
- prohibition of testing;
- refrain from carrying out auditing activities;
- ban on the profession of chartered accountant;
- a ban on the function of a member of the board of management or another managing body or a member of the supervisory board or another;
- supervisory authority in audit firms or public interest entities;
- deletion from the register.

According to the Act of 2017 on statutory auditors, the Disciplinary Court, in determining the type and severity of penalties, shall in particular consider:

- the importance of the disciplinary offense and its duration;
- the degree of blame;
- the financial situation of the accused, expressed in particular in the annual income of the accused;
- the amount of gains or losses avoided, to the extent that they can be determined;
- degree of co-operation with the authorities conducting disciplinary proceedings.

⁵ Michalak A., *Ustawa o doradztwie podatkowym. Komentarz*, Wydawnictwo Prawnicze LexisNexis, <https://sip.lex.pl/#/komentarz/587478816/276256>

⁶ Dz.U. z 2017 r. poz. 1089.

In addition, art. 162 of the aforementioned law provides that in the case of simultaneous punishment for several disciplinary offenses, the penalty for the individual offenses shall be imposed and then the joint sentence. The following rules apply to the custodial sentence:

- the penalty can not be combined with a fine;
- for cash penalties, the total fine can not exceed the sum of these penalties and the amount of PLN 250 000 or can not be lower than the highest of the fines imposed;
- prohibition penalties are:
 - carrying out the research,
 - performing financial audits,
 - continuing the practice of a statutory auditor.

5. DISCIPLINARY LIABILITY OF STATUTORY AUDITORS AND TAX ADVISERS PRACTICE

The extensive scope of services provided, according to the mission of the self-governing body of statutory auditors, is realized for public interest. The implementation of this service is based on Art. 17 of the Constitution of the Republic of Poland, which obliges self-governments of the public trust professions to custody the proper exercise of the profession within the limits of the public interest and its protection.

The Ombudsman acts on the basis of the regulations:

- act on certified auditors,
- rules of disciplinary proceedings against statutory auditors introduced by resolution No. 1619/38/2010 of the National Council of Statutory Auditors of 16 February 2010, approved by the Audit Oversight Commission on 31 March 2010;
- appropriately applicable provisions of the Act of 6 June 1997 – Code of Criminal Procedure (in matters not regulated in the chapter of the law on disciplinary proceedings),

According to these rules, a disciplinary investigation is preceded by an obligatory investigation into the circumstances that result in disciplinary liability. The conduct of the investigation justifies the desirability of initiating or refusing to initiate a disciplinary investigation. A disciplinary investigation in which evidence is gathered and their assessment of the conduct of a disciplinary offense by a statutory auditor is the basis for the Ombudsman's or his Substitute's preparation of a penal complaint and to file it promptly with the National Disciplinary Court.

Issues addressed to the Ombudsman in the years 2011–2014 by the KRBR concerned 1981 requests to statutory auditors not participating in mandatory professional development. Failure to comply with mandatory professional development requirements for 2010 and 2011 was a violation of art. 4 sec. 1 pt 2 and sec. 2 Act, Section 5.3. Principles of professional ethics of statutory auditors (annex to Resolution No. 1426/33/2009 of KRBR of 3 November 2009 on the professional ethics of statutory auditors) and resolution No. 1422/33/2009 of the KRBR of 3 November 2009 on the principles Obligatory professional development for statutory auditors. On the other hand, in 2012 and 2013 – failure to comply with the training requirement was a violation of the aforementioned. The provisions of the Act and the provisions of the resolution, which came into force on 1 January 2012, ie chap. 130.3 of the Code of Professional Ethics of Accounting Officers of the International Federation of Accountants (IFAC), introduced by the resolution No. 4249/60/2011 of the CRB of 13 June 2011 on the principles of professional ethics of statutory auditors.

Cases against statutory auditors who have not completed compulsory professional training are considered uncomplicated in disciplinary proceedings because they relate to a single complaint and – in the majority of cases – to non-performing (seniors). It should be emphasized that non-participants in obligatory training often do not respond to sent correspondence and do not even receive postage from post offices, which requires further action, including sending out clarifications needed to make the final Ombudsman's decision.

In the case of the above. Cases of non-participation in mandatory professional development, 78.2% were issued to discontinue disciplinary investigations or refuse to initiate disciplinary investigations, largely due to negligence. This was the case for non-practitioners of advanced age (75 years and over) who documented health conditions that prevented them from participating in compulsory vocational training. Making these decisions in the course of explanatory and disciplinary proceedings results from unfavorable for seniors provisions of the law, which does not provide for a certain mode of dismissal and causes almost every year proceedings against the same persons. The allegations and the court's applications for punishment concerned only statutory auditors who did not explain the reasons for non-participation in compulsory professional training, or the explanations provided were not convincing and / or not documented.

Table 1. Number of cases completed by the Ombudsman and number of cases addressed to the Court

Year in which statutory auditors they did not mandatory improvement	Number of requests addressed to the ombudsman	Ombudsman concluded Number of cases that The (He remarried or Refused to initiate investigation)	Number of cases addressed to court	Case in progress
2010	992	849	143	-
2011	540	433	107	-
2012	113	81	32	-
2013	336	186	51	99
Razem	1981	1549	333	99

Source: Own study based on activity report for VIII National Assembly of Statutory Auditors 24–26 June 2015 (as of 31.12.2014)

In 2013, the KRBR, in addition to the in-service training requests, sent 18 Complaints Officers to disciplinary proceedings against statutory auditors acting in the legal form of art. 3 sec. 2 of the Act, which, by running an entity authorized to audit financial statements, did not submit to the National Chamber of Statutory Auditors for 2012 a statement of operations and a settlement of the annual supervisory fee and did not pay advances on an annual basis on a quarterly basis. Of the 18 applications submitted to the Ombudsman, 11 have been discontinued, 5 have been forwarded to the Court, 2 remain valid at the end of 2014, and the lack of clarifications has delayed the transfer of these cases to KSD.

Table 2. Structure of applicants for the National Disciplinary Spokesperson 2014–2016

L.P.	Wnioskodawca	2014	2015	2016
1	National Chamber of Statutory Auditors	336	437	78
2	National Commission of Supervision	122	45	68
3	Audit Commission	7	13	10
4	Other entities (statutory auditors, natural persons, business entities)	34	36	16
	Together	499	531	17

Source: Own study based on the National Discipline Commissioner's report for 2014–2016

In 2014 – as compared to the previous year (2013) – the number of applications submitted by the KRBR to increase the non-performance of statutory training by the statutory auditors was increased – 336 applications were submitted to the Ombudsman, while in 2013 these applications were 121. In 2015 – compared to the previous year – the number of applications submitted by the KRBR concerning the non-fulfillment of the obligation of professional development by the statutory auditors increased – the number of applications submitted to the Ombudsman was increased. While in 2014 these applications were 336.

In 2016, the number of applications submitted by the KRBR to the non-performance of statutory retraining by the statutory auditors was reduced – 77 applications were forwarded to the Ombudsman, while in 2015 those applications were 437.

In summary of the activities of the National Disciplinary Ombudsman, they shall ensure the proper conduct of disciplinary proceedings in accordance with applicable law. In the course of disciplinary proceedings against statutory auditors, the right to defense is respected by the possibility of participating at every stage of the proceedings of defenders from KIBR members, lawyers or solicitors.

The activities of the National Disciplinary Ombudsman confirm the fulfillment of the statutory duties in the area of counteracting negative phenomena that impair the quality of the profession of public trust exercised by statutory auditors. The Disciplinary Spokesman of the National Chamber of Tax Consultants supervises the observance of the provisions of the Tax Advice Act and internal acts of the National Chamber of Tax Advisers.

Table 3. Cases conducted by the Disciplinary Advocate of the Tax Advisors in the years 2010–2013

year	Refusal to initiate the investigation	Initiation of the investigation	Discontinuance of the investigation	Directing the Penalty Application to the Disciplinary Court	Referral to the arbitration
2010	7	31	59	13	2
2011	32	145	36	21	8
2012	46	91	142	46	4
2013	51	104	135	47	3
Together	136	371	372	127	17

Source: Own study based on the report of the Disciplinary Officer of the Tax Advisors 2010–2013

The most common procedure was the conduct of non-compliance of tax advisors with the statutory obligation to pay membership fees for self-government. Another large group of tax advisors to whom the proceedings are being conducted are situations of evasion from the statutory obligation to have civil liability insurance when performing tax consultancy activities. There are also cases of filing complaints to tax advisers who are not part of the tax consultancy.

SUMMARY

Contrary to penal law, where the sanction is adapted to the types of offenses most likely to be of an objective nature, the creation of disciplinary actions in the exhaustive list of conduct that threaten the performance of official or professional duties, together with clearly defined sanctions, is practically impossible. Due to the fact that disciplinary offenses largely concern behaviors related primarily to the rules of professional conduct and ethics. In this light, disciplinary responsibility should be analyzed first of all by the prism of public trust connected with the exercise of a particular profession. It is not by chance that disciplinary liability is foreseen in the case of specific occupational groups where the pursuit of a profession or service is of substantial importance to the

activities of the state and society. The statutory auditor is liable for disciplinary action for breaking the law, auditing standards, independence and ethics⁷

Disciplinary liability threatens the counselor who performs this profession and conducts business or employment, if this exercise or employment causes conflicts of interest and incompatibility between particular types of activity or employment, violates the independence and impartiality of the tax advisor or is contrary to the professional ethics of the tax advisor.

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⁷ W. Kozielewicz, *Odpowiedzialność dyscyplinarna sędziów, prokuratorów, adwokatów, radców prawnych i notariuszy*, Warszawa 2012, p. 48.

CAPITAL STRUCTURE DETERMINANTS FOR POLISH MANUFACTURING COMPANIES LISTED ON WARSAW STOCK EXCHANGE. IFRS AS A MISSING FACTOR?

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Abstract

In the article determinants of capital structure for 124 companies from manufacturing sector listed on Warsaw Stock Exchange were analyzed. The paper presents the most important theories of capital structure: classical theories, trade-off theory, bankruptcy theory, agency theory, signaling theory and pecking order theory. The aim of the article was to analyze and verify the most important factors of the capital structure of Polish listed companies from the manufacturing sector, with particular regard to IFRS. The subject of the detailed analysis were the following factors: liquidity, ROA, tangibility, IFRS, company size, growth opportunities, company's uniqueness, depreciation allowances. The most important determinants were: liquidity, ROA, IFRS and company size. In the empirical part correlation analysis and regression analysis were used.

Keywords: *Capital structure, IFRS, manufacturing companies, Warsaw Stock Exchange.*

1. INTRODUCTION

The choice of adequate appropriate capital sources is considered to be the most crucial decision each enterprise has to make. The sources of capital are divided into two essential groups: the own equity and the liabilities. They significantly influence the WACC (Weighted Average Cost of Capital), profitability, liquidity, risk and company value. Those capital structure decisions found their frameworks in various theories. The most important capital structure theories are: classical theories, trade-off theory, bankruptcy theory, agency theory, signaling theory and pecking order theory. Some of them are based on frictionless market assumptions, while others on imperfect market assumptions. These theories, in a certain way, influence the choice of adequate capital sources; while in practice this decision is very often determined by specific capital structure determinants.

Capital structure determinants, in general, are divided into microeconomic, macroeconomic and institutional factors. In literature, microeconomic determinants are classified as factors that are dependent on the enterprise, such as the company size, level of risk, profitability, assets structure and other. Among macroeconomic factors, literature distinguishes inflation, economic growth, interest rates, currency fluctuations etc. The institutional factors concern, for instance, the stock exchange growth, banking sector development, existing legal systems, legal protection of investors and creditors. In this article, the following determinants are analyzed: liquidity, ROA, tangibility, IFRS, company size, growth opportunities, company's uniqueness, depreciation allowances. Company's uniqueness is one of the determinants that have been insufficiently verified through empirical analysis, particularly in CEE countries. One of the relatively new variable, that influence the level of indebtedness within the company, is the application of IFRS. In companies operating in the CEE regions, that applies these rules the quality of financial reporting is higher, the accounting risk lower, and the number and quality of publicly available information increases. Investors perceive these companies as bearing lesser risk (Kimczak, 2011, p. 228–248; Waniak-Michalak, Czajor, Michalak, 2012, p. 63–82; Borowski, Kariozen, 2007, p. 5–24; Grabiński, Kędzior, 2007a, p. 7–21; Grabiński, Kędzior, 2007b). In the light of empirical studies, enterprises that apply IFRS rules are characterized

by its lower weighted average cost of capital. The aim of the article is to analyze and verify the most important factors of the capital structure of Polish listed companies from the manufacturing sector, with particular regard to IFRS.

For the purposes of this article an adequate literature has been reviewed. Moreover, a descriptive statistic, correlation and regression analysis was applied in order to analyze and verify the most important factors of the capital structure. The results of this study were presented in the form of tables and supplemented with the description of obtained outcomes. In the first phase of research the dependent variable, three indicators of indebtedness and basic descriptive statistic were analyzed. Based on the results of Spearman's rank correlation coefficient analysis the adequate regression model was applied and its findings were presented.

2. THEORIES OF CAPITAL STRUCTURE

One of the crucial factors that influence the company's value is its capital structure. Assuming that one of the basic goals of the business is to maximize the company's value and profits of owners and shareholders, choosing the optimal capital structure and its effective management are one of the most important decisions they need to make. Capital structure theories seek to find an answer whether the company can increase its market value, decreasing its capital costs through differentiating the capital structure. These theories can be divided into frictionless market theories and imperfect capital market theories (Jerzemowska, 1999, p. 61). The former ones assumes that there is symmetry of information available on the market, all transaction are costless and the size of capital is constant. Market participants behave rationally and companies operating on that market do not bear any establishing and liquidation costs. Obtaining and processing information is free and available for all market players (Chojnacka, 2012, p. 45). This group of theories includes: net income theory; net operating income theory; traditional theory and F. Modigliani and M. Miller theories (MM theories). The very first studies concerning the capital structure were conducted at the turn of 40s and 50s. D. Durand is considered to be the founder of these researches (Durand, 1952, p. 215–261). In this period, the following concepts were dominant: net income theory, net operating income theory and the traditional theory. Net income theory, also known as dependence hypothesis, assumes that firms can increase their market value through increasing proportionally the debt in their capital structure. Maximization of the firm's value results from the fact that the costs of debt and own equity are constant. As the cost of borrowed capital is lower than the cost of own equity, an increase in the proportion of debt (financial leverage) causes a decrease in the weighted average cost of capital (WACC), which, in fact, enhances the market value of the company. The only costs related to the use of borrowed capital to finance an enterprise are fixed interests (Jerzemowska, 1999, p. 65–66). This theory assumes the maximum potential share of debt in financing the company. The higher the level of debt, the greater the value of an enterprise.

Net operating income theory is in contrary to net income theory. It is also called an Independence Hypothesis, as company's market value does not depend on its capital structure. Unlike in the previous theory, an increase in shares of debt in company's financial leverage causes a rise of risk and cost of own and borrowed capital. This high cost of capital relates to the fact that shareholders expect higher returns due to greater financial risk. According to this theory, if the company's capital structure changes, it only affects the ownership structure, not the market value (Stradomski, 2004, p. 26–27).

The most practical approach is the Traditional Theory, which combines assumptions of the former ones. Optimal use of financial leverage reduces the cost of capital. Along with the indebtedness, company's market value increases up to the certain point. This point, where the WACC reaches the lowest level and market value of an investment is the highest, sets the optimal capital structure. After crossing this point any further enhance of borrowed capital will reduce the firm's value, as shareholders and creditors expect higher returns considering bearing greater risk. The company can decide on the most optimal capital structure, that will provide profit maximization for

shareholders (Jerzemowska, 1999, p. 68–69). The more precise theory, that evolved from the traditional theory is compromising theory.

In 1958 F. Modigliani and M. Miller released their article concerning the influence of capital structure on the company's market value. Their studies were awarded the Nobel Prize for Economics and significantly influenced further finance researches. Moreover, it has begun the discussion concerning the sources of financing companies, that is still ongoing. They assumed that the capital markets are perfect, interest rates for creditors and borrowers are the same, there are no bankruptcy costs, companies raise their capital through issuing bonds and shares, and cash flows are constant over time. Based on this assumptions, they established that in the economy without taxes, the market value of a company and the weighted average cost of capital do not depend on the capital structure (Modigliani, Miller, 1958). In 1963 they presented their second model, which included taxes, as adjustment to their first theory. According to their theory, the value of the company is determined by the cash flow discounted by the interest rate applicable to the class of risk. Modigliani and Miller showed the influence of corporate tax on capital structure and introduced the tax shield phenomenon (Modigliani, Miller, 1958, p. 433–443). According to thesis proved in their article, companies that raise capital through internal and external resources can maximize market value only by increasing the proportion of debt in their capital structure. It is worth to emphasize, that, however, the great part of frictionless marker is impracticable, its contribution to the development of further capital structure theories is important. Over time, the authors withdrew from some of their impractical assumptions.

Perfect capital market is only a hypothetical creation. In real world its assumptions will never be fulfilled and it is difficult to involve its theories in practice. They do not assume the transaction costs, information asymmetry, bankruptcy costs and law regulations. Companies operating on the imperfect market don't take into consideration the transaction costs or binding law. To adjust these factors to the market conditions the following theories have been developed: pecking order theory; bankruptcy theory; agency theory; signaling theory (Stradomski, 2004, p. 30).

Bankruptcy theory, which was developed by N. Baxter in 1967, is determined as static theory, because it assumes that assets and operating activity of a company are constant. Bankruptcy costs arose when a firm cannot meet its financial obligations towards creditors. The higher proportion of borrowing in financial leverage, the higher risk of financial difficulties, as company burdens much more costs related to this debt. These bankruptcy costs significantly determine the capital structure of a company and decrease its market value, as they offset positive effects of a tax shield. Therefore the company should decide on the most optimal capital structure. This optimal financial leverage occurs when the bankruptcy costs related to borrowings are fully offset by a positive effect of a tax shield. Generally, the greater the company is, the lower is the share of direct bankruptcy costs in the value of company (Bradbury, Lloyd, 1994, p. 103–111). These costs, indeed, differ among the enterprises, however they are estimated as about 8–10% of the firm's value (Chen, Merville, 1999, p. 277–293). The indirect costs of bankruptcy constitute about 5–10% of company's value. They are generally higher for companies that carry out diversify production.

M. Jensen and W. Meckling introduced agency cost theory in 1976 (Jensen, Meckling, 1976, p. 305–360). These costs occur when a company hires a third party, known as an agent, to perform specified services for the business. Sometimes these specified services require authorizing an agent to make decisions on firm's behalf. The management board not always acts in the best interest of business owner. It results from the fact that sometimes its main objective is to maintain the position and authority in the company, and its decisions are motivated by this aim. One of the methods of strengthening the link between the management board and the company is granting the shares to its member as remuneration. If the financial situation of a firm is favorable for the shareholders, the remuneration of the management board increases, and vice versa. It is conceivable that management board would seek to decrease the proportion of debt in order to mitigate the bankruptcy risk and potential loss of office. It is also possible that the company may raise a risky investments that could significantly increase future cash flows, however, at the same time enhance the level of risk. This phenomenon is unfavorable for banks and other creditors, as it increases the risk of granted credit, while the substantial part of profits would go to the shareholders. In practice, banks could have

difficulties in executing their rights (Kędzior, Grabiński, 2009, p. 20–29). Agency costs include: costs of constraining owners and shareholders to make decisions, monitoring costs (financial report auditing) and residual loss, that is related to minimizing shareholders profits as a result of imperfect supervision. The higher agency costs, the greater interests and lower company's market value if all other factors are constant (Jerzemowska, 1999, p. 110). According to S.C. Myers, companies that have market value dependent on investment abilities should have lower financial leverage. Their capital structure should have higher proportion of short-term liabilities, that offsets agency costs (Myers, 1977, p. 147–175).

A. Kraus and R. H. Litzenberger (Kraus, Litzenberger, 1973, p. 911–922), who introduced the trade-off theory, assumed that every source of the capital has its advantages and drawbacks. Each company should find its own optimal capital structure, that minimizes the weighted average cost of capital. As companies can deduct costs related to the debt, it is the cheapest source of financing for them, and therefore its share in company's capital structure constantly increases. In this theory the optimal capital structure would consist predominantly of debt. However, in reality this solution is impossible due to the risk of bankruptcy. The maximal level of debt would not minimize the WACC and companies need to compromise the positive effect of a tax shield and bankruptcy costs. The higher level of indebtedness, the greater bankruptcy costs. Creditors for each following credit claim the higher bankruptcy costs, the greater rate of return. In order to obtain the optimal capital structure, each company enhances the level of debt until the marginal benefit exceeds the marginal cost (Kędzior, 2011, p. 145). The optimal level of indebtedness for particular companies could be provided by, so called, industry effect. It was observed that companies operating in the same sector tend to increase their indebtedness level up to the sector average, and consequently reduce indebtedness level when it exceeds the sector average (Cai, Ghosh, 2003, p. 20–32). In literature, the optimal capital structure is more often considered as an interval, rather than one specific value for given entity (Kędzior, 2011, p. 32).

Signalling theory describes the process of forming capital structure within a company, including internal information. It was presented in 1977 by S. Ross, and assumes that the management of company and people from its direct environment has better knowledge about its future revenues and investment abilities (Ross, 1969, p. 784–793). He considered that share price does not represent information available for people inside the company. Therefore financial decisions that relate mostly to capital structure are a sign for future prospects of the company. Increasing the indebtedness is a positive sign of future high cash inflows, which will guarantee debt repayment. In the case of positive development prospects the potential future profits would go only to the current investor if the company is financed by debt. On the other hand, issuing equity is interpreted as a negative forecast and it will cause a drop in a stock price. It results from the fact that current investors would like to share the potential lower profits, or even losses, with the new investors (Chojnacka, 2012, p. 64). Company management could use the information asymmetry to influence the market. They may use incentive signaling method to attract potential investors and persuade them that the firm is worth more than its current market price. If the future cash flows do not follow the financial leverage increase, the company may tackle financial distress and even bankruptcy (Jerzemowska, 1999, p. 120).

Pecking order theory explains the preferences of the company in choosing the sources of financing. G. Donaldson should be considered as the founder of this theory (Donaldson, 1961). In his opinion, enterprises use specific hierarchy when they choose the sources of financing. He questioned the existence of classical theory of optimal capital structure and emphasized the significance of WACC when deciding on sources of financing. Nowadays, companies prefer the internal sources of financing, than the external ones. They prefer stable dividend policy. Any rapid change could cause a decline in share price, as investors interpret it as a forecast of worsening company's financial condition. This theory does not define any optimal proportion of equity and borrowings, two types of internal capital are distinguished: external capital (for instance issuing shares) and internal (for instance retained earnings) that is used in prior to external capital (Chojnacka, 2012, p. 65–66). There are adequate researches that confirm this thesis (Stulz, 1990, p. 3–27). Generally, the riskiest companies do not make use of high indebtedness level and they finance its development mainly from their own resources (for instance Toyota or Microsoft).

3. CAPITAL STRUCTURE DETERMINANTS

Two groups of capital structure determinants are considered in this article. The first one includes variables characterizing indebtedness capacity, such as: profitability, liquidity and depreciation ratio. The other group relates to both: indebtedness and asymmetric information. It includes the following indicators: the size of the company, growth possibilities, asset structure, share of intangible assets in the company's total assets and IFRS adoption.

According to pecking order theory liquidity is an indicator of a company's indebtedness capacity. Current ratio measures company's ability to pay its short-term obligations towards creditors. Higher liquidity level increases guarantee of repaying obligatory payments related to the borrowed capital. Greater current ratio also decreases also the risk of financial distress and allows company to maintain high level of indebtedness. High level of current liquidity allows obtaining debt capital at the relatively low cost and increases the financial flexibility.¹ Therefore, a positive correlation between the current ratio and the level of indebtedness can be expected.

Hypothesis 1: the capital structure of a company is positively correlated with the liquidity.

The Pecking Order theory confirmed a negative correlation between the profitability and the share of debt in company's capital structure (Bauer, 1988, p. 271–281). It points that higher profitability provides an indicator of greater internal sources of capital, which should be exploited at first. Companies with higher profitability are expected to have lower level of indebtedness, than companies with worse profitability, as they do not have the need to borrow large amounts of funds from third parties. On the other hand, the substitution theory predicts that companies with high profitability are more willing to raise borrowed capital, because they bear lower risk of bankruptcy. There is also a view, that riskier companies that have great cash flows should finance their activities mostly by the borrowed capital regarding the ineffective management of own equity. Sometimes the debt is also a factor that discipline the management board and it can enforce certain decisions.

Hypothesis 2: the capital structure of a company is negatively dependent on the profitability.

Another explanatory variable implemented for the purposes of this research is the share of fixed assets in the company's total assets. It is presented as the proportion of fixed assets to total assets. The literature presents two opposite relations, between the financial leverage and the proportion of fixed assets in assets structure. The greater share of fixed assets, that are very often the collateral for the borrowed capital, the higher indebtedness capacity. On the other hand, high levels of fixed assets in the company decreases the asymmetric information and raising own equity can be less expensive (Jensen, Meckling, 1976, p. 306–360). This could encourage the company's owners and shareholders to gain capital from their own resources. In conclusion, a positive correlation between the indebtedness and asset structure can be observed (Gonedes, 1998).

Hypothesis 3: the capital structure of a company is positively linked with the assets structure.

For the purposes of research, the IFRS variable is introduced. This variable indicates whether the company's financial statements were prepared according to IFRS standards or another local accounting standards. The quality of financial reports in companies applying these standards is generally greater in comparison to companies applying local accounting practices (Klimczak, 2011, p. 228–248; Waniak-Michalak, Czajor, Michalak, 2012, p. 63–82). The costs and difficulties that arose during the process of their implementation are not as complex as it is considered to be. Financial reports of companies using IFRS are more transparent and those entities disclose more information

¹ More about capital structure and liquidity: E. Morellec, *Asset Liquidity, Capital Structure, and Secured Debt*, „Journal of Financial Economics”, 2001, Vol. 61(2), p. 173–206.

(Borowski, Kariozen, 2007, p. 5–24). From the investors' point of view, firms applying IFRS bear less investment risk (Grabiński, Kędzior, 2007, p. 7–21). Therefore, they would expect lower return rates from their investments. Moreover, applying IFRS rules, which are mostly based on the fair value, can be considered as a response on capital markets needs and continuous pressure on positive financial results. Consequently, IFRS would be desirable by stock market investors. These reasons could argue for financing enterprises that apply IFRS, from share capital.

Companies that prepare their financial reports in accordance with IFRS generally have lower cost of capital (Fijalkowska, Jaruga-Baranowska, Frendzel, 2007, p. 67–78). J. Francis, R. LaFond, P.M. Olsson i K. Schipper (2004, p. 967–1010) emphasize the correlation between the quality of accounting standards and the cost of share capital. They confirmed that this cost depends on financial data in terms of accounting, particularly based on accrual accounting. S. Li (Li, 2010, p. 607–636) proved that entities applying IFRS within EU lowered the cost of share capital by 47 basic points. Cost of capital was significantly lower in countries that have strong legal executive and promote preparing comparable financial information. Also H. Daske, L. Hail, C. Leuz i R. Verdi (2008, p. 1085–1142) and H. Daske (2006, p. 329–373) confirmed reduction of the capital cost after introducing IFRS rules. This lower cost would encourage companies to increase own equity financing.

Hypothesis 4: the capital structure of a company is positively correlated to the application of IFRS.

The size of the company determines both, the information asymmetry and the company's indebtedness capacity. According to many authors, it is one of the dominant capital structure determinants. A positive correlation can be observed between the size of the company and the capital structure (Ghosh, Cai, Li, 2008, p. 417–438). Larger companies, generally, have greater indebtedness capacity and are able to service more debt than the smaller ones. Such big enterprises generally operate on the market for a long time, are commonly recognized and have stable financial situation developed over the years. The company reputation can be itself a capital structure determinant. Smaller entities have higher level of information asymmetry, therefore they are forced to raise capital from the external sources of own equity. It is also said that bigger companies are more diversified and this decrease the risk of financial distress.

Hypothesis 5: the capital structure of a company is positively linked with the size of a company.

The company's ability to grow should also be reflected in its capital structure. Various capital structure theories describe different influence of company's possibilities to expand along with their level of indebtedness. Pecking order theory implies that companies that undertake more investment projects, assuming stable profitability level, and investments will be financed using internal funds. In consequence, a negative correlation between growth opportunities and capital structure could be observed. Substitution theory presumes also a negative correlation, due to the fact that companies that have greater growth possibilities are also exposed to higher costs of financial distress, that in fact forces them to maintain limited indebtedness. Agency theory also proves a negative correlation. Companies, which have greater abilities to expand would face the underinvestment problem, that results from the lack of access to borrowed capital. This would lead them to maintain the indebtedness on the lower level. This theory also emphasizes that agency costs in such a companies are usually higher, that can impact on the cost of borrowed capital. Therefore, a negative influence of growth opportunities on the indebtedness level should be assumed (Oiu, Bo, 2010, p. 277–287).

Hypothesis 6: the capital structure of a company is negatively correlated to the growth opportunities.

The uniqueness of the company is another factor that could influence the level of indebtedness. It is connected very often with the high research and development or marketing spending. The uniqueness of the company can be measured as the relation of intangible assets to the total assets. Companies and industries that are competitive due to their advantage in technology or adequate ranking on the market

are constantly exposed to high risk of competition and potential loss of dominant position. Due to this significant level of risk, creditors are less willing to grant debt financing to these companies. Entities that produce unique goods, according to the compromising theory, bear greater risk and therefore also bigger bankruptcy costs. The more unique product is, the higher is the risk for the company. Consequently, the greater the uniqueness of the product and company is, the lower is the level of indebtedness (Krishnan, Moyer, 1996, p. 39–55; Ghosh, Cai, Li, 2000, p. 129–132). On the other hand, companies that have a great share of long term assets in the asset structure are very often expected to have the great proportion of long term debt in relation to total debt. Therefore, the positive correlation between assets structure and capital structure could be observed (Jindrichovska, Ugurlu, Kubickova, 2013, p. 6).

Hypothesis 7: the capital structure of a company is negatively correlated to the company's uniqueness.

Depreciation allowances are another factor that can determinate the level of indebtedness. A high depreciation allowances indicates on quick decline in the value of fixed assets, that in result are not secure collateral for debt. This could contribute to the drop in indebtedness capacity level. However, these allowances at the same time increases cash flows, that indicates the company's ability to repay its obligations. This factor would contribute to the increase in indebtedness capacity level. Depreciation allowances are a substitute of a tax shield, however in contrary to the latter one they do not increase the level of risk. Generally, the higher the depreciation allowances are, the lower use of a tax shield in the company. In conclusion, the negative influence of the depreciation allowances on the company's capital structure should be observed (Akhtar, Oliver, 2009, p. 1–26; compare: Fattouh, Harris, Scaramozzino, 2008, p. 417–438).

Hypothesis 8: the capital structure of a company is negatively correlated to the depreciation allowances.

4. DESCRIPTION OF CHOSEN SAMPLE AND MODEL

4.1 Data

The empirical part is based on the financial data of manufacturing companies listed on the Warsaw Stock Exchange in years 2012–2016. The manufacturing industry is the crucial part of the Polish economy, as it creates its real value. Production entities are one of the most numerous groups of companies in Poland, and therefore their financial results can correspond to financial condition of Polish economy. Manufacturing companies in Poland are rather stable entities. They have greater share of fixed assets in assets structure, that allows them to implement indebtedness policy and frame its capital structure according to decisions made by directors. This form of assets structure decreases the agency costs and constitutes the collateral that is needed while deciding on raising debt. Therefore, they have better access to bank loans and credits. This is a less expensive form of financing than through its own equity. Publicly listed companies are obliged to publish their financial results, this provides better access to financial statements and allows investors to compare them. They also maintain a high accounting standard that increases quality of financial data.

Data for this sample is taken from companies' balance sheets and profit and loss accounts for the period 2012–2016, which is available in "Notoria" database. The main reason behind choosing this source of data is its availability and similar standard of preparing. In order to provide comparable data, the sample was restricted to companies that presented separated financial statements in the analyzed period. All companies associated with the financial sector were rejected, due to the different form of capital structure. Firms, which are in the process of liquidation or restructuring, were also excluded from the sample. Due to the fact that some data was not available for the given period of time, the amount of selected companies was reduced to 124.

The dependent variable is the capital structure indicator. In the specialist literature there is no clear definition of the capital structure. If we assume that sources of financing and sources of capital are identical terms, following Ronald W. Masulis (Masulis, 1988, p. 1) and Stephen A. Ross (Ross,

2013, p. 990) point of view, capital structure could be defined as the proportion of short-term and long-term liabilities to the own equity. However, after the separation of this two terms, as it is presented by J. Fred Weston and Thomas F. Copeland (Weston, 19991, p. 565), a capital structure could be defined as the relation of long-term liabilities to the own equity (Chojnacka, 2012, p. 37). Usually, in international researches, the capital structure is analyzed as the relation of long-term debt to total assets or total debt to total assets. For the research purposes, the following definition presented by S. G. Jun and F.C. Jen was applied (Jun, Jen, 2003, p. 5–34):

$$\text{Capital structure} = \frac{\text{current liabilities} + \text{non-current liabilities}}{\text{total assets}}$$

Independent variables applied for the purposes of this article are: current ratio, profitability (ROA), asset structure, IFRS application, the size of the company, growth opportunities, company's uniqueness and the depreciation allowances. The following formulas were applied:

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}}$$

$$\text{ROA} = \frac{\text{net income}}{\text{total assets}}$$

$$\text{Asset structure} = \frac{\text{fixed assets}}{\text{total assets}}$$

$$\text{IFRS} = [1, 0]^2$$

$$\text{Company size} = \ln (\text{assets})^3$$

$$\text{Growth opportunities} = \frac{\text{operating revenue (current year)}}{\text{operating revenue (previous year)}}$$

$$\text{Company's uniqueness} = \frac{\text{intangible assets}}{\text{total assets}}$$

$$\text{Depreciation allowances} = \frac{\text{depreciation allowances}}{\text{total assets}}$$

4.2 Statistical model

Descriptive statistics is used to describe and summarize a sample or observations that were made. It is a primary part of a statistical analysis and is a basis for further evaluation. The basic tools are mean, median and standard deviation. It is commonly used to point out a central tendency and draw the initial conclusions. The more advanced tool used in the researches is a correlation analysis. It is used to verify if there is any relationship between variables and determine how strongly these variables are correlated with each other. Correlation coefficient takes value between -1 and 1. The greater this coefficient is, the stronger the relationship between two variables. It is one of the most important and most common statistical method.

² This variable can have a two-direction impact, if company use of IFRS in a given year the variable is equal to 1, and if not, the value equals 0.

³ The size of the company is very often defined in literature as the natural logarithm of the volume of assets. This makes it possible to compare the companies with each other, otherwise the largest companies would influence the overall sample.

The research was conducted using the panel data regression analysis. The Shapiro-Wilk test was applied to verify the normality and the potential collinearity was excluded using the correlation matrix. On the basis of Spearman's rank correlation coefficient 5 variables with the highest values were included into the pooled OLS model. This model was constructed using the Robust HAC standard errors estimator and verified by the Breusch-Pagan test. This test verifies the heteroscedasticity in a regression model. It tests whether the variance of model errors is constant. If this variance is constant, then the pooled OLS model specification is valid.

5. EMPIRICAL RESULTS

5.1 Preliminary analysis

In the first phase of research the dependent variable (capital structure as relation of long-term and short-term to total assets) is analyzed given time period. The results are presented in table 1. The average level of capital structure is about 40%, however it does not noticeably differ in the analyzed years. Standard deviation, that measures the variation between data, persists on very similar level over the given time period. This indicates that the capital structure level in each company is comparable to each other and does not significantly change over time. A positive trend can be observed when it comes to the median. It suggests that over five years companies were more willing to finance their capital from borrowings. This is confirmed by the further analysis of liabilities for the same time period.

Table 1. Dependent variable analysis

Y (Capital structure)	2012	2013	2014	2015	2016
Mean	0,40	0,39	0,41	0,41	0,44
Standard deviation	0,19	0,19	0,18	0,19	0,22
Max	0,91	1,00	0,96	0,96	1,14
Min	0,02	0,00	0,04	0,03	0,04
Median	0,38	0,38	0,43	0,40	0,42

Source: own elaboration

Prior to presentation of the results of regression analysis, it is important to point out the descriptive statistics of chosen variables. Basic descriptive statistics, such as: mean, standard deviation, minimal and maximal value, is presented in table 2. Based on the mean value of capital structure for observed years, it can be asserted that companies' capital structure is composed in about 40% of borrowed capital on average.

Table 2. Descriptive statistics for chosen variables

Variable	Mean	Standard deviation	Min	Max
Y (Capitalstructure)	0,41268	0,19419	0,0028227	1,1426
ROA	0,038071	0,11079	-0,73398	0,58832
Current ratio	2,3076	3,5156	0,010443	42,913
Company size	12,554	1,4372	8,7565	17,578
Asset structure	0,57473	0,17916	0,090309	0,99654
Growth opportunities	0,17963	23,310	-558,13	110,50
Company's uniqueness	0,03640	0,079241	0,0000	0,62263
Depreciation allowances	0,031343	0,023883	7,8022e-005	0,20335

Source: Own elaboration

Explanatory variables have to justify the capital structure in the best possible way. Therefore, all variables should be highly correlated with the dependent variable, and weakly correlated with each

other. This means that the potential collinearity (a situation when considered variables are strongly correlated and including such variables in the model does not bring any additional, desired information) has to be eliminated. The analysis of cross-correlation matrix of variables is presented in table 3. According to this result, there is no risk of collinearity in the model, as the highest correlation values do not exceed 40% level.

Table 3: Correlation matrix of variables used in empirical analysis

Variable	ROA	Current ratio	Company size	Asset structure	Growth opportunities	Company's uniqueness	Depreciation allowances
ROA	1	0,3***	0,05	-0,11***	0,34***	-0,03	0,14***
Current ratio	0,3***	1	-0,29***	-0,37***	0,12***	-0,07*	0,04
Company size	0,05	-0,29***	1	0,28***	-0,1**	0	-0,12***
Asset structure	-0,11***	-0,37***	0,28***	1	-0,09**	0,03	-0,05
Growth opportunities	0,34***	0,12***	-0,1**	-0,09**	1	0,02	0
Company's uniqueness	-0,03	-0,07*	0	0,03	0,02	1	0,02
Depreciation allowances	0,14***	0,04	-0,12***	-0,05	0	0,02	1

Note: * if $p < 0.1$; ** if $p < 0.05$; *** if $p < 0.01$

Source: Own elaboration

Almost all considered variables did not pass the normality tests. This revealed that the correlation should not be tested by application of Pearson's correlation coefficient. To check the correlation in such case, the Spearman's rank correlation coefficient analysis is recommended. The results of this analysis are presented in table 4. The highest values were observed for: current ratio, ROA, fixed assets to total assets, IFRS and the size of the company. Current ratio coefficient at level -0,62 indicates moderate relationship between this variable and capital structure. Coefficients for ROA, fixed assets to total assets, IFRS and the size of company (natural logarithm of total assets) point out a weak relationship. Coefficients for company's uniqueness, depreciation allowances and growth opportunities are below 0,1. This denotes a lack of relationship between variables. Based on these results, the highlighted variables, with the highest correlation coefficients, were chosen for the further analysis. Current ratio and ROA have the greatest influence on capital structure. The correlation is negative, which implies that if these two variables increase, capital structure decreases. The only positive correlation occurs between the size of the company and capital structure. When the company increases its assets, a capital structure variable also rises. This implies the trend among production companies to extend their assets through borrowed capital.

Table 4. Correlation between explanatory variables and dependent variable

Variable	Spearman's rank correlation coefficient
Current ratio	-0,62***
ROA	-0,28***
Asset structure	-0,17***
IFRS	-0,14***
Company size	0,12***
Company's uniqueness	0,07*
Depreciation allowances	0,03
Growth opportunities	-0,02

Note: * if $p < 0.1$; ** if $p < 0.05$; *** if $p < 0.01$

Source: Own elaboration

5.2 Regression analysis

The sample that is the subject of investigation is based on panel data. Cross-sectional data for 124 companies is taken into the consideration in the time series. In order to build an adequate regression model it needs to be recognized whether it only explains variables or whether it explains other individual characteristic for each company, that could influence the dependent variable. At the first stage of regression analysis it is assumed that within the investigated sample such individual effects do not exist. Considering the panel structure of data, the pooled OLS model is applied. At the next stage all model assumptions, without which it is not possible to adjust the model, are being checked. To adjust this model a Robust HAC standard errors estimator is used. The results are presented in table 5. The results were submitted to statistical analysis using the Student t-test. P values for all variables are small; therefore they are statistically significant at the level of 1%. To validate if the pooled OLS model is adequate a Breusch-Pagan and F-test is conducted. The high p-value for both tests counts against the null hypothesis that the pooled OLS model is adequate. This confirms that the estimated model is correct and there is no need to apply more advanced models.

Table 5. Results of the estimation of parameters using Robust HAC standard errors estimator

Variable	Coefficient	p value	Statistical significance
Constant	0,440010	1,79e-12	<0,01
IFRS	-0,0887204	5,94e-05	<0,01
ROA	-0,505211	1,29e-09	<0,01
Current ratio	-0,0247494	5,75e-07	<0,01
Company size	0,0247181	3,95e-08	<0,01
Asset structure	-0,333614	1.26e-025	<0,01
R²	0,379840		
Adjusted R²	0,374790		
Breusch-Pagan test	LM = 1.54521		
	prob. (chi-square(1) > 1.54521) = 0.213844		
F-test	F(123, 491) = 0.860279		
	prob. > F = 0.843737		

Source: Own elaboration

Based on the results in table 5, for analyzed companies the change in capital structure is explained by IFRS, ROA, current ratio, the size of the company and its asset structure. The adjusted R² coefficient at the level of 0,37479 indicates that the model explains 37% variation of the dependent variable. The more detailed analysis of the regression coefficient revealed that there exists a negative correlation between IFRS variable and the share of borrowed capital in company's capital structure. This means that if the company applies this accounting standards the level of capital structure decreases. Moreover, there exists a negative correlation between profitability and the share of borrowed capital in capital structure. If ROA increases the share of debt in the value of balance sheet sum decreases.⁴ There exists also a negative correlation between liquidity and the share of borrowed capital in

⁴ Similar results: A. Ghosh, F. Cai, W. Li, *The Determinants of Capital Structure*, „American Business Review” 2000, Vol. 18, p. 129 – 132; P. Bauer, *Capital Structure Puzzle: Empirical Evidence from Visegrad Countries*, Faculty of Social Science, Charles University in Prague, dissertation thesis, 2004; S. Akhtar, B. Oliver *Determinants of Capital Structure for Japanese Multinational and Domestic Corporations*, “International Review of Finance” 2009, Vol. 9, no. 1–2, p. 1–26.

company's capital structure. When current ratio increases, the level of capital structure decreases.⁵ Furthermore, there is a positive link between the size of the company and the share of borrowed capital in company's capital structure. With an increase in the company's size, the level of capital structure also increases.⁶ Regression analysis also revealed a negative correlation between the level of fixed assets in relation to total assets and the share of borrowed capital in company's capital structure. If the level of fixed assets to total assets increases, the level of capital structure decreases.⁷

6. CONCLUSION

The analysis of descriptive statistic revealed that in the investigated time period Polish production companies depend more on their own equity rather than on the borrowed capital. Manufacturing companies are characterized by high participation of fixed capital in their capital structure and this is also confirmed by the descriptive analysis. The applied statistical methods and their results verify whether given capital structure determinants have an influence on investigated dependent variable. The correlation and regression analysis confirm that the following variables have statistically significant influence on the level of capital structure of companies from Polish production sector: current ratio, ROA, asset structure, IFRS and the size of the company. The adjusted R^2 coefficient at the level of 0,37479 indicates that the model explains in relatively high degree (37%) the variation of the dependent variable.

Capital structure determinants of Polish production companies that prove the strongest relationship with the dependent variable are current assets and ROA. Current assets negatively affect the level of capital structure. Such a result implies that companies with higher liquidity do not necessarily increase their liabilities against creditors. However, it is not supported by the international literature and it is inconsistent with the assumptions of the pecking order theory mentioned before. The negative correlation between ROA and the level of indebtedness is reflected in the pecking order theory, which asserts that more profitable companies do not have the need to borrow larger amounts of money as they can make use of their own equity. Also the negative correlation is observed between the assets structure and the level of indebtedness. The literature does not bring an unambiguous direction of the correlation. This results supports the thesis that high level of fixed assets in the company decreases the asymmetric information and this encourages to gain capital from their own resources rather than from the borrowed capital. The negative correlation between the IFRS variable and the level of capital structure also was found. However, the impact of applied accounting standards and differences in the financial results has not been proved in the literature before. The only positive correlation is observed for company size. This indicates that, the company enlarges its assets using borrowed capital.

Future studies should be extended to companies from further CEE countries. Furthermore, a compulsory and voluntary application of IFRS rules could be separated. Very interesting addition to the analysis of dependency between the accounting standards and the level of indebtedness could be an evaluation of the influence of GAAP rules on the company structure.

⁵ Compare: E. Morellec, *Asset Liquidity, Capital Structure, and Secured Debt*, „Journal of Financial Economics”, 2001, Vol. 61(2), p. 173–206.

⁶ Similar results: S. Akhtar, B. Oliver *Determinants of Capital Structure for Japanese Multinational and Domestic Corporations*, „International Review of Finance” 2009, Vol. 9, no. 1–2, p. 1–26; P. Bauer, *Capital Structure Puzzle: Empirical Evidence from Visegrad Countries*, Faculty of Social Science, Charles University in Prague, dissertation thesis, 2004, opposite results: M. Qiu, L. Bo, *Firm Characteristics as Determinants of Capital Structures in Australia International*, „Journal of the Economics of Business” 2010, Vol. 17, 3, p. 277–287; K. Nunkooa, A. Boateng, *The Empirical Determinants of Target Capital Structure and Adjustment to Long-run Target: Evidence from Canadian Firms*, „Applied Economics Letters” 2010, Vol. 17, p. 983–990.

⁷ Opposite results: A. Ghosh, F. Cai, W. Li, *The Determinants of Capital Structure*, „American Business Review” 2000, Vol. 18, p. 129 – 132; B. Fattouh, L. Harris, P. Scaramozzino, *Non-linearity in the Determinants of Capital Structure: Evidence from UK Firms*, „Empirical Economics” 2008, Vol. 34, p. 417–438.

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IFRS

ACCOUNTING INFORMATION COMPARABILITY ACROSS THE COUNTRIES PRESCRIBING IFRS

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Abstract

Objectives and research questions: One of the IFRS framework's enhancing qualities is comparability of financial information from companies across countries around the globe¹. But due to cultural differences it is questionable if usage and adaption of IFRS prescriptions is the same everywhere. And consequently the comparability of the accounting information provided by the companies is affected by these cultural differences.

Data and methods: From the global ORBIS-database, we selected all listed non-financial and non-insurance companies which left us with more than 22 thousand companies from 95 different countries. Based on available information from PWC and supplementary sources on the worldwide present status (December 2016) on the use and implementation of IFRS, we established a categorisation of each country's accounting regime reflecting if IFRS is mandatory, allowed, or disallowed for listed companies in the country. For our categorisation of cultural differences we used Hofstede's cultural indexes adapted to accounting setting in accordance with Gray and Radebaugh^{2,3}. For our comparisons and analyses we chose five performance measures ROA, Earnings Margin, Tobin's Q, and two Enterprise Value multiples since these financial ratios serve as well-defined and commonly used operational profitability accounting measures.

Results: The set of uniform standards impacts differently in different countries due to differences in tradition and culture, and as a consequence, the prescribed uniform accounting standards seems to be a short-cut into producing comparable annual reports across culturally different countries in the European Union, and globally.

Keywords: Financial Accounting information, IFRS, Hofstede cultural indexes, Accounting Regulations, Comparability

JEL Classification: G15, G38, M40, M41, M48

1. INTRODUCTION

One of the objectives of using the IFRS framework throughout the world is to facilitate a more transparent comparability of the financial information presented by the companies. But do we use the IFRS principles in the same way everywhere? Does it make sense to prescribe some accounting practice such as references to the process or input part of producing accounting information when the alleged aim is to ensure comparability of the provided accounting information, i.e. the financial statements or the output part? Is it adequate to achieve the goal?

One of the key elements which could make disturbances is culture. Hofstede (2001) make convincing and severe documentation that people are organised and do things and think differently in different countries (and regions) as summarized and documented in his well-known cultural indices. Based on this knowledge on cultural differences, already Gray (1988) maps the indicators into accounting systems, hypothesizing how cultural differences affects accounting practice and systems. Additionally, Nobes (1998) claims that also national legal systems and capital markets should be considered in this comparison.

¹ The Conceptual Framework for Financial Reporting 2015.

² Hofstede, G. (2001): Culture's consequences: comparing values, behaviours, institutions, and organisations across nations, 2nd ed., Sage Publications.

³ Radebaugh, L.H., Gray, S.J. and Black, E.L. (2006): International accounting and multinational enterprises, 6th ed., Wiley.

Actually, in Ball (2006) a deep concern that substantial difference among countries in IFRS implementation now risk being concealed by a veneer of uniformity is presented. According to Ball (2006) the notion that uniform standards alone will produce uniform financial reporting seems at best naïve. IFRS advocates typically take the case for mandatory uniform accounting standards as self-evident. But the case for imposing accounting uniformity by fiat is *far from clear and calls for background analysis* of the economic role of mandatory accounting standards.

According to DeFranco *et al.* (2011), the same economic income and value should ideally reflect the same return statistics. And when corrected for industry characteristics and regional competition effects, comparability will be found as the quality of information that enables users to identify similarities and differences between two sets of economic phenomena because the financial statements are reflections of economic events by a function, and the function represents the accounting system of the company. If we correct the economic performance on a company level with observable industry and country differences the economic performance should be expected to be homogenous globally, i.e. a (normal?) distribution around the average where the variation reflect differences in management skills and efficiency, composition and skills of employees, etc. However, if companies' reports come from different accounting regimes it is likely that the different standards influence on the presented financial measures in a way where after they are not comparable. But will this be enough? Presumably we agree in praxis that other issues also have influence. In other words, any Accounting Regime (GAAP) should be expected to be implemented differently in different regions and countries. DeFranco *et al.* (2011) focus on capturing the notion of financial statement comparability based on the idea that the accounting system is mapping from economic events to financial statements. And in accordance with the Hofstede-Gray model and the Nobes points-of-view, this would indeed lead to true comparability if also their disturbing point were corrected.

Among others, Yip and Young (2012) state that globalisation in the last decades has significantly increased the economic interaction among countries, which in turn has created a demand for more internationally comparable accounting information. There are several potential benefits associated with enhanced information comparability. For example, both the FASB and IASB argue that more comparable information enables global markets to operate with less friction. And according to Yip & Young, even much older studies suggest that higher information comparability facilitates international transactions and minimises exchange costs.

The remainder of the paper is structured in the following way. In section 2 we provide the motivation and literature review for the study by examining literature on the IFRS implementation procedure, the cultural aspects, and especially addressing the comparison challenge, and we develop our hypotheses. In section 3 we describe the research design and the data collection procedure. In section 4 we present the findings and discuss some implications. Finally we conclude the paper in section 5.

2. MOTIVATION, LITERATURE REVIEW AND HYPOTHESES

According to the IASB framework (2015), comparability is one of the enhancing qualitative characteristics of financial information. Comparability enables users to identify similarities and differences among items, both between different periods within a set of financial statements, and across different reporting entities. Consistent application of methods to prepare financial statements helps to achieve comparability. In the IASB framework, and also in the 2015 exposure draft, comparability is addressed in par. 2.23–2.28. In 2.25, it is said that “Comparability is the goal: consistency helps to achieve that goal”; and in 2.26 – “Comparability is not uniformity”; and in 2.28 “Although a single economic phenomenon can be faithfully represented in multiply ways, permitting alternative accounting methods for the same economic phenomenon diminishes

comparability”⁴. According to DeFond *et al.* (2011) proponents of mandatory IFRS adoption argue that increased uniformity improves financial statement comparability and thus argue that increased comparability is the desired outcome of an adoption of a uniform set of accounting standards such as the IFRS since it attracts greater cross-border investments. However, requiring companies to use a set of uniform accounting standards does not necessarily result in improved comparability (IASB, 2015, par. 2.26). The proponents of the conceptual framework argue that a uniform set of standards increases comparability when it is faithfully applied (i.e. credibly implemented and resulting in an increase in uniformity). A universal financial language offers many advantages. Cross-border businesses benefit from reduced preparation costs and cross-border trading in securities increases as international investors can more easily compare the performance of companies based in different countries. It is also argued that this results in increased market efficiency and in a reduction in the cost of raising capital for companies, which ultimately helps to boost growth.

In the context of accounting standards, comparability refers to the ability to use accounting data to draw valid inferences about *similarities* and *differences* not only between entities but also for the same entity over time and thus improved comparability of financial statements is often an alleged benefit of adopting IFRS. Since comparability is neither a well-defined concept nor a directly measurable phenomenon there has been plenty of room for researchers to employ a variety of methods to try to measure it, and to assess whether it has changed before/after 2005. One fundamental question which has been addressed is whether the IFRS standards have changed the information that is available to market participants in a beneficial way, i.e. are the markets more efficient when IFRSs are used? The basic presumption is that the IFRS information provided by companies to market participants may differ significantly from information based on prior national GAAP due to differences between requirements of national standards and the IFRS standards. Many studies have therefore compared the pre-IFRS and the post-IFRS scenarios, i.e. compared the present situation with the past situation, and compared the findings to the anticipated results of the change. Some studies gather evidence about changes in market liquidity and companies’ cost of capital as a way of measuring the impact of IFRS. In one of the first large scale studies of companies adopting IFRS in a mandatory setting, Daske *et al.* (2008) conclude that market liquidity increases following IFRS introduction. They also find evidence of a decrease in the companies’ cost of capital and an increase in equity value prior to the official adoption date. In a related study, Daske *et al.* (2013) found benefits such as improved liquidity and lower cost of capital to be more likely for companies that are “serious” adopters of IFRS as opposed to “label” adopters (defined as companies with a commitment to transparency). The success of common standards depends not just on the quality of the standards issued by the IASB, but it also required an infrastructure to support IFRS at the national and international level. Using data relating to the post 2005 adoption period, many researchers have concluded that the setting in which IFRS reporting takes place has a strong influence on whether potential benefits of IFRS can be realised (Daske *et al.* 2008 and 2013; Beuselinck *et al.* 2010; Christensen *et al.* 2012).

Analysing accounting quality, earnings smoothing and accrual quality and timeliness (which are all potential sources of comparability), Barth *et al.* (2012) found evidence of an increase in the comparability after the companies adopted IFRS. They also found that comparability varied in the post-adoption sample, and that the adoption of IFRS improved the comparability of a company’s results with the US companies that report under US GAAP, although differences remained. An alternative benchmark is to use stock price as the object of comparison; that is to predict stock prices using accounting variables prepared previously under domestic GAAP and subsequently under IFRS, and then to examine the differences in the pricing errors. The adoption of IFRS in Australia and Europe has been investigated along these lines using the 2004 annual reports as “pre-IFRS data” compared to the 2005 annual reports including “restated to post-IFRS data”. At least for 2004 the comparison showed that IFRS improved the comparability of the accounting information

⁴ In accounting text books, regulatory pronouncements and academic research the term comparability is defined in broad generalities rather than precisely.

for companies with headquarters in common law and code law countries so much that post-IFRS pricing errors could no longer be explained by legal origin (Clarkson *et al.* 2011).

In 2015 the British organisation ICAEW assembled and presented a review of empirical research on the effect of mandatory IFRS adoption in the European Union under the headline “Information for better markets” (ICAEW, 2015). Overall the results of the studies in their review are mixed, for reasons that are not obvious, but on balance they appear to support the view that mandatory IFRS adoption in the EU improved comparability, at least among adopters. But while the majority of the reviewed papers find evidence of improved comparability, some do not. As opponent, Shyam Sunder (2011) points out that there can never be perfect comparability in financial reporting and argues that “the application of IFRS across national jurisdictions has not been, and is unlikely to be, uniform, nor is it likely to generate comparability”. Indeed, as IFRS allows choices on a number of accounting issues, incomplete comparability is inevitable unless all companies make identical choices and judgements, which seem unlikely, and in general there seems to be found evidence of incomplete comparability following the mandatory adoption of IFRS in the EU. On balance, this is because IFRS allows choices; complete comparability is therefore not to be expected.

Although the benefits from harmonisation are claimed to be plentiful (Brown, 2011), most of the key practical tasks have so far been how to measure (increased) comparability. The recent convergence of global accounting standards has motivated an interest in research that examines comparability more directly on the output part. But still, in accordance with Yip and Young (2012), the effect of IFRS adoption on cross-country information comparability is often examined in a pre- vs. post-IFRS study. The purpose of their study is to provide more empirical evidence on this issue by using three proxies, the similarity of accounting functions that translate economic events into accounting data, the degree of information transfer and the similarity of the information content of earnings and of the book value of equity – to measure information comparability. The results suggest that mandatory IFRS adoption improves cross-country information comparability by making similar things look more alike without making different things look less different.

According to Nobes (1998) among other factors, it is without doubt that culture can be seen as one of the key background factors leading to more direct causes of accounting differences. According to Nobes (1998), also in particular the legal system as well as the capital market is two institutional key elements with high influence on how the accounting discipline and system is developed in a particular country. Violet (1983) argued that accounting as such is a ‘socio-technological activity’ that involved interaction between both human and non-human resources. Violet was one of the first to claim that accounting cannot be considered culture-free. As such, culture may be a very useful factor when comparing available accounting information and the different approaches, practices, and audit behaviour related to the production of this information.

Hofstede (2001) has defined culture as ‘the collective programming of the mind which distinguishes the members of one human group from another.’ Using responses to an attitude survey of IBM employees worldwide, Hofstede originally identified four cultural dimensions around the world, Power distance, Individualism, Masculinity, and Uncertainty avoidance; but later a fifth, Long-term orientation, was added (Hofstede, 2001). *Power distance* refers to the extent to which hierarchy and unequal power distribution in institutions and organizations are accepted. *Individualism* refers to a preference for a loosely knit social fabric rather than a tightly knit social fabric (collectivism). *Masculinity* refers to an emphasis on traditional masculine values of performance and achievement rather than feminine values of relationships, caring and nurturing. *Uncertainty avoidance* refers to the degree to which individuals feel uncomfortable with uncertainty and ambiguity. Long-term orientation refers to the preference of fostering of virtues oriented towards future rewards, in particular perseverance and thrift.

From a review of accounting literature and practice, Gray (1988) initially identified four widely recognized accounting values that can be used to define a country’s accounting subculture: Professionalism, Uniformity, Conservatism, and Secrecy. Later, when Hofstede (2001) had added

his fifth dimension, Radebaugh et al (2006) extended Gray's original description of these four accounting values making references to Hofstede's five cultural values as follows:

- Professionalism shows a preference for the exercise of individual professional judgement and the maintenance of professional self-regulation as opposed to compliance with prescriptive legal requirements and statutory control. The higher a country scores in terms of Individualism and Masculinity, and the lower it scores in terms of Uncertainty Avoidance and Power Distance, the more likely it is to be categorised highly in terms of *Professionalism*.
- Uniformity shows a preference for the enforcement of uniform accounting practices between companies and for the consistent use of such practices over time as opposed to flexibility in accordance with the perceived circumstances of individual companies. The higher a country scores in terms of Uncertainty Avoidance and Power Distance and the lower it scores in terms of Individualism, the more likely it is to be categorised highly in terms of *Uniformity*.
- Conservatism shows a preference for a cautious approach to measurement so as to cope with the uncertainty of future events as opposed to a more optimistic, laissez-faire, risk-taking approach. The higher a country scores in terms of Uncertainty Avoidance and Long Term Orientation and the lower it scores in terms of Individualism and Masculinity, the more likely it is to be categorised highly in terms of *Conservatism*.
- Secrecy shows a preference for confidentiality and the restriction of disclosure of information about the business only to those who are closely involved with its management and financing as opposed to a more transparent, open, and publicly accountable approach. The higher a country scores in terms of Uncertainty Avoidance, Long Term Orientation and Power Distance and the lower it scores in terms of Individualism and Masculinity, the more likely it is to be categorised highly in terms of *Secrecy*.

All these four claimed relationships are also presented in brief below in Table 1. It is important to be aware of the fact that what is dealt with here is only indicators and their relative influence on each other, while the absolute relations were not considered originally.

Table 1. The general linkage between Hofstede and Gray

Cultural values (from Hofstede)	Accounting values (from Gray)			
	Professionalism	Uniformity	Conservatism	Secrecy
Power Distance (PDI)	+	+++	++	+++
Individualism (IDV)	+++	+	+	+
Masculinity (MAS)	+++	++	+	+
Uncertainty Avoidance (UAI)	+	+++	+++	+++
Long-Term Orientation (LTO)	+	++	+++	+++

Note: '+++' indicate a strong relationship; '++' indicate a less strong relationship; and '+' indicate a weak relationship.

As described above, each accounting value is a summative combination of the Hofstede cultural dimensions. More specifically, the scores for the cultural dimensions in Table 1 that comprise each of the accounting values are added together to create a single score for each of the four accounting values by use of an have applied a weighting system based on the accounting values literature to the quantification process. Gray (1988), Radebaugh et al. (2006) used the terms strong, less strong, and weak to describe the relationships between the cultural dimensions and the accounting values. In order to facilitate a weighted combination of the multiple items comprising an accounting value, this is translated into a weight of four, two, and one for strong, less strong, and weak, respectively. In other words, a relationship described as less strong carries twice the effect in our weighting method as a relationship described as weak, and similarly a relationship described as strong carries

twice the effect of a relationship described as less strong. This weighting method is straightforward and considers the varying strengths of the relationships described by Gray (1988) and Radebaugh et al. (2006), and it is used for our adjustment for cultural influence on the accounting data.

There have been several contributions in the literature attempting to extend or refine the Hofstede-Gray setting in understanding the influence of culture on accounting. Perera (1989), as one of the first to try to test the Gray-hypotheses, provides additional discussion in respect of the relationship summarized of the above Table 1 and considered both Hofstede's cultural dimensions and Gray's accounting sub cultural value dimensions and uses them to explain apparent differences in accounting practices adopted in continental European countries and Anglo-American countries. Already Chanchani and MacGregor (1999) examined the literature focused on the conceptual and theoretical issues of the Hofstede-Gray model, while Duopnik and Tsakumis (2004) investigated the literature concerning the empirical testing of the theory relating culture to global diversity in financial reporting. Duopnik and Tsakumis (2004) attempted to determine whether the Gray (1988) framework had been subjected to adequate empirical inquiry so as to prove its validity, and summarised the research methodologies employed to test the theory.

The Hofstede-Gray model setting has also been subject to some criticism. McSweeney (2002) claimed that the Hofstede model as the starting-point suffered from five issues related to crucial methodological assumptions, all questionable. For instance: The people surveyed were similar in every respect other than their nationality, since they were all sales, project or marketing people employed by IBM for which reason they cannot in any way be claimed to be representative for the specific country's culture as such, and consequently the causality relating the results to country differences as such can be questioned. And because of this severe violation of one of the key assumptions, McSweeney claimed that the whole study can be questioned. Baskerville (2003) questions the use of national country-wise cultural indices misleading to a dependence on cultural indices as an explanatory variable of differences in accounting practices and behaviour, due to alleged problems in the assumption of equating nation with culture; the difficulties of and limitations on a quantification of culture represented by cultural dimensions and matrices; and the status of the observer outside the culture. However, as Joannides *et al.* (2012) indicate, also the critiques on the Hofstede-Gray setting can be questioned – and as a consequence we choose to make use of the setting as originally presented for our purpose here, just taking note of the criticism.

The focus of the present study is on the output part, i.e. where we only focus on the available outcomes to see if we have comparable financial statements irrespective of the reasons given for implementing the IFRS framework in large parts of the world. Based on more than 22,400 listed companies worldwide we investigate whether accounting information from the financial statements is comparable across industries, countries, and cultures.

Basically, we rely on the general economic assumption that it will not be possible to maintain higher or lower average levels and variation of performance in selected countries in our globalised world in the very long run. But since this could be the case in a shorter run, we adjust our estimated performance by “observed” differences in expected overall business performance in countries by officially published notions on country “performance” in The Global Competitiveness Report 2015-2016 from World Economic Forum, see Schwab (2016). Additionally, to make the comparison fair we correct the observable accounting information by observable differences in coherent business performance in different industries across different accounting regimes.

For our analyses we concentrate on five classic performance-related financial accounting based ratios: the Return On Assets, the Earnings Margin, the Earnings vs. Enterprise Value, the Sales vs. Enterprise Value; and Tobin's Q. All these five financial ratios serve as well-defined, fair and commonly used accounting based evaluation measures of company business performance. Concerning the sizes of all these measures, the actual observable accounting figures must be a function of Industry; Economic climate (at country-level); Culture; Accounting Regime; Management; and Noise. At first we deal with the performance measures as they are. Hereafter the parts, Industry and Country's Economic climate influence is removed. Then the Culture influence in accordance with the Hofstede-Gray setting is removed. And last the two previous, Industry and

Country's Economic climate – and Culture, are removed simultaneously. Hereafter, only differences due to Management's influence, Noise and Accounting Regime remain.

We use two steps in our study to challenge the comparability between observed performances in different companies, industries, countries, cultures and accounting regimes. In the first step we look at all our selected companies grouped according to different accounting regimes, and afterwards we look at the selected companies per accounting regime. Across the four accounting regimes, we expect financial ratios to be affected by differences in accounting regime like different prescribed treatment of R&D or goodwill in IFRS-GAAP, and non-IFRS GAAP. This expectation should be quite intuitive since if this was not the case, there would be no real arguments for changing local-GAAP to IFRS and the US-GAAP / IFRS convergence project would be unnecessary. More formally stated for the first step, we hypothesize that:

- **H_{1a}:** The observable financial performance ratio level will be different across different accounting regimes, (i.e. IFRS as published by IASB, as adopted by EU, as adopted locally (incomplete or allowed), and disallowed.)
- **H_{1b}:** The observable financial performance ratio level will be different across different accounting regimes, but it will be less different if ratios are adjusted by differences in industries and country-level Economic climate. And after taking the Economic climate and Industry influence out of the numbers, the variation is expected to be reduced.
- **H_{1c}:** The observable financial performance ratio level will be different across different accounting regimes, (i.e. IFRS as published by IASB, as adopted by EU, as adopted locally (incomplete or allowed) or not allowed), but it will be less different if the financial ratios are adjusted for cultural differences, as expressed in the Hofstede-Gray setting relations. And after taking the cultural influence out of the numbers, the variation is expected to be less different.
- **H_{1d}:** The observable financial performance ratio level will be different across different accounting regimes. And when adjusted simultaneously for Industry and Economic climate, and Culture, the differences in levels will be even smaller, while the total variation is expected to be increased. And after taking the cultural influence out of the numbers, the variation is expected to be less different.

In the last step we focus on the IFRS-part of the world, since the eventual comparability status for the group of IFRS Allowed respectively IFRS Disallowed is beyond the scope here. Since one of the alleged benefits as discussed earlier is to increase the comparability in companies using IFRS across different industries, regions and countries, we challenge this assumption by expecting the financial performance ratios level among the companies that are required to use IFRS to be (on average) on the same level, and quite precise (small variation), as an indication of high comparability. Especially the EU has repeatedly claimed that the implementation of the uniform set of IAS/IFRS-standards is necessary in order to increase the comparability of financial accounting information in the European Union, and it is even so important for the EU that they have made a specific IFRS-approval system. We therefore split the IFRS part of the world into EU and non-EU countries. In each of these two groups we challenge the assumption that the use of uniform IFRS ensures comparability among the companies in different countries. We do so by expecting the financial performance ratios for the listed companies required to use IFRS to be at the same levels (on average) when effects from Industry, Economic climate, and Culture are adjusted for.

The second set of hypotheses handles the dataset in four parts – one per Accounting Regime. More formally stated we hypothesize that:

- **H_{2a}:** The observable financial performance ratio level will be small across different countries in the two groups, IASB and EU, where use of IFRS is mandatory. This is opposite to the IFRS-Allowed group where it could be expected that the observable financial performance ratio level across countries will be less different than in the mandatory IASB and EU groups, in the IFRS-Disallowed group the level across countries is expected to be even smaller.

- **H_{2b}:** The observable financial performance ratio level will be smaller and more precise (smaller variation) when the ratios are adjusted for differences in Industry and country-level Economic climate across different countries in the two groups, IASB and EU, where use of IFRS is mandatory.
- **H_{2c}:** The observable financial performance ratio level will be larger across countries when the ratios are adjusted for differences in Culture as expressed in the Hofstede-Gray setting relations across different countries in the two groups, IASB and EU, where use of IFRS is mandatory. And the variation will be larger reflecting the cultural influence has been taken out.
- **H_{2a}:** The observable financial performance ratio level will be less different in the two groups, mandatory IASB and EU. The combined effect is unclear, compared to starting point but might be closer to H_{2c} than H_{2b}, since the cultural effect could easily end up having larger effect than the effect from Industry and Economic climate.

3. DATA SELECTION AND RESEARCH DESIGN

In this section we first describe the sampling of the overall dataset, i.e. how we ended up with at a global company sample of 22,445 observations, which will be the basis for our efforts in answering the research questions.

From the global ORBIS-database, we selected during May 2016 all listed non-financial and non-insurance companies, which left us with more than 40 thousand public accounts from more than 95 different countries from all over the world, and from 46 different industries using the Fama-French classification.

Based on available information from mainly PriceWaterhouseCoopers' publication (2015) on IFRS adoption by country and on some additional information retrieved from IAS Plus (www.iasplus.com) dealing with providing overview of present (December 2016) status worldwide for the use and implementation of IFRS, we established a categorisation of each country's accounting regime: is IFRS *required* or *permitted* or not allowed for listed companies in the country and we also looked at the relevant "version" of IFRS being used. This allowed a classification of the countries into four groups: (i) Mandatory IFRS (as prescribed by the IASB); (ii) Mandatory EU (as published by IASB and accepted by the EU); (iii) Allowed (as adapted locally or simply just permitted); and (iv) Disallowed (since other GAAP is prescribed).

Since the Hofstede cultural indicators (PDI, IDV, MAS, UAI, and LTO) unfortunately are not available for all countries in the World, we deselected the companies from those quite few countries where no calculated Hofstede indicators were found (via his website on April 18th, 2016).

Additionally we requested data from at least 5 companies to be available in each country, since fewer would make it difficult to argue that they could indicate a country level. Actually, for basic statistical reasons we would have preferred a larger number (say 50) as a minimum target. However, this would reduce the number of participating countries by 54, i.e. more than half of the countries and thus it would have dramatic consequences for the number of countries in the study, for which reason we decided to keep the 5 company target in the study.

Because full-data was requested for calculating the relevant performance ratios, companies with negative equity, or simply just incomplete datasets were deleted and the remaining result was 22,445 valid companies from 95 different countries. This complete sample of observations, split into four subgroups disentangling the IFRS-status, i.e. the accounting regime per country is shown in Table 2.

Table 2. Accounting Regimes for listed companies – Number of companies and countries

Version Rules	As published by the IASB	Standards adopted by the EU	Allowed: As adopted locally	Disallowed: Not Applicable	Total
Companies	3,110	3,282	8,949	7,104	22,445
Countries	29	31	23	12	95

During our analyses of performance measures, we make three structured adjustments to the dataset. But before that, as it is quite common in many empirical studies using financial ratios, we deal with extreme cases by winsorizing (1 per cent) the dataset. Winsorizing the data involves replacing outliers with the next highest score which is not an outlier.

First, we adjust the observable financial ratios by the Fama-French industry grouping, since a company's business performance is quite dependent on the industry in which the company takes part and since the composition of industries is different in different countries. Second, we correct the observed data by the present country Economic (business) climate by using the relevant World Economic Reviews' well-known metrics. Third, we correct the data by the Hofstede-Gray setting by country and culture characteristics level indicator relation, reflecting the cultural influence on the accounting financial ratio numbers using the 1-2-4 weighting of the Hofstede cultural values into the Gray accounting values.

Hereafter one-way ANOVA is used to perform tests in accordance with the presented two sets of hypotheses challenging the levels in the different financial ratios, groups and countries. This statistical tool is primarily useful because our expectations heavily draw on the differences in and between the defined groups, i.e. the accounting regimes, respectively the countries. We basically believe that choice of accounting regimes (IFRS, or non-IFRS, local GAAP and cultural/local implementation) does matter when comparing accounting figures. One key issue to be addressed is that although the IFRS prescriptions are standardised, it could be that the different companies handle the regulation differently due to historical or cultural differences in accounting practise and traditions. On the other hand, if the regulative setting is not able to capture these issues, the output numbers cannot be expected to be comparable. And if that is the case, then the system could be said to have failed – at least concerning this task. If this assumption is fulfilled we can proceed and challenge the IFRS-part of the world. If our numbers are comparable, the equality or non-equality between averages in different geographical regions; countries; and groups can be analysed.

Additional considerations could be taken into account like management influence, institutional differences, etc. but such issues will be disregarded here

4. FINDINGS AND IMPLICATIONS

In this section we first present some descriptive statistics, which are followed by the results from our ANOVA analyses and the analyses of some of the implications as we see them.

In Table 3 we present key descriptive statistics for our chosen five common performance measures to give an indication of the variation in the sample. As it seems quite clear, our Return on Assets; Earnings Margin; Earnings-Enterprise Value multiple; Sales-Enterprise Value multiple; and Tobin's Q, show some clear differences across the four different accounting regimes as well as for the total sample.

Table 3. Descriptives for selected performance measures

	Complete (all Accounting Regimes)		Accounting Regime IASB Demanded		Accounting Regime EU Demanded		Accounting Regime IASB Allowed		Accounting Regime IASB Disallowed	
Name	Mean	Std.err.	Mean	Std.err.	Mean	Std.err.	Mean	Std.err.	Mean	Std.err.
Return on Assets	0.04322	0.00084	0.03001	0.00222	0.04331	0.00220	0.05090	0.00121	0.03928	0.00165
Earnings Margin	0.04042	0.00291	0.01555	0.00761	0.04848	0.00730	0.05445	0.00436	0.02990	0.00562
Earnings vs. Enterprise Value	0.02361	0.00200	0.00611	0.00598	0.02422	0.00540	0.03969	0.00284	0.01074	0.00375
Sales vs. Enterprise Value	1.49102	0.01355	1.47202	0.03540	1.80908	0.04047	1.60412	0.02012	1.20994	0.02409
Tobin's Q	1.46642	0.01394	1.24580	0.02992	1.19993	0.03142	1.26902	0.02156	1.93480	0.02785
Number of observations	N = 22,445		N = 3,110		N = 3,282		N = 8,949		N = 7,104	

Before proceeding to the conclusions using ANOVA, some comments on the assumptions. ANOVA presumes variance homogeneity which is usually tested by the Levene's test. However, it should be noted that when the sample size is large, small differences in group variances can produce a Levene's test which is significant and there are also some other strong arguments for not using it. But we conclude that the variances are significantly different and that the assumption of homogeneity of variances is violated. Because of this variance homogeneity violation, we perform Welch and Brown-Forsythe tests since these tests handle the variance homogeneity violation (not presented here). However, the results of all our analyses show the Welch-statistics as well as the Brown-Forsythe-statistics at sufficient levels when the appropriate degrees of freedom are taken into account, to leave us with the conclusion of robust equality of the means at any reasonable significance level.

In Table 4 below, we present the main results from our ANOVA analyses of one key performance financial ratio, the ROA, in raw version, Industry and Economic climate adjusted, Culture adjusted; and adjusted simultaneously for Industry, Economic climate and Culture, corresponding to our two sets of hypotheses H_{1a-d} and H_{2a-d} . Although it is clear that many of the F-statistics are significant at any appropriate significance level, it also seems clear that we have differences (F-level = 24.830). First of all, from our table of ANOVA-results it is clear that the first hypothesis H_{1a} is fulfilled; we do have differences. For the second part, our hypothesis H_{1b} is also fulfilled; we do have differences. However, it should be noted that the F-value is much smaller since it is reduced to about two fifths (F-level = 10.589) for the hypothesis H_{1b} related test, if compared to the hypothesis H_{1a} F-levels, which make support for our hypothesis even though we still do not have a significant confirming conclusion, but rather a remarkable changes in F-levels – despite the differences we see unequal levels at any reasonable significance level.

For the third part, our hypothesis H_{1c} is also fulfilled; we do have differences, but at a smaller level than for the non-adjusted data. The reduction in the F-level when the cultural influence is adjusted for indicates that this aspect uses the different Accounting Regimes' prescriptions differently when processing the financial statements (F-level = 12.122). When the two adjustments are made simultaneously in the fourth part the hypothesis H_{1d} is also fulfilled – and the combined adjustments lead to an F-level (F = 4.266), which is smaller than the two former single adjustments in H_{1b} and H_{1c} , indicating that when other common issues than accounting regime are taken out of the numbers, then the differences are much smaller; but still significant across the four accounting regimes (for any $p > 0.005$). Concerning the second set of hypotheses, the total dataset is split into four subparts, one per accounting regime. For our further analyses only the two accounting regimes prescribing IFRS, i.e. Mandatory IASB and Mandatory EU, are of real interest. But for completion, the other two accounting regimes, IFRS allowed and IFRS disallowed, are also presented here in Table 4. From our table of ANOVA results our hypotheses H_{2a-d} must consequently be evaluated per each of the four accounting regimes. For hypotheses H_{2a} we have differences in levels across countries for the accounting regimes Mandatory IASB, IFRS allowed and IFRS disallowed; but for the accounting regime Mandatory EU we do not see differences

between levels of ROA across countries (at any $p < 0.176$). So, as a contrast to the other three groups, in EU we do not observe differences in the ROA-level across countries, reflecting that the comparability seems to be high. However, when the raw numbers are adjusted, our hypotheses H_{2b} and H_{2c} are challenged since all the presented F-levels increase (except hypothesis H_{2c} for accounting regime IFRS allowed). The expected increases for hypothesis H_{2c} oriented F-levels can be observed, while the expected decreases for the H_{2b} oriented F-levels cannot be observed since only small increases are produced. However, for the combined hypothesis, H_{2d} , we see increases in the F-levels except for the accounting regime IFRS allowed, stating that when the observed accounting numbers, and accordingly calculated performance measures, are adjusted for Industry; Economic climate and Culture then the differences between countries are larger for both mandatory IASB and EU. This indicates that for instance in the accounting regime mandatory EU, the prescription of uniform accounting standards is helpful for the comparability, since we probably would see larger differences in the levels across the countries in the EU if we did not have common mandatory accounting standards.

In Table 4 we also present standard errors following each F-level number. These numbers help us in our understanding of the changes and relationships between levels for non-adjusted and adjusted numbers, since the standard error is a measure of the spread for the group of numbers constituting a certain F-level number – in other words, the standard error can be said to reflect the precision. In general, adjusting the performance ratios for Industry and Economic climate reduces the standard errors while adjusting the performance ratios for Culture increases the standard errors, which also is what could be expected, since the differences in economic performance in different industries and countries as well as the differences in culture both help standardising the presented performance numbers per country.

Table 4. ANOVA – Return on Assets

Accounting Regime		Observations	Raw data			Culture adjusted		
			F	(sign)	Std.err.	F	(sign)	Std.err.
ROA	Raw data	22,445	24.830	(.000)	0.00084	12.122	(.000)	0.00154
	Mandatory IASB	3,110	10.213	(.000)	0.00222	31.283	(.000)	0.00330
	Mandatory EU	3,282	1.237	(.176)	0.00210	9.050	(.000)	0.00498
	Allowed	8,949	13.590	(.000)	0.00121	11.659	(.000)	0.00269
	Disallowed	7,104	26.910	(.000)	0.00165	43.102	(.000)	0.00222
ROA	Industry/Economy adjusted	22,445	10.589	(.000)	0.00075	4.266	(.005)	0.00144
	Mandatory IASB	3,110	9.437	(.000)	0.00203	36.915	(.000)	0.00295
	Mandatory EU	3,282	1.424	(.063)	0.00194	9.144	(.000)	0.00420
	Allowed	8,949	17.452	(.000)	0.00116	12.829	(.000)	0.00271
	Disallowed	7,104	31.530	(.000)	0.00136	58.382	(.000)	0.00189

In Table 5, we sum up the F-levels and significance levels related to ANOVA analyses for all our presented hypotheses. The focus in Table 5 is fourfold: The differences in F-levels and variation as per the four sub-hypotheses in the two sets of hypotheses are two focus points, while the five presented performance measures, and the distinction across accounting regimes vs. across countries given mandatory IASB and EU are the two other focus points. To help and guide the reader's interpretation of the many numbers in Table 5 we have included our expected signs for the changes in F-levels and standard errors from non-adjusted to adjusted data as stated in the two sets of hypotheses, H_{1b-d} and H_{2b-d} .

For the performance measure ROA many of the numbers can be recognised from the earlier Table 4. In the first line in Table 5, we present all the relevant results referring to the hypotheses H_{1a-d} , having the levels and variation numbers separated. For the results in this line, all expectations are fulfilled – where an increase is expected, we observe an increase as also discussed previously. The next two lines in Table 5 present all the relevant results referring to the hypotheses H_{2a-d} for the two accounting regimes mandatory IASB and mandatory EU. For the results here, all expectations

are fulfilled for the mandatory IASB accounting regime, while this is not the case for the mandatory EU accounting regime. For the latter we do not observe a decrease in the F-levels when adjusting for Industry and Economic climate, but a small increase as we also saw in Table 4. However, it should be noted that the increase is so small that the F-level is at a size showing continuously no significant difference in the levels for the EU-countries (at significance levels below 0.063). For the other four performance measures, the results are presented in the next lines in Table 5. For the lines per performance measure referring to the hypotheses H_{1a-d} the results are as expected, but concerning the levels for the hypotheses H_{1b} and H_{1c} related adjustments, the subresults behind differ: For ROA, and the Earnings Margin, the Culture adjustments F-level is quite higher than the Industry and Economic climate adjusted level, while it is vice versa for the two multiples and for Tobin's Q, which indicates that for the latter three the cultural effect is not so dominant. All changes due to adjustments in variations are as expected. For the lines referring to the H_{2a-d} hypotheses the results are generally as expected, but as we saw for ROA, most of the other performance measures also have a few cases of levels contrary to expectations. The results also suggest that the EU countries in general are more homogeneous than the group of mandatory non-EU IFRS using countries since the levels here seem to be quite small, indicating no significant difference between countries. However, in most cases when adjusting for Culture, the differences increase, i.e. the F-levels, indicating that the uniform accounting standards has a positive effect on the reporting of financial statements.

Table 5: Multiple comparisons of different F-levels for different selected financial ratios (significance level), and expectations compared to raw data

Table 5: Multiple Comparisons of different F-levels for different selected financial ratios (significance level), and expectations compared to raw data.													
	Levels (F-values)									Variation			
Performance measure Complete or Accounting Regime	Raw data	(Sign)	Ind./Ec. adj. Cult. adj.	(Sign)	[Exp.]	Both adj.	(Sign)	[Exp.]	Raw data	Ind./Ec. adj. Cult. adj.	[Exp.]	Both adj.	[Exp.]
Return on Assets (15)	24.830	(.000)	10.589 12.122	(.000) (.000)	[-] [-]	4.266	(.000)	[-]	0.00084	0.00075 0.00154	[-] [+]	0.00144	[+]
Accounting Regime 1 (IASB)	10.213	(.000)	9.437 31.283	(.000) (.000)	[-] [+]	35.915	(.000)	[?]	0.00222	0.00203 0.00330	[-] [+]	0.00295	[+]
Accounting Regime 2 (EU)	1.237	(.176)	1.424 9.050	(.063) (.000)	[-] [+]	9.144	(.000)	[?]	0.00220	0.00194 0.00498	[-] [+]	0.00420	[+]
Earnings Margin (22)	8.242	(.000)	1.869 5.691	(.132) (.001)	[-] [-]	2.762	(.040)	[-]	0.00291	0.00253 0.00549	[-] [+]	0.00513	[+]
Accounting Regime 1 (IASB)	7.397	(.000)	3.944 8.160	(.000) (.000)	[-] [+]	4.961	(.000)	[?]	0.00761	0.00643 0.01145	[-] [+]	0.00912	[+]
Accounting Regime 2 (EU)	0.912	(.604)	1.137 2.018	(.278) (.001)	[-] [+]	3.052	(.000)	[?]	0.00730	0.00626 0.01196	[-] [+]	0.00925	[+]
Earnings vs. Enterprise Value (19)	16.487	(.000)	5.731 3.496	(.001) (.015)	[-] [-]	0.975	(.403)	[-]	0.00200	0.00179 0.00356	[-] [+]	0.00327	[+]
Accounting Regime 1 (IASB)	12.902	(.000)	9.516 18.843	(.000) (.000)	[-] [+]	16.997	(.000)	[?]	0.00598	0.00538 0.00895	[-] [+]	0.00766	[+]
Accounting Regime 2 (EU)	1.716	(.009)	1.702 0.817	(.001) (.748)	[-] [+]	1.661	(.0013)	[?]	0.00540	0.00490 0.01116	[-] [+]	0.00915	[+]
Sales vs. Enterprise Value (20)	82.525	(.000)	79.841 15.262	(.000) (.000)	[-] [-]	13.767	(.000)	[-]	0.01355	0.01259 0.02363	[-] [+]	0.02286	[+]
Accounting Regime 1 (IASB)	32.785	(.000)	41.994 105.049	(.000) (.000)	[-] [+]	126.675	(.000)	[?]	0.03540	0.03537 0.06263	[-] [+]	0.06439	[+]
Accounting Regime 2 (EU)	4.661	(.000)	6.535 34.619	(.000) (.000)	[-] [+]	42.124	(.000)	[?]	0.04047	0.03676 0.08015	[-] [+]	0.06802	[+]
Tobin's Q (17)	179.228	(.000)	138.226 32.000	(.000) (.000)	[-] [-]	41.080	(.000)	[-]	0.01394	0.01250 0.02839	[-] [+]	0.02681	[+]
Accounting Regime 1 (IASB)	5.307	(.000)	3.672 30.299	(.000) (.000)	[-] [+]	41.433	(.000)	[?]	0.02992	0.02630 0.04040	[-] [+]	0.04031	[+]
Accounting Regime 2 (EU)	6.459	(.000)	3.730 37.110	(.000) (.000)	[-] [+]	35.333	(.000)	[?]	0.03142	0.02629 0.09216	[-] [+]	0.07160	[+]

However, in general the results show a tendency to follow our overall expectations, and hereby support our two sets of hypotheses, H_{1a-d} and H_{2a-d} . Since the observed F-levels for some of the performance ratios for the mandatory EU are still too high to indicate equality, it seems that other factors than culture measured by the Hofstede-Gray setting as such is needed to remove the remaining inequalities between the levels of the accounting financial performance ratios.

5. CONCLUSIONS

To sum up, our overall findings concerning our hypotheses H_{1a-d} are as follows: The ANOVA-analyses lead to the not surprising finding that we do have differences in the different performance ratios level and variation across different accounting regimes using the different F-levels and standard errors as measures for the comparison. For the Industry and Economic climate and Culture adjusted figures we see the same pattern, but at smaller F-level numbers, indicating that the hypotheses are accepted.

Concerning our hypotheses H_{2a-d} we found changes in levels and variation in general as expected in the presented hypotheses. However, it seems that the two groups, mandatory IASB and mandatory EU, shows quite different levels, indicating that for the EU countries these prescribed uniform standards can have had a positive influence on the overall comparability of financial accounting information in the EU.

All these results presented in the present study give support to questioning whether the use of uniformity is a good idea, such as prescribing use of IAS/IFRS standards since this might lead to the alleged comparability in the financial statements. When controlling for differences in Industry performance and country-wise competitive possibilities (Economic climate), our results show that overall complete comparability has not been achieved. We did, however, find that when we take cultural differences between countries into account then the financial statements are relatively more comparable than if we did not. It is striking that even in the EU the cultural factor is of high importance when we examine financial information from companies in different countries, but also very interesting that the EU apparently is succeeding in this process of trying to increase comparability of financial statements information within the EU as part of common market.

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DETERMINANTS OF A VOLUNTARY ADOPTION OF THE INTERNATIONAL FINANCIAL REPORTING STANDARDS, AN OVERVIEW OF THEORETICAL CONSIDERATIONS

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Abstract

The aim of the article was to present the most important internal factors at the level of the entity affecting the voluntary adoption of International Financial Reporting Standards. The essence, importance, origin of International Financial Reporting Standards were presented in the paper. The advantages and disadvantages of applying IFRS were discussed. Attention was paid, among other things, to improve the quality, transparency and disclosures of accounting, but IFRSs are also difficult to be implemented properly and expensive. The determinants of voluntary use of IFRS such as a size of company, a reputable auditor, debt, profitability, growth opportunities, capital intensity, and an international investor, have been characterized. An analysis of factors determining IFRS adoption was carried out on the basis of the literature sources.

Keywords: *accounting harmonization, European Union, International Financial Reporting Standards, microeconomic factors*

1. INTRODUCTION

An attempt to harmonize diversified national accounting standards by implementing the International Financial Reporting Standards is one of the most important revolution in the history of accounting. The International Financial Reporting Standards are a recognized language of the world business. Nowadays, there are used in over 120 states of the world. It is worth noting that a range of their use is diversified. In some states they are obligatory or allowed for all or selected listed companies. For the non-listed enterprises they are usually mandatory, and there is a possibility of their use, and less often their total ban. In some states they are obligatory for all business entities.

An application of IFRS is connected frequently with a series of advantages for the enterprises using them. They include higher quality, transparency and a wider range of disclosures. They have a positive impact on risk of an enterprise, profitability, or the cost of capital. Therefore, it is worth considering what factors of their voluntary application are. In general they can be divided into internal and external ones. In the subject literature, among others, the following internal factors are mentioned: internationality of a company, a size of a firm, reputation of auditing companies, an ownership structure, profitability or indebtedness. Among the external factors the following ones deserve to be mentioned: a development of stock exchanges, a banking sector, legal systems, economic growth, interest rates etc. An aim of this paper is to present the most important internal factors at the level of the entity affecting the voluntary application of International Financial Reporting Standards. The subject of the analysis will be the following internal factors affecting the IFRS adoption: a size of a company, a reputable auditor, debt, profitability, growth opportunities, a capital intensity, an international investor. The factors which are rather seldom dealt with in the subject literature are:

a growth possibility, a capital intensity and an international investor. These factors will be a subject of the analysis on basis of the available literature.

2. GENESIS OF THE INTERNATIONAL FINANCIAL REPORTING STANDARDS

The beginnings of the development of the International Financing Reporting Standards are connected with globalization expansion which falls mainly on the second half of the XX century. Globalization entails both positive and negative implications. The Economic Policy Committee, as an advisory body of the European Committee and Council, responsible, among other things, for preparing economic analyses and methodological opinions, enumerates advantages resulting from the globalization for the European Union in its report, they are mainly:¹

- direct advantages for consumers resulting from the removal of trade barriers, what provides lower prices and increases diversity of products;
- increased efficiency of the European Union owing to greater competition, and globalization give firms new technologies and an opportunity to enter new markets which have been protected so far;
- productivity growth of firms which generate higher income owing to production optimization by off-shoring and economies of scale;
- integration of capital markets which contributed to better allocation of savings in more effective investments;
- direct foreign investments contributing to transfer of modern technologies, know-how, skills and innovations;
- new markets for the firms from the European Union.

The need of developing a standardized accounting system was forced by the development of international enterprises, the development of the world trade, the international capital and financial markets. Individual countries in the world have their own better or worse developed accounting systems which proved to be insufficient, especially, for the entities which want to raise capital outside the domestic capital market, and for the companies which transfer their production to the countries of lower manufacturing cost while diversifying their operations. Discrepancies in the accounting systems of the particular countries rendered comparability of the financial statements of the companies wanting to issue securities on the world stock exchanges.

The accounting systems present in the individual states differ significantly and they impede enterprises to conduct their activity on the international scale. In the world two main models of the financial accounting were formed²:

- the Anglo-Saxon model that is oriented at informative needs of investors and creditors (used in 44 countries, among other things, by Great Britain, the United States and Canada);
- the continental model concerning the countries in which enterprises are strongly linked with banks (it includes 30 countries, such as: Germany, France, Japan, Italy, Spain).

Other accounting systems being present in the subject literature should be also mentioned, it includes the South-American model, used in the countries of South America, and it is similar to the continental model. In the post-communistic countries the accounting model of „the mixed economies” was formed and it refers, first of all, to the continental system, although it uses the solutions of the Anglo-Saxon system and IFRS as well³. One might venture an opinion that other accounting systems present in the world are a derivative of the continental system differing in a degree of centralization of accounting procedures and principles⁴.

¹ *Responding to the challenges of globalisation – 22/11/2005*, Economic Policy Committee, https://europa.eu/epc/publications_en, s. 8, dane: 10.08.2017.

² S. T. Surdykowska, *Rachunkowość międzynarodowa*, Kantor Wydawniczy Zakamycze 1999, p. 70.

³ S. T. Surdykowska, *Rachunkowość...*, *op. cit.*, p. 65.

⁴ S. T. Surdykowska, *Rachunkowość...*, *op. cit.*, p. 70.

Opening of the countries to the international markets forced a trend to harmonize the accounting systems, it is particularly applicable to preparing financial statements according to similar principles, that is largely about qualification of a financial item, its valuation, disclosure and a presentation. It is a very difficult task, because even at the level of the national regulations there are lots of alternative solutions in a scope of qualifying particular balance-sheet items and their valuation. Firms often use simplifications what is connected with lower costs.

Aiming at reducing the differences between the national accounting standards takes place by a process of harmonization and standardization. P. Walton, A. Haller, B. Raffournier⁵ define harmonization as a process reducing differences in the financial reporting. Harmonization is also defined as a process contributing to making accounting principles and regulations comparable in the particular states of the world.⁶ While standardization is defined as use of the same rules⁷. Some are of opinion that successful harmonization may contribute to total standardization⁸. Efforts undertaken to harmonize accounting rules are not able to eliminate completely differences between the national regulations in the particular state. Convergence which requires developing uniform standards with participation of different countries, and then the particular states should adopt their legislation to the international standards, would be a solution to the issues connected with standardization of the accounting systems⁹.

It is aimed at standardizing the accounting systems in order for the capital markets to operate effectively. This process began in year 1973 when the International Accounting Standards Committee was set up in London (IASC). The main IASC tasks were to prepare and publish the International Accounting Standards and supervision over their adherence all over the world¹⁰. Owing to the support of the International Organization of Securities Commissions – IOSCO the International Accounting Standards Committee could extend use of IFRS, because IASC was not entitled to impose an obligation of their use. In 2000 IASC underwent reorganization and changed its name into the International Accounting Standards Board – IASB. An objective of IASB is to establish and develop the International Accounting Standards and provide cohesion between the national accounting standards and IFRS¹¹. In year 2002 the European Council issued regulation no 1606/2002, under which the listed companies preparing consolidated financial statements, admitted to public trading on the regulated markets of the countries of the European Economic Area, were obliged to use IFRS mandatory from 2005.

The International Accounting Standards were adopted within the European Union to a different extent. The obligation of the IFRS application concerned the consolidated financial statements of the listed companies. Whereas for the companies preparing separate financial statements the IFRS application was regulated on the voluntary basis at different countries. The table below presents a scope of applying IFRS in the European Union countries.

⁵ P. Walton, A. Haller, B. Raffournier, *International Accounting*, Cengage Learning EMEA, (Eds.) 2003, p. 9.

⁶ F. M. Timea, A. Po, M. Mureşan, A. Cîrstea, *Harmonisierung der internationalen Rechnungslegungssysteme*, Annals of the University of Oradea, Economic Science Series. 2009, Vol. 18 Issue 3, p. 1212–1217.

⁷ P. Walton, A. Haller, B. Raffournier, *International ...*, *op. cit.*, p. 9.

⁸ K. Grabiński, M. Kędzior, J. Krasodomska, *Globalne uwarunkowania rachunkowości: systemy, procesy, zmiany*, PWE, Warszawa 2013, p. 139.

⁹ F. M. Timea, A. Po, M. Mureşan, A. Cîrstea, *Harmonisierung ...*, *op. cit.*, p. 1212–1217.

¹⁰ R. Ignatowski, *Instytucjonalne uwarunkowania i otoczenie globalnych standardów rachunkowości*. Wydawnictwo Uniwersytetu Łódzkiego 2009, p. 81–82.

¹¹ K. Grabiński, M. Kędzior, J. Krasodomska, *Globalne...*, *op. cit.*, p. 148.

Table 1. A scope of applying IFRS in the public and non-public companies in the UE Member States

State	Public companies		Non-public companies	
	Consolidated statement	Separate statement	Consolidated statement	Separate statement
Austria	Required	Not allowed	Allowed	Not allowed
Belgium	Required	Not allowed	Allowed	Not allowed
Bulgaria	Required	Required	Required	Required
Cyprus	Required	Required	Required	Required
Czech	Required	Required	Allowed	Not allowed
Dania	Required	Allowed	Allowed	Allowed
Estonia	Required	Required	Allowed	Allowed
Finland	Required	Allowed	Allowed	Allowed
France	Required	Not allowed	Allowed	Not allowed
Germany	Required	Allowed	Allowed	Not allowed
Greece	Required	Required	Allowed	Allowed
Hungary	Required	Not allowed	Allowed	Not allowed
Ireland	Required	Allowed	Allowed	Allowed
Italy	Required	Required	Allowed	Allowed
Latvia	Required	Required	Allowed	Allowed
Lithuania	Required	Required	Allowed	Allowed
Luxemburg	Required	Allowed	Allowed	Allowed
Malta	Required	Required	Required	Required
Holland	Required	Allowed	Allowed	Allowed
Poland	Required	Allowed	Not allowed	Not allowed
Portugal	Required	Allowed	Allowed	Not allowed
Romania	Required	Allowed	Allowed	Allowed
Slovakia	Required	Allowed	Required	Allowed
Slovenia	Required	Allowed	Allowed	Allowed
Spain	Required	Not allowed	Allowed	Not allowed
Sweden	Required	Not allowed	Allowed	Not allowed
Great Britain	Required	Allowed	Allowed	Allowed

Source: G. Guggiola G. (2010), *IFRS Adoption In The E.U., Accounting Harmonization and Markets Efficiency: A Review*, „*The International Business & Economics Research Journal*” 2010, Vol. 9, no. 12; <http://www.iasplus.com/en>

From the data presented in the table it results that IFRSs are implemented to a different extent in the area of the European Union. Where the regulations allow standards to be voluntary, very big differences can be noticed in applying IFRS. The countries like Malta, Cyprus and Bulgaria adopted IFRS completely in their legal system. A ready set of accounting standards of high quality (IFRS) may be an advantageous solution, in particular, for the developing countries. It will allow significant savings in a scope of developing and performing numerous control tests of the national accounting standards. From the presented table it results that 14 states permitted to use IFRS in all activity areas, whereas some countries like Poland, Hungary, France etc. take a more rigorous approach to the voluntary IFRS application on the background of other countries of the European Union.

In Poland pursuant to art. 45 of the accounting act the International Financial Reporting Standards can be used on the voluntary basis for¹²:

1. the issuers of securities admitted to public trading or to trading on one of the regulated markets of the countries of the European Economic Area,

¹² Ustawa z dnia 29.09.1994 r. o rachunkowości, art. 45, Dz. U. z 1994 r. nr 121, poz. 591 wraz z póź. zm.

2. issuers of securities requesting for admission to public trading or to trading on one of the regulated markets of the countries of the European Economic Area,
3. the entities constituting a part of the capital group where the parent entity prepares a consolidated financial report according to IFRS,
4. the entities being a branch of a foreign entrepreneur who prepares a consolidated financial report according to IFRS.

3. POSITIVE AND NEGATIVE EFFECTS OF APPLYING IFRS

The IFRS implementation was such a significant difference in the accounting system that from the firms it required lots of changes and adjustments needed to implement them in an appropriate way. The IFRS implementation entails both positive and negative consequences. First of all, it should be considered if the disadvantageous aspects of applying IFRS do not outweigh the advantages resulting from their application. R. Ball describes potential direct advantages that result from applying the International Financial Reporting Standards¹³:

1. IFRSs comparing to the national standards show more accurate, comprehensive and timely information from financial statements, what should contribute to more conscious valuation on the capital markets and reduce risk for investors.
2. higher quality of financial reporting enables minor investors to compete better with institutional investors –professionals, by reducing risk for less informed investors.
3. IFRSs eliminate lots of differences in the accounting standards and standardize reporting formats. The IFRS implementation provided a cost reduction connected with work of analysts who made corrections to make the financial data comparable. The IFRS application reduced costs of financial information processing for investors.
4. The cost reduction of the financial information processing by IFRS increases market effectiveness what should be included in prices of securities on the stock markets.
5. IFRSs offer increased comparability, and they reduce costs and informative risk for investors.

However, more indirect advantages can be found. Higher quality of the financial statements prepared in accordance with IFRS reduces risk for investors, and it also reduces risk of unprofitable investments for the investors having incomplete access to information. It results from an improvement of usefulness of information included in the financial statement. Increased transparency of the financial statements also contributes to it that managers act in interest of shareholders to a greater extent. In particular, it affects higher motivation of a management board to react quicker to a threat to current investments, including limiting new investments of negative values NPV¹⁴.

The IFRS implementation was to contribute mainly to an increase in comparability of the financial statements. In the event of mandatory IFRS use higher comparability can be obtained only by a proper implementation of these standards. Comparability of the financial statements is the most important for global investors operating on the international markets. The higher level of comparability obtained owing to IFRS contributed significantly to a development of foreign investments. The studies show that the mandatory IFRS use leads to an increase in the foreign investments in the states where IFRSs are used. It should be emphasized that the foreign investment increase does not depend only on comparability of the financial statements but on the institutional environment as well¹⁵.

High quality of the financial statements prepared according to IFRS has a significant influence on reflecting the real financial situation of a firm in the share price. C. Beuselinck, P. Joos, I.K.

¹³ R. Ball, *International Financial Reporting Standards (IFRS): pros and cons for investors*, "Accounting and business research", 2006, 36(sup1), p. 5–27.

¹⁴ R. Ball, *International...*, *op. cit.*, p. 5–27.

¹⁵ M. DeFond, X. Hu, M. Hung, S. Li, *The impact of mandatory IFRS adoption on foreign mutual fund ownership: The role of comparability*, *Journal of Accounting and Economics*, 2011, No. 51(3), p. 240–258.

Khurana, S. Van der Meulen¹⁶ have shown that directly after the IFRS implementation there can be a considerable decrease in synchronization between the share price and the real situation of a firm. Until the later period after the IFRS implementation the share price begins to reflect the actual situation of a business entity. This phenomenon is particularly noticeable in the countries of greater differences between the IFRS and local accounting standards.

The negative effects attributable to the IFRS adoption are substantially connected with costs incurred as a result of their implementing and applying. Undoubtedly, there will be higher costs related to remunerations for financial-accounting employees, more demanding IT systems which can meet needs of such a detailed presentation of data. While analyzing the IFRS adoption influence on auditor's fees for the firms applying IFRS, J.B., Kim, X. Liu, L. Zheng¹⁷ found that they were much higher. It is related to more complex audit procedures and higher costs of auditing.

Admittedly, the IFRS implementation increases the amount of information on companies provided in the financial statements. However, the mandatory or voluntary transition of firms from the local standards to IFRS contributes to a decrease in their comparability on the area of a specific country¹⁸.

An objective of the IFRS implementation was to achieve better quality of the financial statements. One of the determinants of obtaining higher quality of the financial reports is, among other things, to perform quality impairment tests. The IFRS implementation does not have a great impact on accounting quality in the enterprises which conducted earlier the impairment tests and made the disclosures in compliance with IFRS. The IFRS implementation is greatly important in the case of the companies which did not perform the asset impairment tests, although they should have done it. Making the tests requires far-reaching judgments from managers and analyses, because it is based on unrealized estimates of the fair value. Accounting of the asset impairment lowers a financial result and it may result in it that managers will be afraid of reduction of remunerations. A degree of enforcement of the standards by the regulatory authorities will be crucial for the IFRS implementation quality in a particular country, because they make a review of the IFRS advantages and costs¹⁹.

The made analysis of the advantages, costs and barriers of the IFRS implementation shows that there are more positive aspects resulting from applying IFRS. Undoubtedly, the IFRS implementation advantages are perceived by international enterprises and participants of the international capital markets. Comparability of the financial statements is mentioned as the main IFRS advantage which contributes to a development of the global markets and the international investments.

4. FACTORS HAVING IMPACT ON VOLUNTARY IFRS IMPLEMENTATION

Business entities are stimulated by different factors of voluntary preparation of the financial statement according to IFRS. They are both financial, macro-economic and institutional factors. Two basic concepts of selecting the factors determining the voluntary IFRS application are found in the world literature. The first idea concerns the factors connected with internal functioning of a firm (micro-economic factors). The studies on the micro-economic factors were undertaken by P. Andre, P. Walton, D. Yang²⁰. They have demonstrated that the factors motivating firms to voluntary transfer to IFRS are: internationality of companies (having foreign branches), a size of a firm, reputation of

¹⁶ C. Beuselinck, P. Joos, I.K. Khurana, S. Van der Meulen, *Mandatory IFRS reporting and stock price informativeness*, 2009, p. 1–54.

¹⁷ J.-B., Kim, X. Liu, L. Zheng, *The impact of mandatory IFRS adoption on audit fees: theory and evidence*, "The Accounting Review", 2012, No. 87, p.2061–2094.

¹⁸ H. Daske, *Economic Benefits of Adopting IFRS or US-GAAP–Have the Expected Cost of Equity Capital Really Decreased?*, "Journal of Business Finance & Accounting", 2006, No. 33 (3-4), p. 329–373.

¹⁹ P. André, A. Filip, L. Paugam, *The effect of mandatory IFRS adoption on conditional conservatism in Europe*, "Journal of Business Finance & Accounting", 2015, No. 42(3–4), p. 482–514.

²⁰ P. André, P. Walton, D. Yang., *Voluntary Adoption of IFRS: A Study of Determinants for UK Unlisted Firms*, In *Comptabilités et Innovation* (pp. cd-rom), 2012, p. 1–39.

auditing firms. The variables such as return on capital, a trade, an ownership structure, productivity of employees play a lesser role in making a decision about the voluntary IFRS application. P. Dumontier and B. Raffournier²¹ also indicate a firm size, auditor's reputation, a dispersed ownership structure, lesser capital intensity in their paper on the determinants of the voluntary IFRS adoption. Lack of a significant impact was determined for return on capital.

While the second scientific area deals with the external factors (macro-economic ones), coming from the environment and institutional determinants. The variables describing the economic growth, interest rates, a development of capital markets, a banking sector, law quality, effectiveness of legal enforcement, legal protection of stock market investors, a corporate governance system are subjected to studies most frequently.

Studies on the external factors were also made by N. Delcours and K. Huff.²² They proved a significant impact of the factors connected with access to the capital market, corporate governance, protection of investors on the voluntary IFRS application. The institutional determinants conditioning the IFRS application were also studied by A. Renders and A. Gaeremynck.²³ They proved that the voluntary IFRS adoption depended on quality of protection of the stock market investors. IFRSs will be more probably used in the countries with restrictive legal regulations and extensive corporate governance. It was proved that corporate governance was as effective as the legal regulations in force, as far as the voluntary IFRS application is concerned. F. Zehri and J. Chouaibi²⁴ also studied the macroeconomic and institutional determinants of the IFRS application by the developing countries. They have indicated that the institutional environment is of great importance, and first of all, a legal system, a high level of education and some macro-economic factors such as the economic growth. Existence of the capital market, a cultural model, a political system do not have an important impact on the voluntary IFRS application.

A size of a business entity

A size of a firm is an important factor determining a selection of accounting standards (e.g. IFRS)²⁵. Bigger business entities are able to bear costs of additional disclosures contrary to smaller companies²⁶. Smaller companies are not willing to disclose additional information, also because according to their opinion it could be used by competitive firms, that is why they implement IFRS reluctantly. Generally, the bigger firms provide various users of the financial statements with more information, that is why they will use IFRS more willingly than local accounting standards. On the whole local accounting standards (national) comparing to IFRS oblige business entities to disclose much smaller number of disclosures. Moreover, cost of an information disclosure has depressive nature for big entities²⁷. A fixed component of information costs is distributed on a bigger number of entities.

A selection of accounting standards is based on the theory of political costs, namely a need to settle with the environment and the principal-agent problem, that is a need to provide minority investors, who do not have a direct influence on the current operating, financial and investment decisions, with additional information²⁸. Additionally, big business entities are more involved in the

²¹ P. Dumontier, B. Raffournier, *Why Firms Comply Voluntarily With IAS: An Empirical Analysis with Swiss Data*, "Journal of International Financial Management & Accounting", 1998, Vol. 9 (3), p. 216–245.

²² N. Delcours, K. Huff, *Determinants of IFRS Voluntary Adoption in Emerging and Frontier Markets*, "Review of Business", 2015, Vol. 36 (1), p. 43.

²³ A. Renders, A. Gaeremynck, *The Impact of Legal and Voluntary Investor Protection on the Early Adoption of International Financial Reporting Standards (IFRS)*, "De Economist", 2007, Vol. 155(1), p. 49–72.

²⁴ F. Zehri, J. Chouaibi, *Adoption Determinants of the International Accounting Standards IAS/IFRS by the developing countries*, "Journal of Economics, Finance and Administrative Science", 2013, Vol. 18(35), p. 56–62.

²⁵ P. André, P. Walton, D. Yang, *Voluntary adoption of IFRS... op. cit.*, p. 1–39.

²⁶ A. Fitó, F. Gómez, S. Moya, *Choices in IFRS Adoption in Spain: Determinants and Consequences*, "Accounting in Europe", 2012, Vol. 9(1), p. 61–83.

²⁷ R. Cuijpers, W. Buijink, *Voluntary Adoption of Non-local GAAP in the European Union: A Study of Determinants and Consequences*, "European Accounting Review", 2005, Vol. 14(3), p. 487–524.

²⁸ P. André, P. Walton, D. Yang, *Voluntary adoption of IFRS... op. cit.*, p. 1–39.

international operations where the IFRS acceptance is greater than on the local markets. C. Bessieux-Ollier, E. Walliser²⁹ think likewise. According to the theory of political costs the big firms publish more information because great attention of finance analysts and the public opinion is focused on them, and for this reason there is a need for additional disclosures. A diversified form of ownership and a big number of investors result in an increase in a need for detailed accounting information which they do not give while keeping the accounts on basis of national standards. The big entities depend largely on international financing, hence financing via lots of stock exchanges requires use of the only generally accepted accounting standards (e.g. IFRS). The big firms have a very strong market and financial situation, therefore they are not afraid of disclosing additional information which can be also used by competitive firms.

A firm size is a natural factor affecting voluntary financial reporting what is confirmed by numerous empirical studies. This influence should be evaluated as positive³⁰.

Auditors

Auditors play an important role in a scope of making financial reporting of their clients, including a selection of accounting standards, e.g. IFRS³¹. A positive influence of auditors on quality of the financial statements of their clients should be emphasized. Moreover, an increase in the financial reporting quality has a beneficial impact on the audit result. Applying IFRS in the opinion of the auditors makes financial reporting more credible, in addition it is increased by an audit made by a reputable auditor. A selection of the specific auditor can be a reason for or a consequence of the IFRS application. The renowned auditors persuade repeatedly their clients to use IFRS.³² The audit costs in the international enterprise for an auditor will be lower if an international business entity (a client) will use IFRS in the subsidiaries in the particular countries of the world. Moreover, the renowned auditors have necessary and well-qualified personnel facilitating the IFRS implementation.

The Big Four of Accounting Firms have a competitive advantage in a scope of applying and implementing IFRS in their clients³³. A selection of an auditor who influences an increase in the quality of the financial reporting, in consequence also means suggestions for using accounting standards of high quality e.g. IFRS. In the opinion of Y. B. Şenyiğit an auditor has a significant influence on the IFRS selection too³⁴. The IFRS selection is a signal for the market in a scope of financial reporting quality. All auditing firms have necessary experience, knowledge and specialization in a scope of the IFRS implementation. Therefore, probability of use of IFRS by a company increases if it uses the services of so called the Big Four of Accounting Firms.

Indebtedness

Positive relationships between indebtedness and a level of the information disclosed by business entities and the IFRS application can be found in the literature³⁵. A higher level of indebtedness increases firm risk, it causes a need for greater supervision over doings of a business entity by owners of the equity and debt capital. The risk and cost of capital can be decreased by additional and voluntary disclosures. Indebtedness of an enterprise performs an important function in a scope of improving transparency of a financial statement³⁶. High quality of financial reporting e.g. on basis of IFRS reduces agency costs, resulted from concluding credit agreements. The business entities which strive for reducing costs of debt financing show a tendency to prepare a financial statement of high quality and to show financial results of high quality, and thus a probability of the voluntary IFRS

²⁹ C. Bessieux-Ollier, E. Walliser, *Why Firms Listed on an Unregulated Financial Market Comply Voluntarily with IFRS: An Empirical Analysis with French Data*, in „Comptabilités et Innovation” 2012, p. 1–36.

³⁰ Y. B. Şenyiğit, *Determinants of Voluntary IFRS Adoption in an Emerging Market: Evidence from Turkey*, „Accounting and Management Information Systems”, 2014, Vol. 13, p. 449–465.

³¹ P. Dumontier, B. Raffournier, *Why Firms Comply Voluntarily...*, op. cit., p. 216–245.

³² C. Bessieux-Ollier, E. Walliser, *Why Firms Listed...*, op. cit., p. 1–36.

³³ P. André, P. Walton, D. Yang, *Voluntary Adoption of IFRS...*, op. cit., 2012.

³⁴ Y. B. Şenyiğit, *Determinants of Voluntary IFRS...*, op. cit., p. 449–465.

³⁵ A. Fitó, F. Gómez, S. Moya, *Choices in IFRS Adoption...*, op. cit., p. 61–83.

³⁶ Y. B. Şenyiğit, *Determinants of Voluntary IFRS...*, op. cit., p. 449–465.

application on the local markets grows. Debt financing causes a situation in which owners of a firm may transfer wealth at the cost of lenders³⁷. Since owners support investing monetary means in more risky projects of high rate of return. Lenders do not obtain additional interest for a higher risk level. The IFRS application may facilitate establishing relationships between the owners and the lenders and it may also make a control process easier. The more indebted business entity, the greater necessity of its effective monitoring and higher pressure on high quality of financial reporting, e.g. IFRS is.

C. Bessieux-Ollier, E. Walliser also emphasize conflicts of interests between the lenders and the owners³⁸. The higher indebtedness, the more necessary is effective and increased monitoring. There is a growing demand for additionally disclosed information, accounting standards of high quality, e.g. IFRS, of which quality is higher than the local standards. Financial reporting will be used to evaluate if a business entity does not violate clauses included in the credit agreement. Monitoring of an enterprise activity may be more effective if firms use accounting standards of high quality (IFRS)³⁹.

Profitability

Relationships between profitability and the IFRS application are not completely clear. The IFRS application causes that the earnings management becomes impeded⁴⁰. It should be assumed that only the entities of high profitability will use IFRS because possibilities of the earnings management are limited for the firms using IFRS⁴¹. The IFRS application will exert rather long-term influence on profitability and this relationship can be verified only in the long term.

The signaling theory suggests that the most successful business entities should distinguish themselves in each sphere of business. The IFRS application can be one way of distinguishing⁴². Pursuant to the theory of political costs the business entities of high profitability will, probably, show more information which will justify their high profitability. Presuming that IFRSs require greater amount of the disclosed information it must be assumed that the most profitable enterprises will use IFRS.

The fact should be emphasized that the process itself of the change of the local accounting standards (for example Polish) into IFRS entails a change in profitability of a business entity. The profitability ratios calculated on basis of IFRS and the local accounting standards differ with each other, slightly higher profitability was found for measures determined on basis of IFRS⁴³. Moreover, the IFRS application exerts a positive impact on profitability by lower cost of capital. This phenomenon was confirmed in the numerous empirical works⁴⁴.

Growth possibilities

Positive relationships between development possibilities and a probability of the voluntary IFRS application can be found in the literature. The business entities of high development potential will need, without a doubt, a significant amount of capital to meet the development needs. Therefore, they should show more information in the financial statement, hence, they will tend to use IFRS to a greater

³⁷ J. S. Wu, I. X. Zhang, *The Voluntary Adoption of Internationally Recognized Accounting Standards and Firm Internal Performance Evaluation*, „The Accounting Review”, 2009, Vol. 84(4), p. 1281–1309.

³⁸ C. Bessieux-Ollier, E. Walliser, *Why Firms Listed...*, op. cit., p. 1–36.

³⁹ P. André, P. Walton, D. Yang, *Voluntary Adoption of IFRS...*, op. cit., 2012.

⁴⁰ P. André, P. Walton, D. Yang, *Voluntary Adoption of IFRS...*, op. cit., 2012.

⁴¹ P. Dumontier, B. Raffournier, *Why Firms Comply Voluntarily...*, op. cit., p. 216–245.

⁴² C. Bessieux-Ollier, E. Walliser, *Why Firms Listed on an...*, op. cit., p. 1–36.

⁴³ M. Adamik-Citak, *Porównanie informacji zawartej w sprawozdaniu finansowym prezentowanym według MSSF ze sprawozdaniem finansowym sporządzonym zgodnie z polskim prawem bilansowym*, „Zeszyty Teoretyczne Rachunkowości”, 2011, tom 60 (116), p. 19–30 oraz K. Grabiński, M. Kędzior, *Wpływ zastosowania Międzynarodowych Standardów Rachunkowości na wartość analityczną sprawozdań finansowych spółek notowanych na Giełdzie Papierów Wartościowych w Warszawie*, [w]: „Rachunkowość w teorii i praktyce”, pod red W. Gabrusewicz, Wydawnictwo Akademii Ekonomicznej w Poznaniu, Poznań 2007, p. 281.

⁴⁴ S. Li, *Does Mandatory Adoption of International Financial Reporting Standards in the European Union Reduce the Cost of Equity Capital?*, „The Accounting Review”, 2010, Vol. 85, no. 2, s. 607–636 oraz H. Daske, L. Hail, C. Leuz, R. Verdi, *Mandatory IFRS Reporting Around the World: Early Evidence on the Economic Consequences*. “Journal of Accounting Research”, 2008, Vol. 46 (5), p. 1085–1142.

extent⁴⁵. The cost of capital will be lower in the situation when a scope of information asymmetry will not be too big. A. Fitó, F. Gómez, S. Moya also confirm an influence of the development possibilities on the IFRS application. The development possibilities are closely connected with external financing⁴⁶. For this reason quality of financial reporting which will be often higher on basis of IFRS than local standards, becomes particularly important. External investors demand a lower rate of return for the entities of low risk of financial reporting, what is characteristic for the financial statements based on IFRS.

Capital intensity

The capital intensity is understood as a share of fixed assets in the balance sheet total. If an enterprise invests its funds mainly in the fixed assets, a necessity of supervision and monitoring of the entrusted resources will be lower than in the situation of a big share of current assets in the balance sheet total⁴⁷. Hence, the IFRS application will be more probable in the business entities of low capital intensity where a scope of supervision and monitoring over the assets should be greater.

Similar views present C. Bessieux-Ollier, E. Walliser⁴⁸. If a share of the fixed assets is big and stable, a firm value at a constant level of development possibilities should be also stable. Therefore there is no need to use IFRSs, which require a greater value of disclosures and additional information on “future development options”. The fixed assets are thought to be predictable, stable and not requiring additional disclosures, contrary to the current assets, including “the future development options”. For this reason the IFRS application will not be needed in this situation⁴⁹.

Foreign investor

A foreign investor (often international) exerts a positive impact on different zones of operations of a business entity⁵⁰. It should be pointed out that local accounting standards used in the subsidiary result in an increase in the information asymmetry between it and a foreign owner. The foreign investors do not often know and do not accept entirely local accounting standards. Use of the standards generally known and accepted in the world, such as IFRS, is a positive signal for an investor in a scope of quality and credibility of financial reporting of a subsidiary.

The foreign investors often perform a key function to provide a corporate governance system operating efficiently⁵¹. Its important element is a financial reporting system of high quality, e.g. based on IFRS. By implementing high quality of accounting standards they provide a more effective control mechanism in a business entity. Therefore, there is a higher probability that a business entity of which a shareholder is a foreign investor, will use IFRS at the expense of national accounting standards. The foreign investors not knowing local accounting standards will prefer largely global accounting standards in which they have greater confidence.

5. CONCLUSION

Globalization of the economic processes forces internationalization of conducted operations, procurement of the capital needed for the market expansion outside the boundaries of the home

⁴⁵ A. Fitó, F. Gómez, S. Moya, *Choices in IFRS Adoption...*, op. cit., p. 61–83.

⁴⁶ P. André, P. Walton, D. Yang, *Voluntary Adoption of IFRS...*, op. cit., 2012.

⁴⁷ P. André, P. Walton, D. Yang, *Voluntary Adoption of IFRS...*, op. cit., 2012.

⁴⁸ C. Bessieux-Ollier, E. Walliser, *Why Firms Listed on an Unregulated...*, op. cit., p. 1–36.

⁴⁹ Podobnie: O. K. Hope, J. Jin, T. Kang, *Empirical Evidence on Jurisdictions that Adopt IFRS*, „Journal of International Accounting Research”, 2006, Vol. 5(2), p. 1–20.

⁵⁰ J. R. Francis, I. K. Khurana, X. Martin, R. Pereira, *The Role of Firm-Specific Incentives and Country Factors in Explaining Voluntary IAS Adoptions: Evidence from Private Firms*, „European Accounting Review”, 2008, Vol. 17(2), p. 331–360.

⁵¹ F. Bova, R. Pereira, *The Determinants and Consequences of Heterogeneous IFRS Compliance Levels Following Mandatory IFRS Adoption: Evidence from a Developing Country*, „Journal of International Accounting Research”, 2012, Vol. 11(1), p. 83–111.

country, or a necessity of internationalization of local (national) accounting. Reducing the differences between the national accounting standards takes place by their harmonization or standardization. The International Financial Reporting Standards are the most mature form of harmonization of diversified standards of national accounting. The harmonization of accounting standards is advantageous for many participants of the market game, such as: both domestic and foreign investors, auditors, trade partners, lenders, and first of all, for the same firms which use them. In the enterprises which implemented IFRS quality of accounting improves, transparency of an enterprises improves, there is an increase in a number of disclosures, there is a decrease in risk for investors and the cost of capital, or profitability of an enterprise can improve.

A size of an enterprises is an important factor affecting voluntary IFRS application. It results mainly from lower costliness of their implementation for big entities, big enterprises also have a social and political obligation to account for their operations, they are not afraid of disclosing a great amount of information, including for competitive firms. A renowned auditor taking care of quality of financial reporting often encourages to conduct a policy of big disclosures, or even he urges to use IFRS. Moreover, he has necessary experience needed to implement IFRS and appropriate human resources. Indebtedness often generates an increase in the financial risk of an enterprise, that is why there is a need for high quality of financial reporting, a greater amount of disclosed information, thus, the indebted firms will use IFRS to a greater extent. The IFRS application is connected with greater credibility of an enterprise, lower cost of capital, it limits the earnings management, and for this reason positive relationships between profitability of an enterprise and the IFRS application should be assumed. The increased demand for the capital resulting from big development opportunities of an enterprise is connected with a necessity of disclosing a greater amount of information, opportunities, a need for greater transparency of a firm, use of generally known and accepted accounting standards, such as e.g. IFRS. The enterprise with a big share of the fixed assets which do not require close monitoring, characterized by lower agency costs and it will, probably, use IFRS to a lesser degree. Whereas the foreign investors will, probably, accept the generally known accounting standards to a greater extent contrary to the local standards, less known, in which they may have lower confidence.

Future studies dealing with the factors affecting the voluntary IFRS application may include more detailed characteristics concerning corporate governance and the factors of the institutional to a greater extent.

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SECURITIES AS THE SUBJECT OF ACCOUNTING IN BUSINESS ENTITIES

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Abstract

The contribution is devoted to the current state of securities under the transnational arrangement and according to the modification in the Slovak Republic, while for the transnational adjustment we considered the conditions applied by IFRS in the European Union, because each country of the European Union may have its own legislation regulating individual types of securities, but for accounting purposes, such as classification, valuation, reporting and disclosure, countries should rely on uniform IFRSs. In the section devoted to transnational regulation, we dealt with the transnational adjustment of securities by the characteristics, categories and the transfer of financial instruments between the different IFRS categories. IAS 32 Financial Instruments: Presentation defines a financial instrument as a contract that creates a financial asset for one entity and a financial liability or equity instrument for the other entity. Under this definition, securities can also be understood. Within the framework of the national regulation, we focused on the characterization, the valuation of securities and the presentation of these accounts in the Slovak Republic accounts, the overview of the legal norms regulating the securities, the definition of the common characteristics of the securities, the possibilities of their classification and the definition of the basic terms used in the securities. In a separate section, we have summarized the classification and measurement of securities (financial instruments) according to IFRS 9 Financial Instruments.

Keywords: Securities, characterization, measurement, recognition, reporting

1. INTRODUCTION

Property is in accordance with Act no. 431/2002 Coll. (hereinafter "Accounting Act") is the result of past activities of an entity that can be reliably measured and is almost certain that it will generate economic benefits in the future and is recognized in the financial statements. At the same time, as a result of the entity's operations, liabilities that represent the entity's existing liabilities that arose from past events can be reliably measured and are likely to reduce economic benefits in the future and are recognized in the financial statements. Securities-related activities are a specific area in the business entities' business as well as their display in accounting since they may represent assets in one entity but also a source of assets in another entity. Securities are assets for the entity when they are acquired for the purpose of recovering assets, depositing assets, or may represent a statement that the entity is the owner of the part or the whole of the other entity. Restrictions are securities when an entity needs additional resources for its business objectives and issues securities for that purpose, such as bonds.

2. SECURITIES BY TRANSNATIONAL ADJUSTMENT

In the area of transnational securities regulation, transnational regulation is based on international IFRS financial reporting standards, as this is the basis for national adjustment. In particular, the following issues are addressed by securities issues:

- IAS 32 Financial Instruments: Presentation,
- IAS 39 Financial Instruments: Recognition and Measurement,
- IFRS 7 Financial Instruments: Disclosure,
- IFRS 9 Financial Instruments.

We can conclude that securities belong to the category of financial instruments that are defined in IAS 32 Financial Instruments: Presentation. The standard describes a financial instrument as a contract from which a financial liability or equity instrument arises from one entity to the financial asset and the other the accounting entity. For the sake of completeness, we will characterize the IFRS for financial instruments, which mainly govern the standards set out in the following report:

Table 1. Standards governing financial instruments

Standard	The goal of the standard is:
IAS 32 Financial Instruments: Presentation	introduce definitions and principles of presentation of financial instruments, such as liabilities or equity, and offsetting financial assets and financial liabilities the first mandatory application shall apply to annual periods commencing on or after 1 January 2005
IAS 39 Financial Instruments: Recognition and Measurement	to lay down the principles for the recognition and measurement of financial assets, financial liabilities and certain contracts relating to the purchase or sale of non-financial items the first mandatory application shall apply to annual periods commencing on or after 1 January 2005
IFRS 7 Financial Instruments: Disclosure	require entities to provide disclosures in their financial statements that enable users to evaluate the significance of financial instruments, the nature and extent of the risks arising from the financial instruments to which the entity is exposed, and the manner in which the entity manages those risks the first mandatory application shall apply to annual periods commencing on or after 1 January 2007
IFRS 9 Financial Instruments	the objective of this Standard is to gradually replace IAS 39 Financial Instruments: Recognition and Measurement (24 July 2014 issued the final version of the Standard whose date of first application is for the accounting period beginning on 1 January 2018)

Source: own processing IFRS

Financial instruments and hence securities are also stated by other standards, but the above-mentioned entities substantially contribute to the individual financial statements for the definition, measurement, reporting and disclosure of securities-related information. Examples are investments in subsidiaries and associates and in joint ventures that are subject to IAS 27 Consolidated and Separate Financial Statements, IAS 28 Investments in Associates and IAS 31 Shares in Joint Venture, but in certain cases where the conditions are met, they may be accounted for and reported in accordance with IAS 39 Financial Instruments: Recognition and Measurement.

3. CHARACTERISTICS OF SECURITIES UNDER IFRS

Financial instruments are a contract from which a financial asset is created by one entity and a financial liability or equity instrument is the category under which securities are also included. Standard IAS 32 Financial Instruments: Presentation of Financial Assets considers:

- cash;
- equity instruments;
- contractual right to other entity's financial assets (eg receivables);
- the right to exchange financial assets or liabilities with another entity under potentially profitable terms;
- a contract that is settled or can be settled by the entity's equity instrument (eg, share) and is a non-derivative that will lead or may lead to a variable number of own shares;

- a derivative that will or may be settled otherwise than by exchanging a fixed amount or other financial asset for a fixed number of own shares.

Examples of financial assets include cash, cash equivalents (checks), equity instruments issued by another entity (shares), bank money (deposit books) or debt securities issued by another accounting unit(s).

Financial assets IAS 39 Financial Instruments: Recognition and Measurement in paragraph 9 is divided into four main categories according to the following table:

Table 2. Financial asset categories under IAS 39 Financial Instruments: Recognition and Measurement

Financial assets	Financial assets at fair value with the effect on profit or loss (FVPL)	the assets held for trading (such as securities in which the entity expects to increase and subsequently sell the asset); assets held for trading may be held for more than one accounting period, the intention and intent of the entity
	Financial investments held to maturity (HTM)	it includes assets that have a maturity and the entity has the intent and ability to hold them until maturity (if the entity has liquidity problems, it can not have a portfolio comprised of held-to-maturity investments)
	Loans and receivables (L & R)	the purchased receivables and loans are the purchased or the accounting unit
	Realizable assets (AFS)	these include assets that were not included in any of the above categories

Source: own processing IFRS

A financial liability under IAS 32.11 is a contractual obligation to deliver financial assets to another entity, to exchange financial assets or liabilities with another entity in potentially unfavorable terms for the entity. A financial liability is also a contract that is settled or can be settled by the entity's own equity instruments and is the non-derivative for which the entity is or may be required to deliver a variable number of own shares. Examples of financial liabilities include borrowings from the bank, bonds issued, trade payables, bank deposits received, derivatives of negative fair value.

Financial liabilities IAS 39 Financial Instruments: Recognition and Measurement in paragraph 9 is divided into two categories according to the following table:

Table 3. Categories of financial liabilities under IAS 39 Financial Instruments: Recognition and Measurement

Financial liabilities	At fair value with the effect on profit or loss	correspond to the Financial Assets category reported for the economic outturn and include trading liabilities (eg so-called short sales)
	Other financial liabilities	all liabilities not included in the category of Financial Liabilities reported with effect on profit or loss

Source: own processing IFRS

An IFRS equity instrument is a contract that demonstrates the remaining portion of the entity's assets after deducting all liabilities (ie, the right to the balance of assets after the payment of all liabilities). IFRSs refer to a financial instrument or other contract in accordance with IAS 39 Financial Instruments: Recognition and Measurement whose value varies according to changes in certain factors (eg interest rates, currency rate, price index, etc.) does not require any or a relatively small initial investment, and which will be settled in the future (Šrámková, Janoušková, Vojáčková, 2009).

Although it may appear at first sight that IAS 32 Financial Instruments: Presentation, IAS 39 Financial Instruments: Recognition and Measurement, IFRS 7 Financial Instruments: Disclosures

are for their size intended primarily for financial institutions or for large entities with complex transactions, in fact also concern smaller accounting units with relatively simple activities.

4. VALUATION AND REPORTING OF SECURITIES UNDER IFRS

The valuation of financial instruments is mainly devoted to IAS 39 Financial Instruments: Recognition and Measurement, which requires that an entity recognize the financial asset or financial liability at its fair value on initial recognition. Fair value is the amount for which the asset would be sold or the liability transferred, as part of a normal transaction between the parties to the transaction at the valuation date (Pakšiová, Kubaščíková, Kršeková, 2015). IFRS 13 Fair Value Measurement introduces an input hierarchy to determine the fair value divided by three levels (Tkáčová, Juhászová, 2013). Level 1 entries are quoted (unadjusted) prices found on major markets for the same type of asset or liability as at the valuation date. Level 2 entries are prices found in the active market for a similar or identical type of asset or liability in the market but which is not the main market for that asset or liability. This level may also include inputs derived from market data or from market support data on the basis of mutual relationships or inputs as otherwise identified. Level 3 inputs are inputs obtained to determine fair value when we can not determine the prices of the same or similar type of asset or liability. In such a case, the fair value measurement reflects the assumptions of unobservable inputs that market participants would use to measure an asset or liability, including the assumptions about the risk that a particular valuation technique uses.

Valuation techniques to determine fair value Standard IFRS 13 Fair value measurement includes the three commonly used methods (IFRS 13):

1. A market method that uses prices and other relevant information generated by transactions on the market with the same or comparable (similar) assets, liabilities or pool of assets and liabilities.
2. A cost method that reflects the amount that would be needed at the time of valuation to replace the current asset (often referred to as the current replacement cost, determined as fair value).
3. The yield method in which future amounts (such as cash flows or receipts and expenditures) are converted to one current (i.e., discounted) amount. Using the yield method, fair value measurement reflects current market expectations for these future amounts.

The fair value measurement also includes transaction costs for the acquisition of a financial instrument. Examples of transaction costs are the legal costs associated with issuing bonds, fees for trading securities on the stock exchange. IAS 39 Financial Instruments: Recognition and Measurement defines the effective interest rate, which is the interest rate discounting the expected future cash flows until the due date of the financial instrument to the carrying amount of the financial asset or liability.

However, as a general rule, it is not the case for the initial recognition of a gain or loss, the best IFRS valuation is the initial recognition of the cost of acquisition (one of the exceptions to the non-application of the purchase price is low interest rate loans that are recognized at present value of expected future cash flows, discounted using an interest rate that is approximately equal to the market interest rate).

Subsequent valuation depends on the inclusion of a financial asset or liability in one of the categories set out in IAS 39 Financial Instruments: Recognition and Measurement, which may be the following:

Table 4. Subsequent valuation of financial instruments

Item	Subsequent award	Impact of revaluation	Recognizing the portion of interest, discounted, premium and exchange rate differences in profit or loss ¹	Performing a write-down asset test if an event of increasing credit risk occurs
Financial assets				
Financial assets at fair value with the effect on profit or loss	Real value	To profit or loss	Part of the revaluation to fair value that impacts on the economic result	No
Financial investments held to maturity	Amortized costs	Note below the table	They are charged with the impact on the economic result	Yes
Loans and receivables				
Realizable assets	Real value	Capital ²	Fair value changes are recognized and reported separately from interest, discounts, bonuses and exchange rate differences that affect the economic outturn	Yes
Financial obligations				
Financial liabilities at fair value with effects on profit or loss	Real value	To profit or loss	Part of the revaluation to fair value that impacts on the economic result	
Other liabilities	Amortized costs	Note below the table	They are charged with the impact on the economic result	

Note: For the valuation of these financial instruments, they are not revalued in the true sense, but their value is updated, for example, by the time-related costs or returns that affect the amount of their value using the effective interest rate method.

Source: Dvořáková, 2008

When valuing held-to-maturity financial instruments at fair value through profit or loss, it is necessary to respect the time at which they are measured at the deferred value, and therefore amortized cost method is used. This method is used in the case of receivables and payables where the time factor of the monetary effect is significant. It is based on an effective interest rate or internal rate of return based on the principal adjusted for the discount on the acquisition of the security or the sale of the security and any payments received or paid between the issuer and the first owner and discounted future received or received payments. Amortized cost of acquisition is the amount at which a security was acquired at initial recognition less the principal repayments, increased or decreased by the cumulative amortized difference between that initial amount and the amount payable.

The Internal Rate of Return (IRR) is the rate at which the present value of cash from a security equals the present value of the expense. For this calculation, you can use the IRR function in Microsoft Excel that calculates the internal rate of return for a series of regular flows represented by numeric values (they may not have the same height)³.

¹ In the case of financial instruments, it is necessary to ensure that interest, discounts, bonuses, as well as exchange differences are recognized in profit or loss, both at fair value and amortized cost.

² In the event of impairment of these instruments, their impairment is recognized in the income statement. If an impairment is capitalized prior to impairment, it must first be accounted for and thereafter the subsequent impairment is recorded that impacts on the economic outturn.

³ The XIRR function can be used to calculate the internal rate of return for irregular flows. In order to calculate the net present value of the investment at a discount rate and a series of future payments (even negative) and incomes (only positive values), it is possible to use the NPV function for regular flows or XNPV in case of irregular flows.

The effective interest rate, such as the interest rate discounting the expected future cash flows up to the expected maturity of the financial instrument to the net carrying amount of the financial asset or liability, is calculated using iteration (Svitek, 2008).

Under paragraph AG84 in IAS 39 Financial Instruments: Recognition and Measurement, the impairment of financial assets at fair value through profit or loss is impaired by a reduction in fair value. The decrease in the value of financial assets measured at amortized cost is determined using the original effective interest rate of the financial asset because discounted at the current market interest rate would trigger the effects of fair value measurement on financial assets that are otherwise measured at amortized cost. If the borrower or issuer's financial problems are renegotiated or otherwise modified by terms of credit, receivables or held-to-maturity investments, the impairment is measured using the original effective interest rate before the change in terms. For the impairment loss of a financial instrument reported at amortized cost, the existence of an objective event occurs after the initial recognition. Examples of such events may be:

- significant financial problems of customers;
- breach of contract (non-payment of the amount at maturity);
- likelihood of bankruptcy or liquidation;
- ending the existence of an active market for that asset;
- past experience with the collection of receivables indicates that the nominal value of the portfolio of receivables will not be settled.

The valuation of financial instruments was mainly devoted to IAS 39 Financial Instruments: Recognition and Measurement. In April and October 2005, the FASB and the IASB convened an agreement on the basis of which the requirements for valuation of financial instruments were to be approximated. 24. July 2014 The IASB presented the new IFRS 9 Financial Instruments, which should replace the applicable IAS 39 Financial Instruments: Recognition and Measurement as of 1 January 2018. Because the original Standard contained several categories of classifications and impairment models, there were many problems in the classification and measurement of financial instruments, which also affected reporting in the financial statements. IFRS 9 Financial Instruments is intended to mitigate these problems.

5. PUBLICATION OF SECURITIES UNDER IFRS

The disclosure of information about financial instruments is contained in IFRS 7 Financial Instruments: Disclosure, which discloses disclosure requirements for financial instruments and the associated risks in their financial statements. This Standard is consistent with IAS 32 Financial Instruments: Presentation and IAS 39 Financial Instruments: Recognition and Measurement, in particular in the field of classification of financial instruments and valuation requirements. The purpose of the standard is to disclose information to entities to enable users to assess the risks arising from financial instruments. The disclosure of the information is divided into two categories, which allow users to evaluate:

1. Importance of financial instruments for the entity's financial position and performance,
2. The nature and extent of the risks arising from the financial instruments to which an entity is exposed during the accounting period and the manner in which the entity controls those risks.

The first category of disclosure groupings that allow users to evaluate the importance of financial instruments for the entity's financial position and performance are reported in the Balance Sheet, Statement of Profit or Loss and other comprehensive income, and other disclosures. The following diagram sets out the requirements of IFRS 7 Disclosures for Disclosures of Types of Financial Instruments.

Table 5. IFRS 7 financial instruments disclosures: *Financial Instruments: Disclosure*

Statement	Publishing area
Statement of financial position (balance sheet) or Notes	1. financial assets at fair value through profit or loss, with particular reference to: a. financial assets for trading and b. financial assets at the valuation at fair value with an impact on profit or loss;
	2. held-to-maturity investments;
	3. loans and receivables;
	4. financial assets available for sale;
	5. financial liabilities at fair value that have an effect on profit or loss, with particular reference to a. financial liabilities thus determined at initial recognition; and b. financial liabilities classified as held for trading,
	6. financial liabilities measured at amortized cost.
Profit or loss statement and other comprehensive income, or statement of changes in equity or Notes	1. 1. net gains or losses:
	2. a. financial assets or financial liabilities at fair value through profit or loss, with particular reference to those parts of financial assets or financial liabilities designated as such on initial recognition and those parts of financial assets or financial liabilities that are classified as held for trading;
	3. b. of the available-for-sale financial assets, showing separately the amount of profit or loss recognized in other comprehensive income for the period and the amount reclassified from equity to profit or loss;
	4. c. from held-to-maturity investments;
	5. d. of loans and receivables and
	6. e. from financial liabilities measured at amortized cost;
	7. total interest income and total interest expense (calculated using the effective interest method) from financial assets or financial liabilities that are not measured at fair value through profit or loss;
	8. Revenues and charges (other than the amounts included in determining the effective interest rate) arising from: a. financial assets or financial liabilities that are not measured at fair value through profit or loss, and b. trust and other management activities resulting in the holding or investing of assets on behalf of individuals, trusts, pension schemes and other institutions;
	9. interest income on financial assets with a reduced cumulative value
	10. the amount of the impairment loss for each class of financial asset.

Source: own processing IFRS7 Disclosures

The second disclosure area is the information to be reported in the financial statements of risks associated with financial instruments that IFRS 7 Financial Instruments: Disclosure.

IFRS 7 Financial Reporting: Disclosure applies to all entities, not just financial institutions. It is natural that, in normal business practice, information on financial instruments will be less restrictive than in the case of financial institutions whose main business is just financial instruments. Obligation to disclose in accordance with IFRS 7 Financial Instruments: Disclosure is reviewed in the context of the materiality principle defined in IAS 1 Presentation of Financial Statements in such a way that it is important to omit or misstatement of items that could individually or jointly influence economic decisions of users made on the basis of the financial statements. Significance is also derived from the size and nature of the omission or misstatement judged in the particular circumstances. The determining factor could be the size or nature of an item or a combination of both.

Fair valuation and its impact on the value of the securities have been devoted to several researches, a study that examined the real values of investment securities that are considered more reliable than previously measured fair value reporting (Barth, 1994), or (Laux, Leuz, 2009).

6. IFRS 9 FINANCIAL INSTRUMENTS AS OF 1 JANUARY 2018

The International Accounting Standards Board (IASB) issued on 24 July 2014 the final version of IFRS 9 Financial Instruments to replace IAS 39 Financial Instruments: Recognition and Measurement, as well as earlier versions of IFRS 9 Financial Instruments.

Standard is the requirement for the classification and measurement of financial instruments. Classification and measurement of financial assets depend on two elements:

the characteristics of contractual cash flows from financial assets and

- the intention of the entity with which it acquired the financial assets.

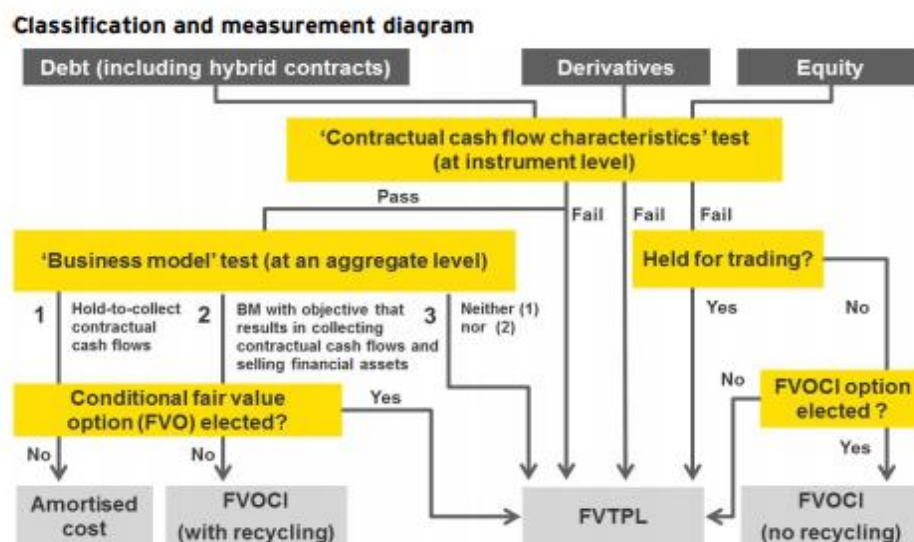
The objective of an entity with which a financial instrument has been acquired is to identify whether a financial asset or a portfolio of financial assets measured at amortized cost is measured at fair value with an effect on other comprehensive income or fair value that impacts on the economic outturn. The first two categories (financial instruments valued at amortized cost and financial instruments at fair value that have an effect on other comprehensive income) are for financial assets that simultaneously fulfill the conditional test of contractual cash flows.

With the exception of some equity securities, IFRS 9 Financial Instruments from 2009 reduced the number of financial instrument categories to two categories:

1. Valued at fair value with effect on profit or loss
2. Valued at amortized cost.

In the final version, however, IFRS 9 Financial Instruments, the Board presented the next, third, category, category of financial instruments at fair value with the effect on other comprehensive income for debt instruments.

Figure 1. Decision Chart for the Classification and Valuation of Financial Instruments



Source: Ernst & Young, 2014

The effective date of the new IFRS 9 Financial Instruments is mandatory for the accounting period beginning on 1 January 2018, with the earlier application also being permitted. However, it will soon be possible to apply a new cost and revaluation charge from the change in fair value resulting from its own credit risk from the fair value measurements that have an effect on the economic outturn without applying other IFRS 9 Financial Instruments but when the new IFRS 9 Financial Instruments becomes mandatory.

7. CHARACTERISTICS OF SECURITIES ACCORDING TO THE NATIONAL REGULATION

The characteristics and types of securities are defined and regulated by a separate law – the Securities Act (Act no. 566/2001 Coll. securities and investment services as amended, §2), which defines securities as a valuables in the statutory form and form in which the rights are associated, in particular, to claim certain property or to exercise certain rights against the designated persons. The Securities Act introduces specific types of securities into the securities system and allows other types of securities to be included in this system, which are declared by separate laws. The Securities Act defines and regulates three types of securities, namely treasury bills, coupons and investment certificates. Other types of securities are governed by separate laws, or their legislation is part of the law governing a particular business area, such as the Collective Investment Act, which regulates the unit certificates. The following table lists the laws governing individual securities in the national regulation:

Table 6. Types of securities with an overview of their legal regulations

Type of security	Legal rule
Equities Temporary sheets Traveler's checks Bills of lading Storehouse leaves	Act no. 513/1991 Coll. Commercial Code as amended
Bonds	Act no. 530/1990 Coll. on bonds as amended
Common leafs	Act no. 594/2003 Coll. on Collective Investment and on Amendments to Other Acts as amended
Deposit papers Passbooks	Act no. 40/1964 Coll. Civil Code as amended
Treasury bills Coupons Investment certificates	Act no. 566/2001 Coll. securities and investment services as amended
Bills of exchange Checks	Act no. 191/1950 Coll. the bill of exchange and the check in the wording of later regulations
Stock backed sheets Product back-ups	Act no. 144/1998 Coll. on the storage reserve list and on the stock back-up list as amended
Cooperative shareholdings	Act no. 42/1992 Coll. on adjusting property relations and balancing of property claims in co-operative societies

Source: own processing

Securities can be classified in a number of ways, for example, according to the relevant legal form of each species, their form, tradability, form, achievable coupon, issuer.

8. SECURITIES VALUATION ACCORDING TO NATIONAL REGULATIONS

Methods of appraising individual components of assets and liabilities for its correct recognition in the financial statements are governed by the Accounting Act in its fifth section. Valuation of assets and liabilities is made at the date of the accounting event and, on the date of preparation of the financial statements, or another day, if the separate regulation provides for a subsequent valuation. Valuation variable for securities are presented in the following overview:

Table 7. Valuation variable for securities

Valuation variable	Characterization under the Act on Accounting
purchase the price	the price at which the security was procured, together with the costs associated with the acquisition, as well as any reductions in that price
nominal value	the price that is stated on the security or the amount to which the claim or the obligation from the security is sound
fair value	<ul style="list-style-type: none"> - the market price, which is: <ul style="list-style-type: none"> (a) the closing price quoted on the stock exchange on the valuation date, provided that the market for the relevant assets being organized by the exchange is an active market, and if the closing price has not been announced on that date, an entity that is not a financial institution may use the immediately preceding the price announced no later than the tenth day before the valuation date, (b) the most costly bid price or, if this is not representative, the median bid prices on another active market on the valuation date, if the valuation under the previous point can not be used; - the value identified by the valuation model that mainly uses information from operations or quotes on the active market, or if there is no information available in the market for the active market in the valuation model, information from an active market, - an expert judgment if the fair value can not be ascertained for the valuation of a security as set out above or the valuation model is not available for the valued valuation, which estimates the value of the security for which it would be sold at that time; its use would require the entity to incur disproportionate efforts or costs in proportion to the benefits of its use for the quality of the presentation of the entity's financial position in the financial statements

Source: Act No. 431/2002 on accounting

Since 1 January 2016, pricing models have been introduced into the Act on Accounting, based on three approaches, namely market, expense and revenue. Market access uses information generated by market operations such as the cost of similar assets achieved in an active market; or price of property, with the development of prices whose development of valued assets has statistical dependence; or in the case of debt assets, the interest rate, the yield curve, or other components of the valuation of a similar type of debt asset. The cost approach is based on the amount of money that would have to be paid to acquire assets that would have a comparable benefit to the entity than the asset. The revenue approach is based, for example, on a model based on the present value of future cash inflows from assets and future cash expenditure on assets, the discount rate being determined as the internal rate of return required by the investor for that type of asset at the date of its valuation that carries a given risk .

In the case of fair value determination, there is an assumed existence of an active market which is a market in which property is traded according to the type of property with similar characteristics under similar conditions and where people are usually willing to buy or sell the type of property and the price information thereon is available to the public. It does not matter whether the market in which the property is traded is domestic or foreign.

An alternative option of valuing available-for-sale securities that are not equity securities in the subsidiary entity and are not securities in the participating entity that were acquired with the intention of selling them was derived from an amendment to the Accounting Act entered into force on 1 January 2016. The legislator introduced this option into law in order to comply with Directive 2013/34 / EU of the European Parliament and of the Council, and states in the explanatory memorandum that this category of securities also uses a professional term of a short-term realizable security shares. The accounting procedures and accounting law do not define this category of securities. For this reason, we see the possibility of incorrect identification of some securities and therefore the possibility of incorrectly choosing the valuation quantity.

The accounting system of the Slovak Republic is based on historical prices, except for the valuation of assets at fair value, which represents the price of the present when the asset is measured in the amounts that were spent on their acquisition, including the value of the increased interest income. This award is demonstrable and clearly evidenced by accounting documents.

Historical pricing merit is a great asset, but it also has its disadvantages or limitations. It expresses the conditions that apply to the acquisition of securities, ie when there is a change in the market economy (eg inflation, change of issuer's creditworthiness, etc.), it is possible only to revalue the value but it is not possible to increase the value of the security. Due to the above mentioned disadvantage in the use of historical prices in the accounting, the valuation measure was introduced fair value. Its use is based on a correct assessment of the factors that affect the value of the security as well as the correct determination of the carrying amount of the security. However, the subjective approach of the person evaluating the factors is sometimes necessary to correctly determine and evaluate these factors. This may result in the introduction of subjectivity in accounting.

9. ACCOUNTING AND REPORTING OF SECURITIES BY NATIONAL REGULATION

Under the accounting policies, securities are accounted for according to whether they are long-term or short-term financial assets of an entity. Long-term financial assets is an asset whose agreed maturity or settlement in another way at the origin of the accounting case is longer than one year. Interest-bearing securities acquired for the purpose of exercising the right associated with them are also considered long-term financial assets. Short-term financial assets are the most liquid, immediately available-for-sale assets in which their expected holding is from the date of acquisition up to one year. If securities were acquired for the purpose of dealing with them, they are always short-term financial assets. Securities are accounted for in the accounts for long-term financial assets in the case of unit-linked securities and shares in the subsidiary entity, equity securities and interests in a participating company or cooperative, available-for-sale securities with a maturity of more than one year and shares, securities held to maturity or other long-term financial assets. Securities in the form of short-term financial assets are recorded in the case of equity securities for trading, own shares and own trading shares, debt securities held for trading, own bonds, debt securities with a maturity of up to one year held to maturity, other realizable securities papers with a maturity of up to one year.

Separate financial statements for small and large entities comprise the general elements and components of the financial statements, which are the Balance Sheet with the POD POD 1-01, the Profit and Loss Statement denominated in POD POD 2-01 and the Notes marked POD POD 3-01. In this paper we will abstain from simplified and aggregated reports for micro accounting units. Included in the financial statements are also notes in which securities are reported on the method of valuation and the selected valuation base for each type of securities. In the section for supplementary data from the balance sheet of the large unit of account, the figures are contained in the following table:

Table 8. Supplementary securities data in the notes

Information in Notes	
Long-term securities	the structure for the current accounting period and its placement in the breakdown by individual balance sheet items; if, through that placement, an entity in a different accounting entity has a material effect or is in relation to that parent's accounting unit, the business name, registered office, equity and management of that other entity,
	about changes in individual components,
	the constituents for which the lien is established and the components for which the entity has a limited right to dispose of it,
	on acquisition cost broken down by balance sheet items at the beginning of the current accounting period, increments, disposals and transfers of such assets at cost during the current accounting period and the balance at the end of the current accounting period,
	of the breakdowns by component broken down by balance sheet item, showing the amount of adjustments at the beginning of the current accounting period, changes during the current accounting period and the balance at the end of the current accounting period,
	on the valuation date at which the financial statements are prepared at fair value or equity method, indicating the effect of such valuation on profit or loss and equity

Source: own processing

Proper disclosure of securities in the financial statements is important in order to inform the various users who rely on their accuracy in evaluating the information they receive from their interests.

10. CONCLUSION

In the contribution, we summarized the requirements for classification and measurement of financial instruments under applicable IFRSs, and we also outlined the classification and measurement options under the new IFRS 9 Financial Instruments, which will only come into force in the future, but its finalization is already known. In the second part we introduced the characteristics of the securities according to the Slovak regulation, as well as the possibilities of sorting them into individual species (Meluchová, J., Mateášová, M. (2015). We listed the valuation quantities required for the accounting of securities and the initial and subsequent valuation of the securities. We have introduced requirements for the reporting of securities in the financial statements under the Slovak legislation (Tumpach, M. – Baštincová A, 2014). At the same time, we have described the characteristics of financial instruments under IFRS, including securities as described by the Slovak legislation.

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Hedging and Risk

CFEBT RISK TRIANGLE OF ACCOUNTING ERRORS AND FRAUDS – ANALYTICAL TOOL OF FRAUD RISK MANAGEMENT AND REDUCTION OF INFORMATION ASYMMETRY BETWEEN CREATORS AND USERS OF ACCOUNTING REPORTS

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Abstract

The objective of the present contribution is to evaluate the risk of accounting errors and frauds in small companies predominantly operating in trade based on analysis of the CFEBT risk triangle for financial statements reported for the years 2011–2017. The CFEBT risk triangle is applied in form of a case study aimed at risk detection of occurrence of accounting errors and frauds for a selected sample of companies. A detailed analysis of a risk of impact of accounting errors and frauds is illustrated in the case study of an accounting unit chosen from the sample of companies evaluated. The CFEBT risk triangle was designed as an analytical tool for detection and management of accounting errors and frauds in the context of Czech accounting standards and International Financial Reporting Standards (IFRS) and as a tool for reduction of information asymmetry between creators and users of accounting reports. The risk triangle of accounting errors and frauds may be used for various groups of users of financial statements to enable these users to make decisions at individual levels of access to accounting information. Future research into the CFEBT risk triangle focuses on performance of complex analyses for individual types of business activities of small and middle-sized companies in the context of Czech accounting standards and IFRS.

Keywords: CFEBT risk triangle of accounting errors and frauds, fraud risk management, creative accounting, fraud detection

1. INTRODUCTION

The uppermost principle of accounting is a “true and fair view”, also referred to as a fair view (fair presentation). Accordingly, for seasonal products, the fair value and net present value are applied in the EU member states, the international accounting environment. Beside a conscientious approach to the management and recognition of values, accompanied by responsibility for method selection and processing of objective data, there exists “creative accounting”, characterized by efforts to adapt economic transactions or accounting treatment of such transactions to intentions of a certain group of financial statements users. Economic transactions in the sense of negatively creative management, apart from valuation, may be illustrated by an example of an accelerated sale of assets for low prices without creating an adjustment first, which situation leads to corporate “tunnelling”. Similar fictitious cases of sale and purchase and other non-transparent operations are shown in accounting records as the final balance. An intentional distortion of data in accounting as such in pursuance of gaining benefits may be done in virtually all items of the balance sheet. However, such distortion of facts may accomplish the elements of a fraud as a wilful crime, subject to punishment in accordance with the Penal Code. But how to establish a fraudulent intent of employees or the company’s management? To establish a fraudulent intent to gain an unjustified or illegal benefit is still a “tough nut to crack”.

The objective of the contribution is to analyse causes and impacts of a risk of accounting errors and frauds using the CFEBT anti-fraud triangle and, based on such analysis, to evaluate a risk of accounting errors and frauds in a selected group of small companies in the context of Czech accounting standards.

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2. PRIOR LITERATURE

The financial statements represent a significant source of information for users of financial statements, i.e. the owners, Corporate Governance, potential investors, the state, creditors, customers and the public. On the one hand, people using accounting records as the main source of information request top quality of the records, while on the other hand it is impossible to ignore various influences and motivations of the creators which significantly affect the content of particular items of records. Regarding the information asymmetry acting among record creators and users, it is necessary to search for tools and possibilities enabling its decrease, or identification of risk of the reliability of the presented accounting records (Drábková, 2017).

Results of a Romanian research showed that more than a half of managers included in the sample has a tendency to change accounting principles, which benefits a company's image to a considerable extent, and in addition, there exists a certain aversion against risks as far as managers themselves are concerned (Balaciu, Bogdan, Feleaga & Popa, 2014).

Prevention and detection of accounting fraud is also engaged in Steve Dawson's publication. Steve presents the six elements of an effective anti-fraud program – fraud risk assessment, control activities, information, communication, anti-fraud environment and monitoring (Dawson, 2015). Every year, fraud investigation departments for corporations receive dozens of reports on potential accusations of fraud. A number of publications and research studies maintain that it is important to find a method of fraud risk detection, with an emphasis on a solution that is fast, e.g. (Bloomfield, 1995). Moreover, results of research of a large telecommunication company imply that technical inspections manage to detect no more than one third of fraud cases. More complex cases are uncovered by a number of technical and social-technical inspections inside and outside of companies (Goode & Lacey, 2011). The main methods (strategies) of creative accounting and accounting frauds were selected with the view of analysis of the impact of creative accounting techniques on the M-score CFEBT model. These selected techniques are subsequently reflected in the quality of a true and fair view of accounting. (Drábková, 2013; Drábková, 2015). Based on results of previous research into the information capacity of accounting and testing of M-score of the CFEBT model conducted by a number of case studies in the context of Czech accounting standards and IFRS, a complex tool of risk management of accounting errors and frauds in the form of a risk triangle of accounting errors and frauds was designed, which includes analyses of three basic risk areas (vertices) of accounting errors and frauds. (Drábková, 2017).

Reduced information asymmetries for users of accounting reports may have significant impact on the decision-making process of these users. It must be stated that the risk of financial statement fraud is costly for investors and may impair the credibility of the audit profession. The publication recommends a preventive detection of accounting errors, including unveiling of causes of such errors (Wuerger & Borba, 2014). An interesting view of aspects of accounting frauds is provided by a study that examines whether certain types of frauds in financial reporting result in a higher probability of judicial proceedings against independent auditors. The authors expect that it is probable that auditors will be considered responsible for a failure to uncover common frauds or frauds rooted in fictitious transactions. The authors conclude that it is more probable that auditors will be sued in cases where frauds have originated from fictitious transactions (Bonner, Palmrose & Young, 1998).

Specific recommendations for the management to introduce internal auditing and set up different organizational internal controls for preventing frauds of financial statements were published in the form of results of a case study carried out in a construction company operating in the construction industry (Horvat & Lipicnik, 2016). A proposal of methodology for distinguishing probability of truthfulness of accounting reports as a tool for differentiating between fraudulent and truthful reports was published by authors Purda and Skillicorn (Purda & Skillicorn, 2015).

Furthermore, rigging of accounting is related to the motivation to curtail tax duties, or, as the case may be, money laundering. Results of export frauds are presented in the approach described in the Deep Learning model classifying Brazilian exporters regarding the possibility of committing frauds in exports. This model managed to detect certain anomalies, for example money laundering (Ladeira, Carvalho, Marzagao & Ieee, 2016).

3. METHODS AND RESEARCH QUESTIONS

The analysis was engaged in certain tested periods for selected accounting units in the range of available data of seven accounting periods, i.e. accounting periods of the years 2011–2017. The selected sample is made up of accounting units of small companies, depending on the average number of their employees, which is greater than 10 and does not exceed 50. The accounting units operate predominantly in trade. In total, as many as 5,838 accounting units were included in the analysis. The analysis works with reported data of financial statements of companies from Albertina database.

Where it tests risks of causes (motivation) of occurrence of accounting errors and frauds, the analysis operates with as many as 24,576 under test (data rows) for the analysed accounting periods of selected accounting units in order to calculate seven selected financial indicators, median value, frequency of occurrence in the set, and consequently, the calculation of a deviation from the median value, the standard deviation and the ratio of a deviation to the standard deviation.

In addition, the total of 24,960 tested elements (including zero values) is included in the analysis of 14 selected items of financial statements for calculating the percentage of a share of an accounting entry in the turnover, median values, frequency of occurrence in the set, and subsequently, for calculating a deviation from the median value of the set, the standard deviation, and the ratio of a deviation to the standard deviation.

For the analysed financial indicators and selected items of financial statements, median values were determined, and three levels of median value calculations were processed, where a modus in the set of values signifies a value with the highest frequency in the given set. A median divides a certain set of values into two parts of equal size, and it is understood that a minimum 50% of values is higher than the median and 50% of values is lower than the median. A mean is a classic arithmetic mean of analysed values.

The analysis of impact risks proceeds to calculate the M-score of the CFEBT model in its three levels, or more specifically, a test of an impact risk of accounting errors and frauds in reported financial statements.

The calculation of the CFEBT score is based on a hypothesis that upon observances of changes of cash flows net of taxes and generated earnings (CFEBT) before taxes for five accounting periods as a minimum, changes have a tendency to yield similar results. The M-score was designed as an analytical test in the first level, which is proceeded by a detailed analysis of non-monetary expenses and revenues in a modified calculation of the second M-score level. To achieve a complex overview of the relations, a calculation of the third M-score level is included, which monitors the influence of relations of generated outputs of cash flow and CFEBT in the operational area.

A single accounting unit was selected in order to present a detailed analysis in the case study, and for this accounting unit, the first M-score level was determined above the established level of materiality, and a detailed analysis was conducted to ascertain the risk causes and impacts of rigging of financial statements with respect to account errors and frauds beyond a fair and true view of accounting.

The analysis employed the CFEBT model, designed for the individual levels of the analysis delving into detailed relations between financial statements:

The first M-score level of the CFEBT model is defined as follows:

$$CFEBT = \frac{\sum_{t=1}^n CF_t - \sum_{t=1}^n EBT_t}{\sum_{t=1}^n EBT_t} * 100 \quad (1)$$

Where

CF: total increase or decrease in cash before tax during the analysed period t

EBT: earnings before taxes generated for the analysed period

If $CFEBT \geq \text{materiality}$, detailed tests of relations of impacts in the second and third levels followse. (Drábková, 2015)

The second M-score level of the CFEBT model (modified CFEBT score) complies with the established hypothesis as to the relation between the generation of cash flow and earnings. Monetary means and monetary equivalents for the analysed accounting period are modified by changes in assets and liabilities, which represent a possible inflow and outflow of monetary means. The sum of EBT gained in the analysed period is modified by expenses reported as non-monetary expenses:

$$CFEBTm = \frac{\sum_{t=1}^n CFm_t - \sum_{t=1}^n EBTm_t}{\sum_{t=1}^n EBTm_t} * 100 \quad (2)$$

Where

CFm: increase in cash flow before taxes in the analysed period, modified by reported future cash-in and -out flows

EBTm: earnings before taxes gained for the analysed period modified by non-monetary expenses

The third M-score level of the CFEBT model expresses a ratio of operative cash flow generated in the analysed period and modified earnings in the analysed accounting period. Where expressed in percentage, this value presents a ratio of generated cash flow from operating activities to generated earnings which include only those expenses and revenues that are directly transformed in cash flow in the current or future accounting periods:

$$CFEBTom = \frac{\sum_{t=1}^n CFom_t - \sum_{t=1}^n EBTm_t}{\sum_{t=1}^n EBTm_t} * 100 \quad (3)$$

Where

CFom: increase in operative cash flow before taxes in the analysed period

EBTm: earnings before taxes gained for the analysed period modified by non-monetary expenses

For a statistical analysis of causes of accounting errors and frauds, seven financial indicators were designed for the individual accounting periods, and these indicators allow a comparison between cash flow and earnings in terms of accounting, i.e. net of income taxes:

$$\text{Return on Assets (ROA)} = \frac{EAT}{TOTAL\ CAPITAL} \quad (4)$$

$$\text{Cash Flow Return on Assets (CFA)} = \frac{CF\ AT}{TOTAL\ CAPITAL} \quad (5)$$

Where

CFAT: cash flow of the given accounting period after taxes

$$\text{Return on Equity (ROE)} = \frac{EAT}{EQUITY\ CAPITAL} \quad (6)$$

$$\text{Cash Flow Return on Equity (CFE)} = \frac{CFAT}{EQUITY\ CAPITAL} \quad (7)$$

Where

CFAT: cash flow of the given accounting period after taxes

$$\text{Expense Personnel Productivity (EPP)} = \frac{OPERATIONS}{PERSONNEL\ EXPENSES} \quad (8)$$

Where

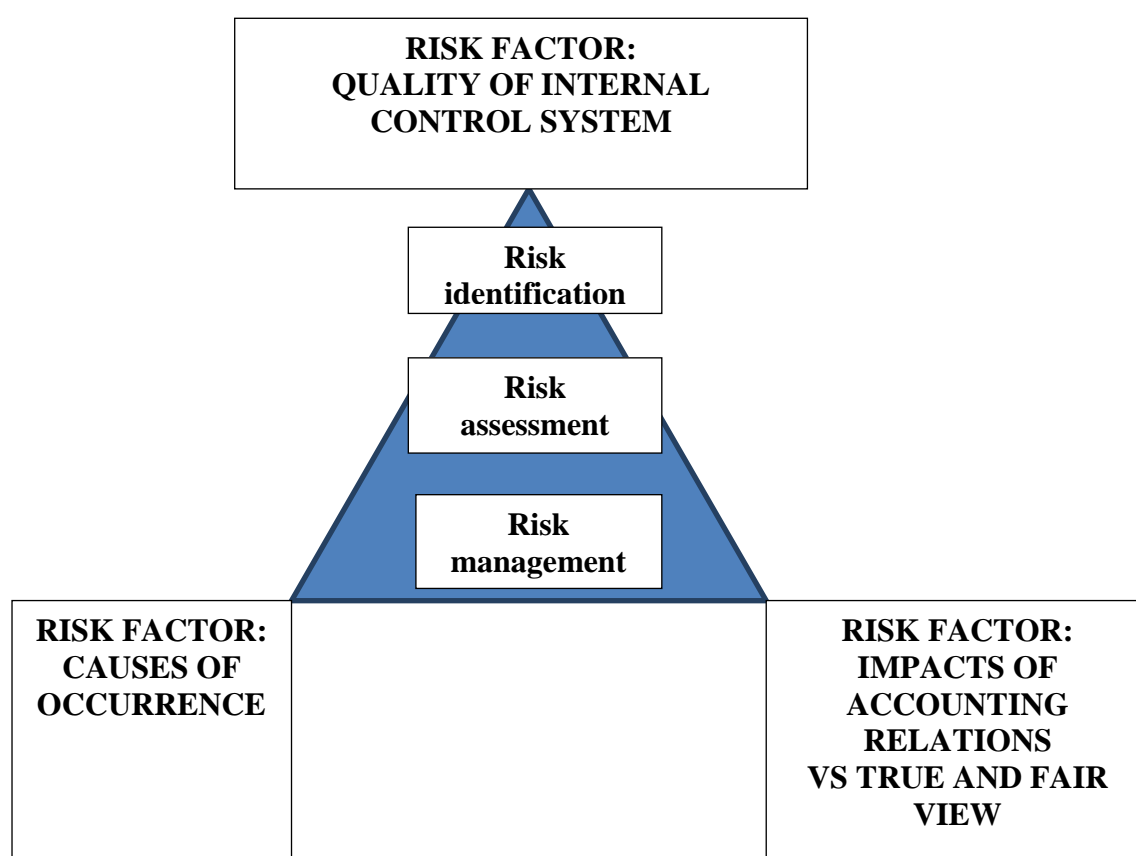
OPERATIONS..... operating revenues (sales of goods and performances)

$$\text{Financial Personnel Productivity (FPP)} = \frac{CF_{AT}}{\text{PERSONNEL EXPENSES}} \quad (9)$$

$$\text{Total Accruals to Total Assets (TATA)} = \frac{EAT - CF_{AT}}{\text{TOTAL ASSETS}} \quad (10)$$

The CFEBT risk triangle was designed as a complex tool for detection and management of accounting errors and frauds on the basis of many-year research into relations and links of financial statements in the context of Czech accounting standards and IFRS. The following image presents the individual vertices of this triangle as partial components of risk analysis – three red risk factors (areas), which yield individual results and are subsequently evaluated as to their mutual links.

Figure 1. CFEBT risk triangle of accounting errors and frauds



Source: own output

Figure 1 illustrates a triangle of risk of accounting errors and frauds affecting the following areas of the internal control system:

- Risk identification,
- Risk assessment,
- Risk management.

The triangle comprises 3 groups of risk factors of accounting errors and frauds. Essentially, the outcome of evaluation thereof is subject to the fact if risks are evaluated by users who have at their disposal internal information from in-house sources of the accounting unit concerned (management, internal and external auditors, owners,...) or by users who analyse risks only using information derived from financial statements, annual reports and other publicly accessible information sources.

- Quality of internal control system:

This area of the anti-fraud system assesses individual risk factors that represent opportunities to manipulate financial statements – for examples of such risk factors please see Chapter 7.4. These imperfections of the internal control system enable authors of accounting to carry out manipulations beyond the scope of the true and fair view of accounting within the bookkeeping system. For auditors, this area embodies a framework of reliability tests, i.e. the evaluation of the extent to which auditors may rely on a functioning control system of the given accounting unit, effectiveness of management of error and fraud prevention processes, addressing to responsibilities and processing data techniques, which all have an influence on accounting. Users who have at their disposal only external information sources typically evaluate risks on the basis of disclosed information about risk management, the set-up of the system of transaction prices with affiliated persons and the quality of set-up processes, which information is disclosed mainly in the notes to financial statements, annual reports, websites of business corporations, certificates of quality, etc.

- Causes (reasons for) of occurrence:

This component of the anti-fraud system analyses the actual reasons for motivation or pressure to manipulate financial statements. Reasons for manipulating financial statements may vary, ranging from greediness, to dire living conditions any employees, managers or owners might have, and to any objectives to be granted a credit, subsidy, an important contract, etc. This area of the triangle compares median values of selected significant accounting items and indicators calculated in the area of causes and reasons of the triangle of accounting errors and frauds. The proposed anti-fraud system is based on calculations of 7 variables (ratios especially ROE, ROA, personnel costs to revenue ratio and accruals ratio and CF ratios). Financial analysis results are interpreted in terms of risk detection and in the context with the evaluation of risks of impacts (consequences) in a true and fair view of accounting using the three-level CFEBT model.

Next, any detected risk accounting areas are included in correlation relations in order to determine any manipulation techniques used in respect of financial statements (methods of creative accounting, which deforms the true and fair view of accounting to a considerable extent).

- Impacts of accounting relations vs true and fair view

This part of the proposed anti-fraud system epitomizes its foundation stone and consists in the risk identification of manipulation of financial statements using the CFEBT model in its three levels.

At the first level of CFEBT, M-score is calculated with the aim of determining compliance of EBT and changes in funds and cash equivalents (cash). The second level of M-score modifies EBT and a change of CF by undervalued or overvalued items based on non-cash costs (revenues) and expenses (income) that are not included in EBT. The third level represents M-score of operating CF and modified EBT.

Results of the CFEBT approach and the statistical analysis may be used for improving the quality of decisions at various levels: not only for independent users to increasing the efficiency of the internal control system, but also for setting up of management processes of managerial accounting, which proceeds from financial accounting reports.

The CFEBT risk triangle of accounting errors and frauds works with the median value parameter of a set, and in addition, the triangle avails specific tools for risk management, set up based on results of a data analysis for a selected sample of comparable accounting units. These tools enable us to specify the risk management process according to requirements of a user who decides on the basis of reported accounting data.

The tolerance constitutes values of variables $X_1, X_2 \dots X_n$ differing within the range \pm of the stated % of the average value, and should this be the case, these values are evaluated as equal. Values are expressed in percentage terms. As a matter of fact, tolerance has an impact merely on the frequency of determination of the modus. We expect the required minimum value of frequency for an item with the highest frequency for calculated indicators to stand at 10%.

Where narrowing is determined, the number of processed elements may be restricted out of the total number by the stated percentage. Values are expressed in percentage terms.

The foreseen certainty is based on the Gaussian curve theory, which stipulates that where a deviation is three times higher than the standard deviation, this threefold deviation covers ca. 99% of all values used for the given statistical calculation. Accordingly, a ratio of a deviation from the median value and standard deviation is calculated. Where the value of the ratio exceeds the stated multiple of the standard deviation (Certainty), the variable is evaluated as a risk valuable. The value of 3 signifies the certainty that items not identified as risk items are non-risk items with a 99% certainty.

Moreover, a selection of a median value variant allows for an option to choose the method of calculating a deviation of each element. Arithmetic mean, median or modus may be used as a medium value.

4. CFEBT RISK TRIANGLE – RISK OF CAUSE

The required frequency of 10% in a number of subjects, i.e. 5838 and 24,576 elements (rows) included in the calculation stands at 2,458 as a minimum. The requested frequency represents the maximum of reached frequency for financial indicators and analysed subjects.

In pursuance of determining the median value of seven indicators and the median value of modus in the analysed number of 24,576 elements, the highest achieved frequency for the contemplated certainty equals 139, calculated with certainty 4 – see Table 1 below.

Table 1. CFEBT risk triangle – risk of cause: Calculation of seven indicators for tolerance 0, certainty 3.5, modus

Indicator		ROA	CFA	ROE	CFE	EPP	FPP	TATA
Tolerance	%	0	0	0	0	0	0	0
	value	+/- 0	+/- 0	+/- 0	+/- 0	+/- 0	+/- 0	+/- 0
Narrowing	%	0	0	0	0	0	0	0
	number	0	0	0	0	0	0	0
No. of elements	after narrowing	24576	24576	24576	24576	24576	24576	24576
	Total	24576	24576	24576	24576	24576	24576	24576
Min value	after narrowing	-6440	-6440	-42041.5	-103300	0	-24900	-6440
	total	-6440	-6440	-42041.5	-103300	0	-24900	-6440
Max value	after narrowing	3079.79	3490.79	43950	43950	3283811	123900	3490.7
	total	3079.79	3490.79	43950	43950	3283811	123900	3490.7
Mean		2.6	5.83	16.22	26.43	2162.88	79.09	5.83
Median		3.41	6.63	1074	17.92	1006.66	32.61	6.63
Modus – median value		0	4.77	0	100	0	0	4.77
Frequency		114	27	112	33	97	15	27
Certainty		3.5	3.5	3.5	3.5	3.5	3.5	3.5
Standard deviation	Value	5977	69.98	5977	1200.03	22805	1022.54	69.98
	Min	-7034	-92.09	-7034	-8616	0	-24.35	-92.09
	Max	7353	49.81	7353	3654	144	121.2	49.81

Source: own output

Based on the highest frequency data, it was discovered that an inadequate frequency was achieved – only 0.56% of the total analysed elements. Narrowing down to 2% was determined on the basis of the evaluated risk elements. A search for the required frequency by determining of a suitable tolerance follows.

The required frequency was achieved during the analysis of the total of 24,576 elements (accounting periods), with tolerance set up at 5%. Table no. 2 illustrates frequencies for the individual seven indicators. For such tolerance, the maximum frequency achieved was 2,593, i.e. 10.5% for the EPP indicator, and similarly, the other indicators show a frequency achieved within acceptable significant percentage values.

The next analysis phase tested modality in form of calculation of vertices in order to evaluate suitability of using the modus for calculating the median value of the given set.

The course of frequencies considered, the course of a function was observed, and the issue whether it is possible to identify one significant vertex on the Gaussian curve. The use of modus in order to gain the most accurate calculation of the median value was confirmed.

The following table shows resultant values of frequencies accomplished for individual indicators of risk of occurrence (cause) of accounting errors and frauds.

Table 2. CFEBT anti-fraud triangle – risk of cause: Calculation of seven indicators for tolerance 5, certainty 3.5, narrowing 2%, modus

Indicator		ROA	CFA	ROE	CFE	EPP	FPP	TATA
Tolerance	%	5	5	5	5	5	5	5
	value	+/- 0.23	+/- 0.39	+/- 0	+/- 0	+/- 0	+/- 0	+/- 0
Narrowing	%	2	2	2	2	2	2	2
	number	492	492	492	492	492	492	492
No. of elements	after narrowing	23592	23592	23592	23592	23592	23592	23592
	Total	24576	24576	24576	24576	24576	24576	24576
Min value	after narrowing	-35.29	-30.79	-115.9	-116.15	173.93	-117.04	-17
	total	-6440	-6440	-42041.46	-103300	0	-24900	-700
Max value	after narrowing	35.04	38.91	152.85	213.97	10712	407.45	2
	total	3090.79	3490.79	43950	43950	3283811.11	123900	206
Mean		4.62	7.71	16.56	25.81	1430.1	51.02	-3
Median		3.41	6.63	10.74	17.92	1006.7	32.61	-2
Modus – median value		0.23	2.95	0.77	8.49	623.13	11.51	-1
Frequency		1717	1149	1797	1562	2593	1617	4437
Certainty		3.5	3.5	3.5	3.5	3.5	3.5	3.5
Standard deviation	Value	10.25	10.75	34.38	40.45	1585.1	81.1	3.52
	Min	-3.47	-3.14	-3.39	-3.08	-0.28	-1.59	-448
	Max	3.4	3.35	4.42	5.02	6.37	4.88	0.84

Source: own output

Table no. 2 above clearly illustrates that the modus considerably deflects from the mean and median values. For this reason, an attempt was made to harmonize these three median values by increasing the stated value for narrowing down to the value of 5%. However, since this procedure did not result in the required proximity of the values, the initial narrowing, based on the originally set-up tolerance equalling 0, was used for detection of risk items of the selected seven indicators.

The above-specified calculations are performed using a statistical method which reveals median values, deviations of data from a median value, the standard deviation.

The subsequent calculation of a ratio (deviation of an accounting value from a calculated median value of a set) and the standard deviation generate information about a risk factor in the sense that values of the analysed data entity deviate from median values of the set of taxable entities.

A median value is determined in the framework of the analysis for each item contained in the database of the entities observed for every accounting period included.

Table 3. Overview of detected risk items of financial indicators – risk of occurrence of accounting errors and frauds in 2011–2017

INDICATOR	ROA	CFA	ROE	CFE	EPP	FPP	TATA
No. of risk items in the set	484	856	1165	1206	962	990	856
No. of risk items in the set in %	2	3	5	5	4	4	3

Source: own output

Table no. 3 above shows the total number of evaluated risk indicators of the financial analysis for individual analysed accounting periods of 2011–2017, in total 24,576 of analysed items (calculations) for as many as 5,838 accounting units.

The result of detected risk areas of the financial analysis may be presented as a reflection of an informative capacity of the calculated financial health of the accounting unit observed in relation to comparable accounting units. In addition, it is possible to determine whether the given accounting unit deviates from financial indicators and, as the case may be, to determine the areas of financial indicators that are deviated from.

The evaluated risk items in the given accounting periods of the selected accounting unit are used in comparison with results of a risk analysis of the impact of accounting errors and frauds.

In this part of the anti-fraud CFEBT approach, the three-level calculation of the M-score proceeds from the interrelation of cash flow change (CF) and earnings (EBT), all after the tax aspect has been excluded.

5. CFEBT RISK TRIANGLE – RISK OF IMPACT

The detection of risk items for individual entities may be followed by a detailed analysis, which examines the impact of these items in a long-term context of relations between financial statements.

This vertex of the anti-fraud CFEBT approach, the M-score of the first, second and third levels is calculated. Comparison of individual percentage values of the score makes it possible to evaluate any impacts of CF and EBT over a longer period (at least five accounting periods).

The calculation of CFEBT enables a user of financial statements to amend his/her view of financial statements by interrelations of cash flow and earnings at various levels (grades). The first M-score level works as an analytical test, which provides a decision-maker (user) with information as to how the given accounting unit manages to transform generated earnings into cash flow during at least five accounting periods. If the first M-score level oscillates above the level of significance (10% materiality is considered here), a test of impacts on financial statements follows in form of a detailed test of the second level of the modified M-score.

Using non-monetary revenues and other adjusting items, the second level of the modified M-score “straightens” CF and EBT in an optimal transformation of profit (loss) before tax in a change of cash flow. In addition, a decision-maker is provided information about significance of those accounting items that contribute to a change of EBT. The modified score should be reduced to an acceptable value of the stated significance (materiality) in order to decrease a risk of accounting errors and frauds.

Consequently, the third M-score level computes the ratio of operating cash flow and modified EBT, which provides information as to whether the selected accounting unit is able to effectively transform the operating costs and revenues into the operating cash flow within a monitored period (five years as a minimum), again after a tax aspect of income tax has been excluded.

In the detailed analysis of an impact risk of accounting errors and frauds, the selected accounting unit generated the following results of the M-score for monitored accounting periods of 2011–2015 (first level is significantly above the materiality threshold stated at 10%).

Table 4. CFEBT for a selected accounting unit – three levels of CFEBT model

Analysis of impact risk of accounting errors and frauds - 1 st through 3 rd levels of CFEBT	1 st M-score level	2 nd M-score level	3 rd M-score level
Taxable entity	Basic	Modified	M-Operative
M-score	-105	-16	0
Δ CF in TCZK*	-23 111	859 290	1 027 875
Σ EBT in TCZK	467 341	1 028 299	1 028 299

* an increase in cash flow of reviewed accounting periods in thousand

Source: own output

Table 4 implies that the first M-score level of CFEBT is calculated at -105%. This value highly above the materiality threshold represents a significant vacillation between cash flow generation and earnings before tax for the monitored period from the first through the fifth years for the selected accounting unit. This minus value specifies that the earnings achieved by the selected accounting unit are significantly higher than the generated cash flow.

Table 5. Modification items of 2nd M-score of level CFEBT model

Item no.	Description of item (modification, informative) *	n in TCZK	n / EBT x 100 in %
1	Receivables-1, from members	0	0
2	Receivables -2, from controlled and managed entities	-19 918	-4
3	Receivables -3, from accounting units with substantial influence	-272 286	-58
4	Receivables -4, trade receivables	-484 353	-104
5	Receivables -5, from institutions	-6 432	-1
6	Receivables -6, other receivables	125 248	27
7	Estimated accrued revenues	3	0
8	Advance payments provided	702	0
9	Inventory	-65 827	-14
10	Tangible fixed assets	-752	0
11	Intangible fixed assets	-1	0
12	Long-term financial assets	-49 001	-10
13	Payables to members	-1 898	0
14	Payables to controlled and managed persons	9 462	2
15	Payables to accounting units under substantial influence	0	0
16	Trade payables	-99 041	-21
17	Advance payments received	1 855	0
18	Payables to employees (institutions)	-59	0
19	Other payables	-29 348	-6
20	Estimated accrued expenses	-459	0
21	Payables from notes and debentures	0	0
22	Credits and loans received	0	0
23	Depreciation	1 883	0
24	Adjustments	0	0
25	Reserves	-559 075	-120
26	Gains or losses from acquired property in assets	0	0
27	Gains or losses from revaluation of assets and liabilities	0	0
28	Gains or losses from capital interest	0	0
29	Gains or losses from revaluation in transformations	0	0
30	Receivables from adjusted registered capital	0	0
31	Accrued revenues	-687	0

32	Deferred expenses	-5 394	-1
33	Equity capital	-79 480	-17
34	Total revenues from assets and material	649	0
35	Total expenses on sale of assets and material	225	0

* EBT and CF non-cash and informative items: changes in values over the reviewed period

Source: own output

Table 5 illustrates individual modification and informative items, including their percentage share in EBT. These data bear a great importance for the final evaluation of the risk of rigging of financial statements based on overall results of the risk analysis of causes and impacts of accounting errors and frauds.

In the detailed testing of the second M-score level, the first M-score level was reduced from 105% to 16%, see Table no. 4. Nonetheless, the M-score continues to show a value higher than the contemplated materiality.

The third stage of M-score calculation as reflected in Table no. 4 computes a ratio of the generated operating cash flow and EBT after modification by costs that are not transformed into expenses. With respect to the fact that the operative M-score equals 0%, interrelations between EBT and cash flow may be interpreted as inconsistency rooted in financial or investment areas, in addition to the operating area.

With the aim of evaluating the risk of motivation - cause of occurrence, the risk level of the selected accounting unit in individual accounting periods was assessed as arising from the above-mentioned results of the case study, based on the whole sample of small accounting units predominantly operating in trade. A statistical analysis and comparison with the median value of the set for the seven proposed financial indicators and selected accounting items were conducted.

Tables nos. 6 through 8 show the risk areas that were determined as deviating from comparable accounting units and which were identified as risk areas in the risk analysis of occurrence of accounting errors and frauds.

Table 6. Evaluation of risk for ROA of the selected accounting unit during 2011–2015

Balance day	ROA	Frequency	Deviation	Deviation/standard deviation	Risk evaluation
31.12.2014	0.51	1289	0.28	0.03	
31.12.2015	1.5	928	1.27	0.12	
31.12.2011	4.2	556	3.97	0.39	
31.12.2012	4.79	591	4.56	0.44	
31.12.2013	39.73		39.5	3.85	Risk

Source: own output

As Table 6 shows, in the year 2013, the ratio value of the share exceeds the stated multiple of the standard deviation (certainty = 3.5) and the variable is evaluated as a risk variable for the year 2013 with respect to return on equity.

Table 7. Evaluation of risk for FPP of the selected accounting unit during 2011–2015

Balance day	FPP	Frequency	Deviation	Deviation/standard deviation	Risk evaluation
31.12.2011	-104.76	45	-116.27	-1.43	
31.12.2014	-69.45	63	-80.96	-1	
31.12.2012	-18.1	221	-29.61	-0.37	
31.12.2015	132.46	174	120.95	1.49	
31.12.2013	599.13		587.62	7.25	Risk

Source: own output

Similarly, based on the evaluation of the selected accounting unit in the framework of the analysis of a comparable sample, personnel productivity ensuing from cash flow is evaluated as a risk area for the year 2013, with a ratio of deviation and standard deviation at 7.25 – see Table 7.

Table 8. Evaluation of risk for accounting items of the selected accounting unit during 2011–2015

Balance day	Change in reserves, adjustments in TCZK	Frequency	Deviation	Deviation/standard deviation	Risk evaluation
31.12.2013	-203.472	1	-203.47	-9.51	Risk
31.12.2012	-41.379	1	-41.38	-1.93	
31.12.2011	-30.049	1	-30.05	-1.4	
31.12.2014	-10.41	1	-10.41	-0.49	
31.12.2015	1.842	1	1.84	0.09	

Source: own output

After the risk of non-monetary was evaluated statistically in the reported accounting position Reserves and Adjustments, the accounting period of 2013 saw a significant deviation from the medium value of the whole sample of accounting units, see Table 8, value -9.51.

In the context of these evaluated risk accounting items and by comparison of results of the impact analysis (CFEBT M-score of three levels), an essence of the incongruence between the cash flow generation and EBT for monitored periods of 2011–2015 may be evaluated.

In accordance with the analysis of modification items in Table no. 5, reported reserves were released by 120% (share in EBT), or rather, costs decreased, specifically in the accounting period of 2013. Furthermore, the observed period showed a significant reduction in the reported trade receivables – a drop by 104% in EBT without an impact on an increase in liabilities. Users of financial statements may find useful the information that long-term financial fixed investments decreased by 10% from EBT.

It may therefore be stated that the decrease in cash flow for the monitored period of the years 2011–2015, which was unaccompanied by a decrease in EBT, was caused by releasing future liabilities reported before the tested period in costs, specifically reserves, in compliance with Czech accounting standards. Since the accounting unit considered performs its reporting obligations as per Czech accounting standards, where accounting reserves for future liabilities are expensed at their origin, and subsequently, actualization or cancellation of liabilities is reported as a decrease in costs by releasing a reserve, or an increase in EBT during a monitored period. Accordingly, the decrease in the equity capital for the monitored period in the share of 17% in EBT was not caused by releasing reserves.

A user of financial statements of the monitored accounting unit who is to observe the aforementioned conclusions of analysis of risk area detection for the areas of reserves and adjustments and a decrease in the equity capital will have to follow the notes to the financial statements for 2013 in order to find detailed information on a release of reserves and reduction of the equity capital.

A satisfactory answer may be found in information contained in a collection of documents attesting to the fact that the reserves released were the reserves for potential damage connected to judicial proceedings. These are costs that are not tax-eligible, i.e. a tax motivation for rigging cannot be excluded.

The decrease in the equity capital was explained by dividend payout, i.e. without any impact on EBT. The impact analysis in the second M-score of CFEBT detected incongruence between EBT and cash flow at the amount of 16%. The score corresponds to a 17% decrease in the equity capital caused by dividend payout.

6. CONCLUSION

Generally speaking, the accounting unit presents no risk in the context of Czech accounting standards with the view of risk detection of causes and impacts of accounting errors. However, specific conclusions of the analysis may be used for reducing any information asymmetry and decision-making of external and internal users of financial statements according to the level of their access to accounting information.

In particular, auditors may focus their attention to examining the adequacy of generating and using of reserves and adjustments, in connection with payments of dividends to shareholders, and evaluating whether creative accounting methods (such as Big Bath) have been applied intentionally to intensify a loss in the given period and to enable a subsequent rapid increase in earnings, chiefly for the purpose of payment of unreasonable dividends for profit-earning accounting periods. Moreover, potential investors and owners may ask similar questions on the basis of results obtained by the risk analysis. For the needs of effective management, the areas, identified in the above manner, may be instrumental for improving the quality of accounting management and informative capacity of accounting with regard to evaluating the financial health of a business corporation. Efficiency of internal control systems is tested within the third vertex (risk factor) of the proposed CFEBT risk triangle of accounting errors and frauds, which, however, is not addressed in the present contribution.

We believe that the risk triangle of accounting errors and frauds may be used on various decision-making levels of users of financial statements with respect to their decision-making process. In addition, the evaluation of this complex tool may reduce the information asymmetry *vis-à-vis* authors and users of reported accounting outputs such that users are able to make a best-quality decision based on accounting data available to them.

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THE MEASUREMENT OF HEDGE EFFECTIVENESS IN DERIVATIVES ACCOUNTING – IAS 39 VS. IFRS 9

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Abstract

Effectiveness is an object of interest of miscellaneous social and technical sciences. Hedge effectiveness in accounting theory is understood as a relative measure determining an extent of mutual offset of changes in the market value of the hedged position by changes in the market value of the hedging instrument. Hedge effectiveness assessment aims to demonstrate that a derivative used to hedge the balance sheet item or planned transaction actually meets (or will meet) its objective. This is due to the fact that accounting and financial reporting in particular, allow to hide to some extent the use of derivatives, which can be used for speculative purposes, not hedging. An intention of using derivatives is crucial for potential investors in estimating the risk of investing in entity's shares. The measurement of hedge effectiveness has been widely researched in finance, econometrics and in hedge accounting regulations. IFRS 9 introduces some crucial changes to derivatives accounting and effectiveness testing and therefore it should be critically reviewed. The purpose of this paper is to present the idea of hedge effectiveness measurement and compare the current approach under IAS 39 with those introduced by IFRS 9. This will allow to define advantages and disadvantages of IFRS 9 and assess its impact on quality and usefulness of financial statements in terms of presenting true and fair view of hedging and risk management.

Keywords: *hedge effectiveness, market risk, derivatives accounting, hedge accounting, IFRS 9*

1. INTRODUCTION

The great majority of the factors, having an impact on management effects, are characterized by variability. An increase in the risk level connected with the most important market variables, that is currency rates, interest rates and asset prices has been observed recently. Lower predictability of these variables results from a progressive process of deregulation of the greatest world economies where levels of interest rates, prices and exchange rates ceased to be controlled by governments and international institutions, and became an outcome of the interplay of market forces. The risk management process, consisting in its appropriate identification and taking actions connected with maintaining it at an acceptable level, emerged as one of the key aspects of the contemporary business activity (Jajuga, 2012, p. 328).

A hedge effectiveness measurement is one of the most interesting matters from the broadly defined issues of the risk management. It can apply both to the management process itself and particular hedging instruments. The effectiveness measurement process became a subject of research, especially in econometrics. The International Accounting Standards Board showed its interest in hedge effectiveness which resulted in implementing this issue in the International Accounting Standard no 39 Financial Instruments: Recognition and Measurement (IAS 39).

Nowadays, we are facing significant changes concerning hedge effectiveness regulations. The newly developed standard – International Financial Reporting Standard 9 Financial Instruments (IFRS 9) – with a mandatory effective date for annual periods beginning on or after 1 January 2018. Considering this implementation a discussion on consequences which this standard will cause in the derivatives accounting, in particular, in hedge accounting where a measurement of hedge effectiveness is an indispensable element, seems to be well-founded.

An aim of this paper is to present the issues of hedge effectiveness assessment in derivatives accounting in the light of implementing IFRS 9 and to analyze potential opportunities and threats, resulting from IAS 39 substitution, having an influence on the informative value of financial statements. An analysis of content of documents (IAS 39 and IFRS 9) was used as a research method in the paper.

2. HEDGE EFFECTIVENESS AND AIMS OF ITS MEASUREMENT

The category of effectiveness is present in lots of areas of a human being's activity, and in the last years it acquired the status of a specific imperative at each level of management (micro, mezzo, macro) and in each sector of economy (private, public, non-profit). Prevalence of the effectiveness category in the scientific discussions is reflected in the numerous approaches to define this concept. P. A. Samuelson and W. D. Nordhaus associated the "effectiveness" concept with the "efficiency" category (Samuelson, Nordhaus, 1999, p. 60). While J. A. F. Stoner, R. E. Freeman and D. R. Gilbert perceived effectiveness as an assessment criterion of efficiency (Stoner, Freeman, Gilbert, 1997, p. 610). On the other hand P. Drucker treated the both categories as independent of each other, stating that effectiveness is "doing things right", whereas efficiency is "doing the right things". In the light of this definition effective actions do not have to be efficient, and efficient action do not have to be effective (Dudycz, 2005, p. 138 and 139).

Hedge effectiveness in the accounting theory is understood as a relative measure determining a degree of mutual offsetting of the changes in fair value of the hedged position with the changes in the fair value of a hedging instrument (Ożga, 2016, p. 147). A measurement of hedge effectiveness aims at showing that a derivative instrument used for hedging a specific balance item or a planned transaction, actually fulfills (or will fulfill) its role. It is extremely important as the International Accounting Standards allow hedging derivatives to be recognized in a different way from the instruments of a speculative nature. It is so called a hedge accounting model, and its implementation is optional, conditioned by proving high effectiveness of the hedge. An application of hedge accounting reflects an economic sense of hedging transactions and that is why it informs better the recipients of the financial statements about the real objective of derivatives held by an entity. It may be argued that use of hedge accounting provides a guarantee that derivatives were being used for hedging, not a speculation. In turn this is of the utmost importance from a point of view of risk assessment of an investment in stocks and shares of a particular business entity.

High effectiveness of a hedge was defined for the first time at the beginning of 90s of the XXth century. The American Securities and Exchange Commission (SEC), allowed using derivatives accounting for futures contracts in the event of a high correlation between changes in the fair value of a derivative and a hedged position. The desired value of the correlation coefficient acc. to SEC was defined as a range from 60% to 167%. In the mid-1990s, this institution revised the concept in this matter, considering this range as too wide and a decision was made to narrow it to 80–125%. In the short time majority of business entities accepted that view as a binding principle, although it had never been imposed formally by legislators in the United States. Thus, the range of 80–125% became the generally accepted standard in the market practice in North America, and it was implemented into the International Accounting Standards (IAS 39) and the Polish accounting law.

According to IAS39 hedge effectiveness should be deemed as high when the following conditions are jointly fulfilled:

- at the inception of hedge relationship and in the following periods its effectiveness in offsetting the changes in the fair value of the hedged position generated by the risk subjected to the hedge is expected to be high.
- the actual level of hedge effectiveness is in the range of 80–125%.

Considering again the American approach in this matter it should be mentioned that under US GAAP (United States Generally Accepted Accounting Principles) there is a requirement that the hedging relationship is to be highly effective in offsetting the changes in the fair value caused by existence of the hedged risk both on the day of establishing and during the hedge (Ożga, 2016, p. 148–152). Effectiveness measurements should conform with the hedging strategy adopted for a specific relationship. As opposed to IAS 39 a quantitative measure of high effectiveness is not specified in American standards.

3. PRINCIPLES OF THE HEDGE ACCOUNTING MODEL

In accounting law there are two models of derivatives accounting:

- a general model, based on a presentation of such instruments as financial assets or liabilities at fair value through profit or loss,
- hedge accounting which allows a different presentation of such instruments in the financial statement, maintaining symmetric recognition of the changes in the value of the hedged position and the hedging instrument.

Under accounting law financial instruments which are not intended for hedging, must be classified as assets or financial liabilities at fair value through profit or loss (held for trading). For each balance sheet date they are measured at fair value, and its changes are recognized in the profit and loss account. For derivatives which were concluded for hedging purposes an entity may (but does not have to) use different accounting principles, that is so called hedge accounting after meeting the requirements specified in IAS 39.

It should be emphasized that applying hedge accounting depends on, after fulfilling specified requirements, a free selection of an entity which is a specific exception in the standard accounting principles for financial instruments (Helin, Drabikowska, Sztuczyńska, 2005, p. 106). It is also worth mentioning that hedge accounting can be implemented selectively. As a result it is acceptable to use both hedge accounting and the general model simultaneously, to similar derivative instruments.

Hedge accounting model has an objective to reflect an economic sense of hedging in the accounts and financial statements. Therefore, speculative derivatives should be excluded from this model obviously.

No changes to the general model of derivatives accounting were made in IFRS 9. However, some elements of the hedge accounting were modified significantly. It should be strongly emphasized that applying hedge accounting is still a facultative solution and it can be used in a selective way, that is with reference to the derivatives designated freely by an entity. Additionally, formal requirements referring to appropriate documentation of risk management aim and strategy have remained unchanged.

In IFRS 9 some changes were introduced in a scope of designating financial instruments for hedging relationships. Financial assets or financial liabilities not being derivatives can be designated as a hedging instrument, although it is allowed when their aim is to hedge a currency risk and their fair value or a currency component can be reliably measured. A scope of instruments which can be used for hedging was extended by any non-derivative assets and financial liabilities measured at fair value through profit or loss except:

- financial liabilities at fair value through profit or loss, for which the change in the value resulted from a credit risk is recognized in other comprehensive income,
- a currency component of financial assets and liabilities, which are an investment in a capital instrument and are measured through other comprehensive income.

IAS 39 in general prohibits designating a derivative instrument as a hedged item. The only exception is a purchased option or an agreement with an embedded purchased option. In IFRS 9 significant changes were implemented in this area. It is allowed, namely, to designate an aggregated position, being a combination of a balance sheet component or a planned transaction with an embedded derivative instrument, as a hedged item. Unlike the solutions used so far, it is not required that the derivative is an option embedded into the principal agreement under IFRS 9. Any derivative embedded in other non derivative item will be considered as a hedged item. For example, a coal producer can hedge a planned sales transaction against a price risk on the international market, by concluding a swap contract for sale of the commodity. Due to the fact that coal is traded on the international platforms (e.g. ICE or global COAL) in the US dollars, a business entity is exposed additionally to the currency risk. Nowadays, under IAS 39, only the planned transaction of coal sale can be designated as the hedged item. Under IFRS 9 an entity will be able to designate a combination of the planned sales transaction with the derivative hedging a commodity risk (coal swap) as a hedged item.

According to IAS 39 hedge accounting principles must not be used when:

1. the hedging instrument expired, was sold, was terminated or executed (it does not apply to a situation of rolling instrument if it is an element of the risk management),
2. the hedge ceases to meet the criteria of the hedge accounting, particularly the high effectiveness requirement,
3. an entity revokes the hedging relationship,
4. occurrence of the planned transaction is no longer expected.

According to IFRS 9 hedge accounting can be terminated when the existing relationship ceases to meet requirements of this model, after considering possible ways of its adjustment, described in the further part of this paper. It includes expiry, sale, termination or execution of the hedging instrument (except rolling), and also when the occurrence of the planned transaction being hedged is no longer expected.

In IFRS 9 a possibility of revoking the hedging relationship prospectively is not allowed, what is permitted in IAS 39. Therefore, this changed should be evaluated positively, because a possibility of voluntary discontinuation of hedge accounting in some can be used to manipulate financial results, what is inconsistent with the true and fair view – one of the superior accounting principles.

A new solution proposed in IFRS 9 is the possibility of implementing hedge accounting to a part of the relationship or its entirety, whereas IAS 39 refers only to the entire hedging relationship.

4. TESTS AND METHODS OF MEASURING HEDGE EFFECTIVENESS

While analyzing the hedge effectiveness definition it should be stated that in the accounting law entities are required to verify effectiveness of the hedging relationship in two dimensions (Bunea-Bontas, 2012, p. 57–62): ex ante and ex post.

Testing effectiveness ex ante aims at prove that at inception of the hedge and afterwards the hedging instrument will offset, to a large extent, changes in the fair value of hedged item. The basic impediment for this type of tests is an uncertainty regarding future changes in the fair value of the instrument and the hedged item. However, an entity is required to prove that changes in these variables will offset mutually in the future. In accounting theory there are different methods which can be for such test, particularly an analysis of historical data, simulations (including Monte Carlo) and statistical methods (Ožga, 2016, p. 148–150).

Testing effectiveness ex post aims to prove that designated relationship was effective since its inception to the test date. The ex post assessment is based on real data. It is performed by comparing historical changes in the fair value of the hedging instrument and the hedged item, which have taken place since the day of hedging relationship designation.

It should be noticed that accounting standards do not specify precisely any method for measuring hedge effectiveness. Entities are free to choose the method. Nevertheless the selected model should be consistent with the risk management strategy adopted by an entity, and appropriate measurement procedures should be specified in the documentation of hedging relationship. Many effectiveness measurement methods may be found in literature, among the most popular ones are:

- the dollar offset method,
- the regression analysis,
- the volatility reduction method,
- the value at risk method.

Discussion of particular methods is out of the scope of this paper as its is to discuss changes resulting from implementation of IFRS 9.

5. HEDGE EFFECTIVENESS UNDER IFRS 9 – THE MOST IMPORTANT CHANGES COMPARING TO IAS 39

Effectiveness of the hedging relationship is a fundamental determinant of implementing the hedge accounting model. In IAS 39 there is a requirement to test effectiveness in both the ex ante and ex post approach. In both tests an entity is obliged to show a high level of effectiveness which was defined in this standard in a quantitative way, namely by 80–125% range. Only when the result of both tests is at acceptable level (80–125%), a given derivative may be recognized in books and a financial statement according to the hedge accounting principles.

Hedge effectiveness will be changed significantly after implementing IFRS 9. A quantitative measure of hedge effectiveness defined currently by 80–125% range will be removed. It is a very important change as this condition actually decides whether or not hedge accounting may be implemented. According to IFRS 9 hedge accounting can be used in the case when the relationship was documented in an appropriate way and meets the following effectiveness criteria:

1. there is an economic relationship between the hedging instrument and the hedged item,
2. an influence of a credit risk on the changes in the fair value is significantly lower than an influence of the hedged risk (being a result of the economic relationship),
3. a hedge ratio is a result of the relationship between the hedged item and the hedging instrument.

Therefore, according to IFRS 9 the hedging relationship does not have to be fully effective. The changes in the fair value of the hedging instrument in relation to the hedged item are most important, and not the real degree of offset of these values. The mentioned changes in fair values of both elements of the hedging relationship should not differ significantly. At this point it is worth mentioning that such differences can occur, but they should have an accidental character, that is they cannot be foreseen or assessed when a test is performed.

Another important change of IFRS 9 comparing to IAS 39 concerns types of the tests used for the hedge effectiveness assessment. IFRS 9 requires to test the effectiveness as of the day of hedge designation, whereas during its life an identification of potential sources of ineffectiveness is the most important. Moreover, pursuant to IFRS 9 the aim of the effectiveness measurement is to verify the degree of matching the hedge to risk exposure. In other word to check if the hedging relationship will minimize identified ineffectiveness. Those requirements bind an entity to test hedge effectiveness only prospectively (ex ante). Such a solution may be perceived as a simplification comparing to the IAS 39 requirements, because an ex post test is hereon longer required. However, it should be noticed that this simplification is apparent, because the way of determining the effective part of the hedging instrument has been uphold by IFRS 9. It cannot be greater than an absolute change in the fair value of the hedged position. Therefore, entities will be still obliged to assess the hedging instrument as of each balance sheet day and the changes in the hedged item values during the relationship. These elements are currently (in IAS 39) a basis of conducting the ex post tests. Summarizing, ex post test formally will not be required under IFRS 9,

whereas a significant part of activities connected with it must be still performed in order to assess the mentioned effective part of the hedging instrument.

The changes proposed in IFRS 9 in the scope of the hedge effectiveness measurement are also reflected in the way of making assessment of the test results. The quantitative condition, legitimized by IAS 39 caused that the effectiveness tests also had to be characterized by quantitative features. However, the standard did not indicate appropriate methods of such assessment. IFRS 9 has not defined these methods either. However, there is a requirement that the method used includes a characteristic of the hedging relationship, particularly a source of potential non-effectiveness. Abandoning the mandatory quantitative character of the hedge effectiveness tests means that qualitative assessment methods can be used as well. This change is very important and may stimulate new forms of hedge effectiveness assessment, in particular new subjective criteria of defining high effectiveness. Another important proposal of IFRS 9 is that a change in the effectiveness measurement method can be made over the life of the hedging relationship, what is currently not allowed in IAS 39. However, it is worth emphasizing that such a possibility will be allowed when there are circumstances which have an impact on the results obtained. Consequently, if on basis of the accepted method the relationship turns out to be ineffective, an entity will be allowed to change this method into another one which, according to it, will prove high effectiveness. This means a possibility of applying different methods of measurement during a year which raises doubts about consistency in the accounting information. Such latitude is prohibited for other balance sheet items (e.g. stocks valuation).

6. CONCEPT OF REBALANCING

An interesting solution proposed by IFRS 9 is a concept of so called rebalancing, that is adjusting the hedge prospectively. An entity can take such a decision when low effectiveness of the established hedging relationship is found. In such case the entity does not have to cancel an application of the hedge accounting model if only an objective of such a relationship – which is hedging a specific type of a risk – has not been changed. Under IAS 39 such an operation is inadmissible.

Rebalancing in its essence means periodical adjustment of a portfolio, meaning a substitution of the instruments held with other which better reflects an objective of an investor (Fabozzi, Markowitz, 2011, p. 617). It is mainly connected with a change in the hedge ratio, being a relationship of the nominal value of the hedging instrument to the nominal value of the hedged item. If a correlation between these elements is perfect, the hedge ratio equals 1. In case of weaker correlation the hedge ratio maximizing hedge effectiveness will be lower than 1, and will fluctuate in time. Therefore changing the hedge ratio during the relationship can improve expected effectiveness significantly, as a result of which an entity will not be forced to close the hedging relationship and terminate hedge accounting, to which it is obliged under IAS 39. Moreover, it should be emphasized that an entity is not obliged at all to change the hedge ratio, if its management thinks that in the future current ratio will provide high effectiveness. Therefore, even in case of hedge ineffectiveness, the entity may use hedge accounting, if it is able to prove high effectiveness in the future (*ex ante* test).

Rebalancing the hedge is unacceptable when an objective of the risk management in relation to the specific relationship has changed. Then, the hedge accounting model must be terminated. The derivative, of course, can be designated prospectively to a new hedging relationship.

Rebalancing is expected to create more effective hedging relationship for both accounting and the risk management process (Rashty, O'Shaughnessy, 2012, p. 22–27). Therefore entities will be able to present an economic effect of their derivatives in their financial statements, to the substance-over-form principle. In practice entities use active hedging more frequently and widely, which means quick adjustments of the positions held in financial instruments to the current market situation. The

fact is that the principles stipulated in IAS 39, limits an application of hedge accounting model which allows to present an economic effect of derivatives in a reliable and credible way.

7. CONCLUSIONS

One of the objectives of developing IFRS 9 was to simplify the hedge accounting and adopt this model to the risk management principles used by the entities. As a consequence users of the financial statements should be informed better about a risk. Comparing IFRS 9 with IAS 39 it can be stated that this objective has not been fully realized, and an opportunity to improve the hedge accounting model significantly was not fully utilized. IFRS 9 undoubtedly implements some improvements in the hedge accounting principles like rebalancing, an option of designating a risk component as a hedged item or a wider catalogue of the hedged items (considering derivatives), which should improve a presentation of risk management effects in the financial statements. However, these positive effects are leveled partly by changes in the effectiveness measurement methodology.

Lack of obligatory *ex post* tests weakens the importance of actual hedge effectiveness. This change should be evaluated negatively because it makes the hedge accounting application conditional only on expectations of an entity for high effectiveness. Those expectations are affected by uncertainty and subjectived definition of high effectiveness. In practice, actual effectiveness of hedging often turns out to be insufficient for the instruments and the strategies which are not perfectly matched to the hedged item. Omission of the *ex post* measurement can result in using less effective or more risky instruments to manage risk. It is worth emphasizing that the hedge accounting in its present form (under IAS 39) can be used as a control tool in the risk management process. It is connected with restrictive requirements of applying the hedge accounting. If a given instrument cannot be qualified as an effective hedge in the hedge accounting model, it can be thought, with high degree of confidence, that it will not be a sufficiently enough good tool for the risk management. However, such control function must be performed with caution considering some imperfections in the hedge accounting model itself.

Another disputable solution of IFRS 9 is a derogation of a quantitative measure of hedge effectiveness (the criterion of 80–125%). It will cause that entities will have to define these criteria by themselves, what can lead to worse comparability of the financial statements. Majority of them will, undoubtedly, still abide to 80–125% range as it is currently in the US. However, arbitrariness in defining high effectiveness will be used certainly by many entities to loosen the requirements of the hedge accounting model. As a result the instruments that do not qualify for the hedge relationship under IAS 39 can be included in this voluntary model. Another important change to effectiveness assessment is a possibility of changing the measurement method during the time of the hedging relationship. It may lead to manipulating with methods and in effect, artificial upholding of the hedge accounting in relation to the instrument which ceased to offset the effects of the hedged item significantly. The may be tempted to present high hedge effectiveness, and not to achieve actual effectiveness, which may lead to deteriorating credibility of the financial statements (Andrzejewski, Dunal, 2016, p. 174). Low reliability of the information included in financial statements may lead to a distortion of entity's perception in the eyes of investors and undertaking non-optimal investment decisions.

Solutions proposed by IFRS 9 may pose a risk of recognizing the instruments and the strategies of low economic effectiveness according to the hedge accounting. In turn, it can mislead the users of financial statements, who can be convinced about a low risk of a company due to hedging while the derivatives used do not cover fully the risk exposure and they can even increase it. For this reason the changes in defining the high hedge effectiveness implemented by IFRS 9 can cause limitations or even liquidation of the control function of the hedge accounting.

To sum up, it should be stated that IFRS 9 deviates from the rules based approach (e.g. the quantitatively defined measure of the high hedge effectiveness) in favor of principles based

approach. At the moment it cannot be determined unequivocally if it is the right way, especially, as far as the issue of the derivatives is concerned. Some solutions are good and expected by the market, although some arouse controversies. With time it will turn out if more freedom in documenting the high hedge effectiveness has contributed to improving quality of the financial statements. It must be borne in mind that freedom should be used in a proper way, in order not to be tempted by abuses (so called moral hazard). For this reason it seems that in the perspective of the forthcoming changes the greatest challenge for the modern finance and accounting will be activities – in particular of international institutions, societies and market practitioners – aiming at increasing ethical awareness in the accounting world.

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HEDGE FUNDS – TIME TO FIND RELIABLE INFORMATION

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Abstract

Hedge funds are making headlines everywhere. They are not subject to a regular accounting regime, are not followed as a class of investment or otherwise through a uniform data base, and do not have set reporting standards. The size of the industry is growing, and funds are being used to circumnavigate security regulations. The research question is the “How do hedge funds exert convert power, and how can the pubic be better protected from this power” this paper argues that it is time that an international agreement to improve transparency through enforcement of reporting standards most probably similar to existing IAS rules. The paper discusses incomplete current regulations which may affect hedge funds, use of derivatives, lack of reliability of reporting provided by funds managers, and corporate governance issues.

Keywords: Hedge Funds, Derivatives, Corporate Governance, 13F, IAS 9, IAS 13, IAS 21, IAS 32

JEL Classification: M14, M20, M21

INTRODUCTION

The enigma that is hedge funds has grown to a position of tremendous power in both financial and corporate circles. Hedge funds are now being used more frequently as vehicles to leverage control over large corporate entities. The headlines are multiple now, with hedge funds run by recently convicted “Pharma Bro”, Martin Shkreli, who became the “most hated man in America” by raising the price of a single pill by a factor of 56 after using his hedge fund to buy out a drug company and leverage its position with a single life-saving drug (Bloomberg, Aug. 4, 2017). We also learned that Hedge funds are now going back into credit default swaps, the esoteric derivative that contributed significantly to the credit crisis of 2007–9. (Financial Times, August 23, 2017). The fact is that these investment vehicles are as contentious as they are arcane, and have arguably one of the poorest track records of any investment category. Sources in the Industry who track events claim that 3% of funds have been reported for (Lack, 2011). Perhaps most disturbing is that they are not regulated as closely as many other types of investments, but have far-reaching effects.

Before delving in to the issue at hand, it will be clear throughout that the research method builds on previous research done by the author into the dangers of derivatives, which have been described by Warren Buffet as “financial weapons of mass destruction” As there is virtually no substantive regulation of hedge funds at the present time, and therefore, the need for transparency is the focus of the work.

LITERATURE REVIEW

Hedge funds are frequently discussed in financial journals, and have been a centre of attention for professionals especially since the Credit Crisis of 2007–9. A comprehensive volume on the subject was compiled by Rand Corporation (Dixon 2013). Questions are also raised regarding reporting and consistency (Bollen & Pool, 2007) and impact on markets (Agarwal et al, 2009; Ben-David et al, 2013). A collection of fraud cases has been compiled by Bruce Johnson (Johnson, 2010), however, it deals with cases before 2000, though it is an interesting perspective on how frauds may happen. The increased use of hedge funds by corporate entities should also be looked at by accountants, however, a survey of accounting texts shows that the practice of dealing with investment portfolios as assets, and their

valuation is not an issue well covered (Nobes, 2012; Stolowy, 2013; Warren, 2009; Reeve 2009; Keiso, 2010).

WHAT IS A HEDGE FUND?

The correct answer is that a hedge fund has no specific definition. Probably the easiest answer, though not entirely accurate is to say that it is a mutual fund for qualified investors (sometimes called QIBs) and accredited purchasers. This is a very select group, for whom there is a minimum entry amount, usually in six to seven figures in US dollars. Further, there are usually no benchmarks, and funds can remain locked in for a period of time. Typically, corporations, other large funds and wealthy individuals are shareholders. Individual, or retail investors cannot invest directly in hedge funds. An additional requirement is that the manager must have a minimum amount of his own money invested. A hedge fund can use any strategy it wishes, including leveraged and derivative strategies. (Zask, 2011)

The size of the industry is of notable importance. First, the NYSE is the largest exchange of its kind in the world. Market capitalization as at Dec 31, 2016 was \$20.2T (NYSE 2017), whereas the total of the top 100 Hedge Funds from Barron's (Barron's, June 17, 2017) was 1.5T by comparison. The industry was valued in early 2017 by an industry journal at \$3T (Gurufocus, Jan. 20, 2017) while claiming that this was after significant cash outflows in 2016. Note, the this does not mean that hedge funds control that proportion of the equities market, but it does indicate the increasing size of the industry, and the growing importance of those behind them. The size of the hedge funds industry is about 15% of the size of the NYSE. The difference is that a significant part of the hedges is leveraged, so the figure indicates greater influence than the number suggests.

The type of hedge fund is also critical. Many use strategies requiring the use of derivatives. Using the information provided for the 100 funds in the Barron's group (one was eliminated because of insufficient data), the breakdown, which was done by market capitalization – a more reliable indicator of potential market impact than mere number of funds – indicates the two largest groups, Multi-strategy and Derivatives-based, have approximately 80% of the market. The funds are described by Barron's using a more refined description. The broader categories used herein are for the purposes of this paper.

Figure 1. Hedge funds by Strategy



CURRENT REGULATION – 13FS

Quarterly, denizens of finance await the release of the results of SEC 13F forms, which have been around since 1975, but gained renewed interest with the Madoff scandal, to see where money has been placed, while awaiting impact on the price of shares. In 2010, the SEC announced that it was revising the use of 13F forms as part of the Dodd-Frank reforms and was setting up a special department to monitor the reports. This form only reports long positions on stocks, but can still impact markets. In May 2017, for example, price of shares of the parent of Snapchat increased by 8% shortly after the release of the 13F forms when it was shown that several large hedge fund managers such as George Soros held large positions on SNAP. They, of course, dumped holdings at about this time because of concurrent news of class actions by shareholders. The 8% was intra-day. Class actions were widely reported in the financial media, and SNAP hit new lows at this time from the time of its recent IPO. The implication is occult in market terms. If it is possible to short the stock at the time of the rise in price, a small fortune could be made on the decline. But information regarding ownership prior to release was owned by hedge funds and not generally available to the public.

Coverage of hedge funds through both 13F and reports on their activities in the financial media continue to affect the behavior of other players in the market. There are several serious problems with this situation. To date, though 13F forms are required, there are few signs that they are either enforced, or verified for accuracy (White, 2011). In view of the increasing presence of institutional investors (believed by the SEC to own more than two-thirds of domestic equities), and the increased presence of hedge funds themselves.

13F depositions are helpful for several reasons. A study undertaken to determine price manipulation used quarterly 13F forms for the period 2000–2010 and concluded that there were abnormal returns for stocks held by hedge funds on the last day of every month. (Ben David, 2013). The conclusion of the study is that there is some manipulation of price by some hedge funds, particularly those in the top quartile. But there are other issues as well.

ADDITIONAL CONSIDERATIONS

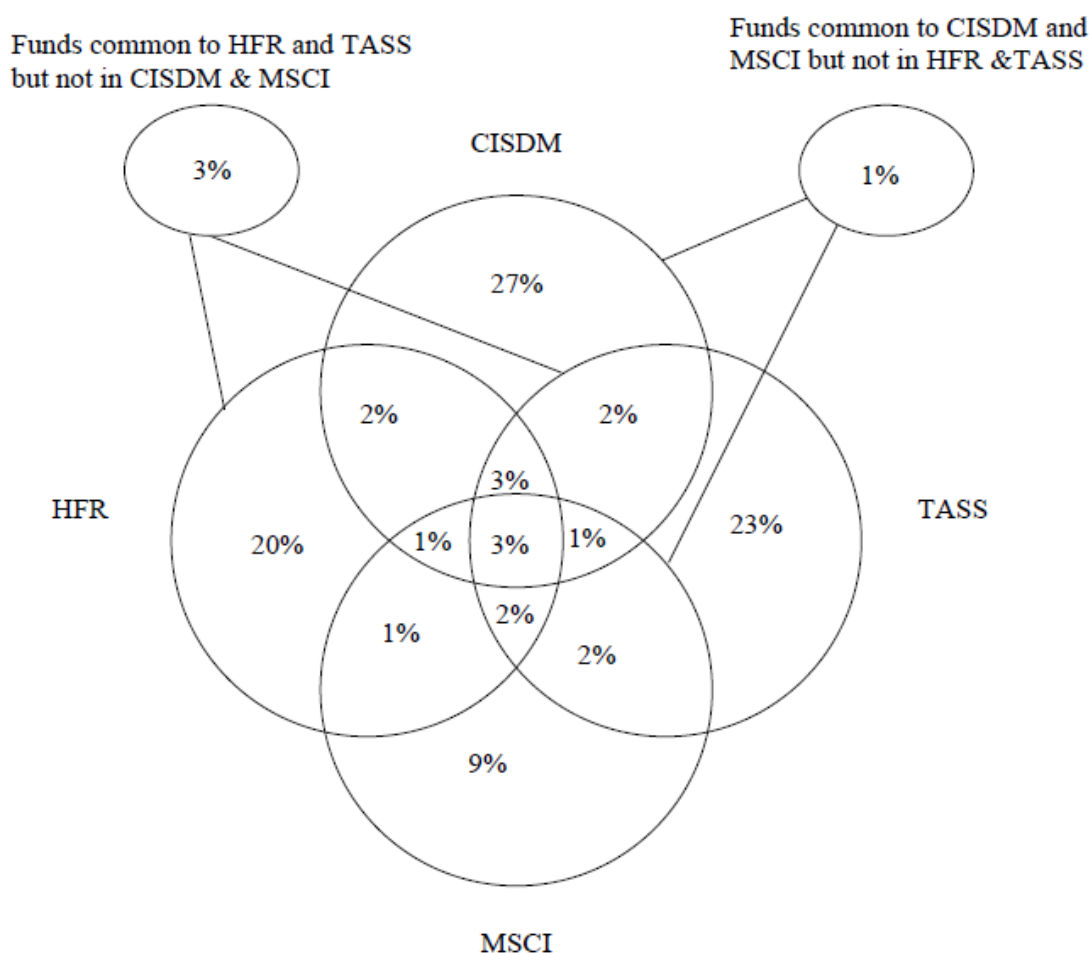
Do managers report the results, and the holdings honestly? In another study, it was found that 10% of the returns in the database were somehow distorted, and that a plausible explanation was that the fund managers had avoided reporting losses. (Bollen, Pool, 2009). In order to do this, the authors applied some sophisticated statistical models. This finding is more significant than it seems. In fact, there should be sufficient information available to be able to confirm this finding. But it can only be shown indirectly. The reason for this is obvious – there is no standard reporting procedure for returns. Reporting is left to an internal board, which is comprised of representatives of participating investors. (Lack 2011)

It also appears that manager discretion is related to better results. In a study which has shown a positive co-relation between freedom of managers an excess return, we encounter, once again, several challenges (Agarwal et al. 2009) First, the study is based on reported results, which we have established can be questionable because the results are reported by the managers themselves. The second problem, as one reads the paper is that the base-line (LIBOR is suggested) may be a bit low compared to the risk level. The third problem, illustrated in a diagram from the paper, shows that different funds used in the study were presented from different data bases. The conclusions of the study can only be reliable if the data is uniform and the information is verifiable from a reliable source. The diagram speaks for itself. The hard work of the researchers is to be applauded, but the conclusions should be questioned. The point is not to attack the researchers, but to point out that uniformity in evaluating funds is an elusive exercise. The paper itself is an interesting read.

Figure 2. Hedge funds by database source

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This figure shows the percentage of hedge funds from the four databases namely CISDM, HFR, MSCI, and TASS at the end of our sample period (2002).



CORPORATE GOVERNANCE

The following quote comes from a study done prior to the credit crisis:

Unlike mutual funds and pension funds, hedge funds are able to influence corporate boards and managements due to key differences arising from their different organizational form and the incentives that they face. Hedge funds employ highly incentivized managers who manage large unregulated pools of capital. Because they are not subject to regulation that governs mutual funds and pension funds, they can hold highly concentrated positions in small numbers of companies, and use leverage and derivatives to extend their reach. Hedge fund managers also suffer few conflicts of interest because they are not beholden to the management of the firms whose shares they hold. In sum, hedge funds are better positioned to act as informed monitors than other institutional investors. (Brav 2008)

This quote states the reason, after study, why hedge funds are so effective. It is clear that the thrust is that regulation breeds constraints which in turn impact the results. This is the whole point of regulation, which is intended to introduce equality in access information and market access. What the quote is saying, in effect, is that given enough money and power, hedge fund manager can really

exploit the situation and get results. It is particularly interesting that this passage was written just prior to the credit crisis, and includes the observation that a key advantage is that they may “*use leverage and derivatives to extend their reach*”. The response to that observation cost hedge funds on average, as noted previously, 21%, and cost the world economy the equivalent of the Japanese economy (Reinhart, 2009). The list of effects, including the bankruptcy of Lehman Brothers, and the disappearance of Bear Stearns and Merrill Lynch as independent purveyors of hedge funds, is lengthy. Innocent businesses, due to the collapse of the mortgage industry, which in turn lead to the virtual collapse of real estate market and the industries that supply builders. The lesson learned is that when hedge funds collapse, collateral damage is significant. This, to many students of finance, was history repeating itself. Leveraging played a major role in the crash of 1929, when banks bought up large blocks of loans, which ultimately failed (Reinhart, 2009).

We are left now with hedge fund superstars, who have variously assumed the mantle of “Pharma Bro” Shkreli, who saw an opportunity squeeze funds out of AIDS victims, and saw nothing wrong with it. Jeff Smith of Starboard is a media star himself due to two very public battles to take control of the boards of directors Darden Restaurants and Yahoo. Yahoo is now known as Altaba, and at the close of 2016 was operating at a loss, while it showed a profit of \$4.2billion two years before. The take-over and change of name have stimulated interest in the stock – on the date the name changed, the price jumped 11%. The stock is up 65% in the first 8 months of the year compared with 10% for the S&P500. Darden is up 14% over the same period after suffering a decline of 13% in the latter 3 months. This kind of price volatility looks good, and offers an opportunity for derivatives players to benefit. In the long run, as the crisis has shown, the benefits for both shareholders, the market and the economy are questionable.

DERIVATIVES

The role of derivatives in world markets has been in the spotlight for many years. As shown earlier, 80% of the 100 top hedge funds on the Barron’s list use derivatives. These funds total approximately \$3 trillion in market value. There are several things to bear in mind about derivatives:

1. The largest part of the derivatives market is over-the-counter and is unregulated
2. Derivatives is a zero-sum process. That means that there is a winner and there is a loser.
3. The value of a derivative can be extremely volatile.
4. The nature of derivatives is to benefit from the use of an asset without actually owning it.

This exercise can influence the value of the underlying asset.

An example of how derivatives can be dangerous occurred in 2008, when in June futures were placed on some \$13 trillion worth of oil. This created upward pressure on the price, which hit an all-time high of \$148 per barrel. Within six months, the futures totaled \$3,5 trillion and the price dropped to \$35 per barrel. (Muir, 2016). It was an excellent opportunity for those who knew what was going on to make money both on the way up by going long, and on the way down by shorting oil. Those responsible, and hedge funds are in the picture, created panic in oil markets, and shortages around the globe. It should also be noted that five banks control 90% of the unregulated over-the-counter (OTC) action in derivatives. (Muir, 2016) This places them in a situation where they are both the packager and vendor of these instruments while at the same time are the trader in these securities (Cohan, 2011).

Hedge funds typically straddle their plays, and thus, by taking out options both ways, may benefit if the price moves significantly, up or down. Thus, it is in the interest of hedge funds to promote volatility. It is revealing that Long-Term Capital Management, with a Nobel Laureate in the executive, was bailed out in 1998, the reason being that the trillion-plus failure that would be incurred could collapse the global financial system (Stiglitz, 2010). This may explain why the derivatives market has grown over the years. The Bank for International Settlements is the clearing house for the OTC market, and reports that as at Dec 31, 2016, the gross market value of all outstanding contracts is \$15 trillion. The affected assets were almost \$500 trillion. No information is available on who holds

what positions on which assets. Hedge funds which invest in these instruments stand to lose as they did, for example in 2007–8, when the average hedge fund lost 21%. Funds run by Citadel, for example, lost 55% (Ferguson, 2009).

Derivatives, as investments have an additional attribute that is seldom discussed. Investment in the classical economic sense is an activity that will provide a return on investment. The concept which is central to this notion is that the return is a proxy for income. The very nature of derivatives is not consistent with this vision. Some derivatives are used as a hedge against risk, but the largest group of users are speculators. These are typically not investors looking for income opportunities in the classical sense. They are looking to pocket a windfall by finding weaknesses which they can exploit. At the current moment, the outstanding balance of these contracts is almost as much as the annual GDP of the US.

The additional problem is, again, lack of transparency. Reporting ownership and parties to transaction are not mandatory. Financial instruments such as derivatives are covered by IAS 9 which covers financial instruments. Depending on the nature of the transaction, IAS 21, which covers changes in foreign exchange rates, IAS 32 regarding disclosure and presentation of financial instruments and IAS 13 regarding fair valuation methods, may be invoked (Ramirez, 2015). The regulatory framework for greater transparency exists but is not enforceable.

CONCLUSION

Market advocates consider as received wisdom the notion that regulation is an impediment to profitability and growth. This has limited currency when looked at more closely. After the crash of 1929, the SEC was set up in 1934 as an independent agency to enforce measures put in place under several separate acts to keep markets under its aegis as fair as possible. One requirement is that listed companies must provide audited statements on a regular basis for public perusal. This is a measure which has helped level the playing field by improving transparency and has allowed participants from all over the globe to invest in American stocks with confidence. Other markets in, for example the UK and Canada have followed this pattern, resulting in growth in both primary and secondary equity markets.

What we have learned is that an increasingly larger segment of this market is not transparent. Ownership and governance issues are becoming less verifiable due to the participation of one class of investor – the hedge fund. Through use of unregulated instruments (derivatives) and due to lack of accountability to the public, this group can exploit opportunities not available to other funds and investors due to regulations put in place to protect those very parties. This puts them not just at a disadvantage but at risk of being collateral damage.

There are IAS regulations (9, 13, 21, 32) which in part address the valuation, reporting and presentation issues arising from the lack of transparency existing with hedge funds presently. It is time that an international agreement on reporting by these bodies be put in place to control the activity. The vulnerabilities at the present time are all too clear.

An accountant works primarily for the management of the company, ensuring reliable information for those who own and run the company. Perhaps as vital is reliable information provided to potential investors, the government, and indeed the public. A multi-trillion-dollar industry, capable of leveraging its position is most certainly worthy of such scrutiny.

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CREDIT IN EXPECTED CREDIT LOSS MODEL ACCORDING TO IFRS 9. IMPLICATIONS FOR BANKS

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Abstract

The following article discusses the credit as a financial instrument in the light of new expected credit loss model and its implications for the bank. As a result of the introduction of International Financial Reporting Standard 9 Financial Instruments the expected credit loss model will soon replace the current incurred loss model, which is functioning in the accordance with the requirements of International Accounting Standards 39 Financial Instruments: Recognition and Measurement. This will happen on 1 January, 2018. The work is divided into four parts. The first part depicts the credit as a financial instrument. It also indicates such negative phenomena as asymmetry of information, distortion of information and adverse selection, which may all affect the credit risk. Also, high risk credits, i.e. subprime credits have been described. The second part presents the expected credit loss model in accordance with IFRS 9 and depicts its scope as well as the division of the entities' credit exposures into three stages. The third part of this article contains the evaluation of potential effects of implementation of expected credit loss model for banks. In the last part, the possible effects of the new impairment model on the credit policy are discussed, as well as the limits of the paper and future research regarding the studied subject.

Keywords: *credit, expected credit loss model, financial instruments, IFRS 9*

1. INTRODUCTION

In the context of recent financial crisis the subject of recognising impairment of financial instruments has taken on particular importance. There were accusations against the existing accounting standards that, according to IAS 39, they fail to recognise credit losses on time. They use the incurred loss model, which does not recognise the losses until they actually happen. EY (2014, pg. 4) concludes in its report that “since losses are rarely incurred evenly over the lives of loans, there is a mismatch in the timing of the recognition of the credit spread inherent in the interest charged on the loans over their lives and any impairment losses that only get recognized at a later date”. The premises mentioned above have accelerated the work on the reform of financial instruments. The effect of these works is the International Financial Reporting Standards 9 Financial Instruments, published July 24, 2014. In its regulation no. 2016/2067 of November 22, 2016, the European Commission states that “The [IFRS 9] standard aims to improve the financial reporting of financial instruments by addressing concerns that arose in this area during the financial crisis. In particular, IFRS 9 responds to the G20's call to move to a more forward-looking model for the recognition of expected losses on financial assets”. Nevertheless, it should be noted that the reform has been initialised much earlier, but under the provisions of Norwalk Agreement from 2002 between IASB and FASB. The financial crisis brought about the intensification of works on the reform. The Agreement determined the areas which require convergence between international and American accounting standards (IASB, 2014a, pg. 4). Already at that time the subject of financial instruments was considered to be one of these areas.

The following paper deals with one of issues concerning financial instruments, i.e. the impairment of financial instruments in the context of implementation of new expected credit loss model, introduced by a new IFRS 9 standard, which is coming into force January 1, 2018¹. This

¹ In case of insurance companies, the new standard will come into force January 1, 2021.

new model, as well as its potential effects are described from the point of view of banks in relation to the very specific financial instrument, i.e. a credit. The work is divided into four parts. Part one discusses credit as a financial instrument. It also depicts relevant dangers (from the points of view of risk as well as of expected credit losses). The risks are connected with granting a credit in the context of such problems as asymmetry of information and adverse selection. The second part presents the expected credit loss model. The third part, in turn, discusses potential effects of the introduction of expected credit loss model for banks. In the last part of the paper, the possible effects of the new impairment model on the credit policy are discussed, as well as the limits of the paper and future research regarding the studied subject.

The following paper was prepared on the basis of the analysis of new IFRS 9 standard (particularly, of the part concerning expected credit loss model) as well as on the analysis of other works on this subject, in the context of possible effects of this model on banks and their credit policy. Such works on this subject were published e.g. by PWC, EY and Deloitte, as well as by such institutions, as European Banking Authority (EBA) and Basel Committee on Banking Supervision (BCBS). The authors of this article aim to draw attention to potential consequences of implementing expected credit loss model on adverse selection and asymmetry of information.

2. CREDIT AS FINANCIAL INSTRUMENTS. SUBPRIME CREDITS.

Financial instruments are the subject of trade on financial markets. They can be discussed narrowly, i.e. as securities or more broadly, as a totality of monetary tools used to shape the economy and social life (Flejterski, 2007, pg. 161–162). Financial instruments are traditionally understood as money market instruments (e.g. treasury bills or commercial papers), capital market instruments (e.g. bonds, shares) or derivatives market instruments (e.g. options, forward or futures contracts). Yet, according to e.g. S. Owsiak (2002, pg. 296–324), the category of financial instruments should also include:

- pricing instruments (e.g. monopoly prices, minimum prices),
- billing instruments (e.g. letters of credit, payment cards),
- instruments aimed at meeting the demand for money. In case of households they are e.g. salaries, credits, interest on deposits. In case of non-financial enterprises they are e.g. credits, prices of services or goods, and in case of financial enterprises e.g. deposits, clients' current accounts or insurance policies,
- fiscal policy instruments, e.g. monetary instruments (exchange rates, interest rates), macroeconomic fiscal instruments (government debt, government revenue, government budget expenditures) and microeconomic fiscal instruments (tax, duty, subsidy).

In the light of all above deliberations, the credit is also a financial instrument. It serves to meet the demand for money and is a vital element of banks' balance sheets. Already when the credit application is being verified and the credit decision is made, when there is an exchange of information between the bank and the client (which is to help the bank determine the credit risk) there occurs asymmetry or distortion of information, which may affect the credit risk and, as a result, influence the expected credit loss. It is particularly noticeable in consumer credit market, where there is great competitive advantage. A risk to consumer interests is the result of his relatively weaker position compared to his creditor (Forlicz, 1996, pg. 5). On the other hand, consumers- borrowers also have information advantage. Continuous state of missing some information poses a threat to banks because making decisions about granting a consumer credit with insufficient information may bring about accumulation of losses, and at the same time threaten the stability of the whole financial system. Asymmetry of information does not happen only when one party is a professional (the bank) and takes advantage of its client's lack of knowledge. It may also happen when a borrower presents false information in his credit application, and based on that, the bank makes the wrong financial decision (such credit may not be repaid regularly, which may incur costs for the bank). It is because only the borrower can assess his financial situation and decide

whether it is possible that his loan is repaid. If a borrower withholds some information from the bank, the bank may make the wrong credit decision.

At this point it is worth mentioning a specific type of credit market, i.e. subprime credit market which emerged in 1990s in the USA. The banks were back then officially encouraged to give credits to people of low solvency, too. Thanks to this policy people could get a credit more easily. A newly emerging market was called subprime market by the contemporary boss of Fannie Mae. A subprime credit is, to put it in another words, a high risk credit which is granted to a subject of low solvency. It poses a threat not only because there is high probability of non-payment, but also in the context of adverse selection. In result of adverse selection, subjects which are better informed drive other subjects out of the market. Also, adverse selection brings about increased activity of subprime borrowers, who only make an impression of being reliable (Matthews, Thompson, 2007, pg. 146–184). An increase in credit interest rates has more effect on credible borrowers, who, when faced with such increase will resign from the transaction and rather look for a cheaper credit in some other bank. Bank offers are constructed on the basis of general conditions of agreements, regulations and master forms. Then, reliable customers obtain credits for an artificially high price, whereas “worse” clients get relatively better conditions (Bieć, 2011, pg. 102). This leads to the lowering of quality of credit offers and to situations when the “worse” crediting conditions drive out the “better” ones.

Moreover, it should be noted in the context of recent financial crisis that there are negative implications connected with granting subprime credits. Some economists claim that moral hazard brought about the lowering of credit standards in the USA, which in turn induced the financial crisis of subprime credit market in 2007. Each link in a credit chain which generated profit was “sure” that it is not them who take the risk, because they all shifted the risk to the next link in the chain. Credit institutions which resold their credits offloaded the risk on the investors. Investment banks, after they had obtained such credits, divided them into „smaller parts” in the form of mortgage-backed securities (MBS). It is worth noting that some of these securities were more risky than the other ones. Investors purchased securities and by concluding a hedge transaction they protected themselves against the risk of insolvency as they pushed the risk further on.

It seems that asymmetry of information and adverse selection, which are all present at the credit market, will be even more visible in expected credit loss model introduced by IFRS 9. It will be because using this model, one must recognise the credit loss expected for the following 12 months already at initial recognition of a financial instrument (in this case- a credit). The model is described in chapter 3.

3. THE MODEL OF EXPECTED CREDIT LOSS ACCORDING TO IFRS 9

IFRS 9 introduces the model of expected credit loss (ECL) which is a new one when it comes to presenting impairment. It constitutes the opposite of the incurred loss model, which is currently applied according to IAS 39 standards. As P. Czajor (2015, pg. 64–65) wrote, the implemented change of recognising impairment losses model may seem controversial “because it constitutes an obligation to take into account the entities’ predictions as to the possibility of impairment losses. Thereby, the risk of impairment losses will also be considered in the financial result, not only the effects of materialisation of that risk (that is, actual incurred losses)”.

Considering the notion of expected credit loss model, one must determine at the very beginning what is the credit risk for a financial instrument. IFRS 7 *Financial Instruments: Disclosures* (Appendix A Defined terms) provides such definition of this notion: [it is] “the risk that one party to a financial instrument will cause a financial loss for the other party by failing to discharge an obligation”. Thus, the credit risk is the possibility of one trading partner not complying with the commitments.

The new model of estimating impairment can be applied for the following financial assets:

- financial assets that are measured at amortized cost (such debt instruments as loans, debt securities, bank balances, deposits and trade receivables),
- financial assets measured at fair value through other comprehensive income²,
- lease receivables under IAS 17 *Leases*,
- contract asset under IFRS 15 *Revenue from Contracts with Customer*,
- loan commitments and financial guarantee contracts that are not measured at fair value through profit or loss under IFRS 9³.

Therefore, the model of expected credit loss concerns mainly those financial assets, which are kept by an entity to generate benefits from contractual payments. Consequently, the model applies mainly to debt instruments, such as granted credits and loans as well as acquired bonds. This model, just like the incurred loss model under IAS 39 will not include financial assets measured at fair value through profit and loss, because the possible impairment is already considered in the fair value.

It should be noted that, unlike in IAS 39, IFRS 9 requires that for all items to which there are requirements concerning the loss of value, the same rules for the valuation of the impairment are used (except for assets discussed in §5.5.13–§5.5.15 of the standard, i.e. purchased or originated credit-impaired financial assets and trade receivables, contract assets and lease receivables). For instance, in accordance with IAS 39, the impairment of assets which are measured at amortised cost is assessed in a different way than for assets available for sale and measured at fair value through other comprehensive income (Deloitte, 2014, pg. 7).

IFRS 9 distinguishes three possible approaches to the evaluation of expected credit losses:

- “(...) the general approach,
- the simplified approach,
- the purchased or originated credit-impaired approach” (EY, 2014, pg. 12).

Following general approach, in accordance with IFRS 9 §5.5.3, subject to purchased or originated credit-impaired financial assets (described in §5.5.13 and §5.5.14) as well as simplified approach for trade receivables, contract assets and lease receivables (described in §5.5.15 and §5.5.16), “at each reporting date, an entity shall measure the loss allowance for a financial instrument at an amount equal to the *lifetime expected credit losses* if the credit risk on that financial instrument has increased significantly since initial recognition”. However, in accordance with IFRS 9 §5.5.4 “if at the reporting date, the credit risk on a financial instrument has not increased significantly since initial recognition, an entity shall measure the loss allowance for that financial instrument at an amount equal to *12-month expected credit losses*”. In consequence, the basis for the assessment whether expected credit losses should be regarded until the end of expected maturity period (i.e. during the so called whole life span) is the substantial growth in the default risk (credit risk) from initial recognition. In turn, neither the evidence, which at the reporting date would prove the decrease in value of a given financial asset, nor the actual default event could be the basis of such assessment. It was rightly noted in §B5.5.7 that the significant increase in credit risk usually happens either before the decrease in value of a financial asset or before the actual non-compliance with the obligation.

In case of purchased or originated credit-impaired financial assets, IFRS 9 §5.5.13 says that “(...) at the reporting date, an entity shall only recognize the cumulative changes in lifetime expected credit losses since initial recognition as a loss allowance”. The amount of the cumulative changes in lifetime expected credit losses should be recognized in profit or loss as an impairment gain or loss (§5.5.14). Favourable changes in lifetime expected credit losses should be recognized as impairment gain, “(...) even if the lifetime expected credit losses are less than the amount of

² In this case, IFRS 9, §5.5.2 says that “the loss allowance shall be recognized in other comprehensive income and shall not reduce the carrying amount of the financial asset in the statement of financial position”.

³ With regards to loan commitments „the scope excludes loan commitments designated as financial liabilities at fair value through profit and loss and loan commitments that can be settled net in cash or by delivering or issuing another financial instrument”, and with regards to financial guarantee contracts “the scope excludes financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition or when the continuing involvement approach applies” (EY, 2014, pg. 11).

expected credit losses that were included in the estimated cash flows at initial recognition” (§5.5.14).

In some cases, IFRS 9 allows simplified approach. As stated in §5.5.15 and §5.5.16, “(...) an entity shall always measure the loss allowance at an amount equal to lifetime expected credit losses for:

- a) trade receivables or contract assets that result from transactions that are within scope of IFRS 15, and that:
 - (i) do not contain a significant financing component (or when the entity applies the practical expedient for contracts that are one year or less) in accordance with IFRS 15; or
 - (ii) contain a significant financing component in accordance with IFRS 15, if the entity chooses as its accounting policy to measure the loss allowance at an amount equal to lifetime expected credit losses. That accounting policy shall be applied to all such trade receivables or contract assets but may be applied separately to trade receivables and contract assets
- b) lease receivables that result from transactions that are within the scope of IAS 17, if the entity chooses as its accounting policy to measure the loss allowance at an amount equal to life time expected credit losses. That accounting policy shall be applied to all lease receivables but may be applied separately to finance and operating lease receivables.

An entity may select its accounting policy for trade receivables, lease receivables and contract assets independently of each other”.

Adapting the general approach to the assessment of expected credit losses, how can one evaluate that the credit risk regarding a given financial instrument has significantly increased from the moment of its initial recognition? The approach provides a somewhat indirect answer to this question. Mainly, in IFRS 9 §5.5.10 a situation was presented, where an entity can (but does not have to) assume that a significant increase in credit risk did not happen. In this case it is about a financial instrument which “is determined to have low credit risk at the reporting date”. So, when do we have to deal with the situation when, at the reporting date, a financial instrument is characterised with low credit risk? In accordance with IFRS 9 the credit risk is low when the risk that the borrower fails to fulfill his commitments is low, that is in a situation, when in the near future he has the ability of handling the liabilities resulting from contractual cash flows. Also, in a long run, unfavourable changes in economic conditions may, but do not necessarily have to limit his ability to fulfill his contractual commitments. When assessing the financial instrument in terms of its credit risk, an entity may use internal indicators of credit risk assessment or use some other methodology which coincides with the common understanding of credit risk and which includes not only kinds of risk, but also types of financial instruments assessed. The standard proves, too, that “an external rating of ‘investment grade’ is an example of a financial instrument that may be considered as having low credit risk. However, financial instruments are not required to be externally rated to be considered to have low credit risk” (§B5.5.23).

An entity assesses whether from the initial recognition of a financial instrument there has been a relevant increase of credit risk taking into consideration the increase in probability of the debtor’s failure to pay contractual liabilities. Various methods of assessment have been admitted, including those which do not consider directly the probability of the debtor not paying his obligations. On the other hand, IFRS 9 points to a situation, which may (but does not have to) prove the considerable increase in credit risk. Such situation takes place when the delay in contractual repayment exceeds 30 days. This assumption, however, may be rejected by an entity i.e. in a situation when the delay is not caused by financial problems of the debtor. The standard states that “regardless of the way in which an entity assesses significant increases in credit risk, there is a rebuttable presumption that the credit risk on a financial asset has increased significantly since initial recognition when contractual payments are more than 30 days past due. An entity can rebut this presumption if the entity has reasonable and supportable information that is available without undue cost or effort, that demonstrates that the credit risk has not increased significantly since initial

recognition even though the contractual payments are more than 30 days past due. When an entity determines that there have been significant increases in credit risk before contractual payments are more than 30 days past due, the rebuttable presumption does not apply” (§5.5.11).

§B5.5.1 of the standard states that in order to determine expected credit losses, it may be necessary to assess the significant increase in credit risk on a collective basis, with regard to information indicating considerable increase in credit risk, which is connected e.g. with a group or a subgroup of financial instruments. Such approach is supposed to guarantee that an entity will achieve the goal, that means grasp the expected credit losses in case of a significant increase in credit risk over the whole lifetime of a financial instrument, even when the evidence of significant increase in credit risk is not yet available for the individual instrument. For instance, this can be used for such financial instruments like retail loans, in which case the creditor has little or no regular and monitored knowledge about credit risk of particular financial instruments until the client breaches the terms of agreement. IFRS 9 allows that an entity groups the financial instruments based on their similar credit risk, in order to establish significant increase in credit risk as well as to determine the impairment write-off on a collective basis. Its purpose is to facilitate the process of identification whether a significant increase in credit risk has occurred. Nevertheless, IFRS 9 explains that an entity should not hinder the understanding of information by grouping (putting together) financial instruments characterized by different levels of risk. Additionally, it enumerates examples of grouping of financial instruments according to the common characteristics of credit risk, taking into consideration (§B5.5.5):

- “(...) instrument type;
- credit risk ratings;
- collateral type;
- date of initial recognition;
- remaining term to maturity;
- industry;
- geographical location of the borrower; and
- the value of collateral relative to the financial asset if it has an impact on the probability of a default occurring (...).”

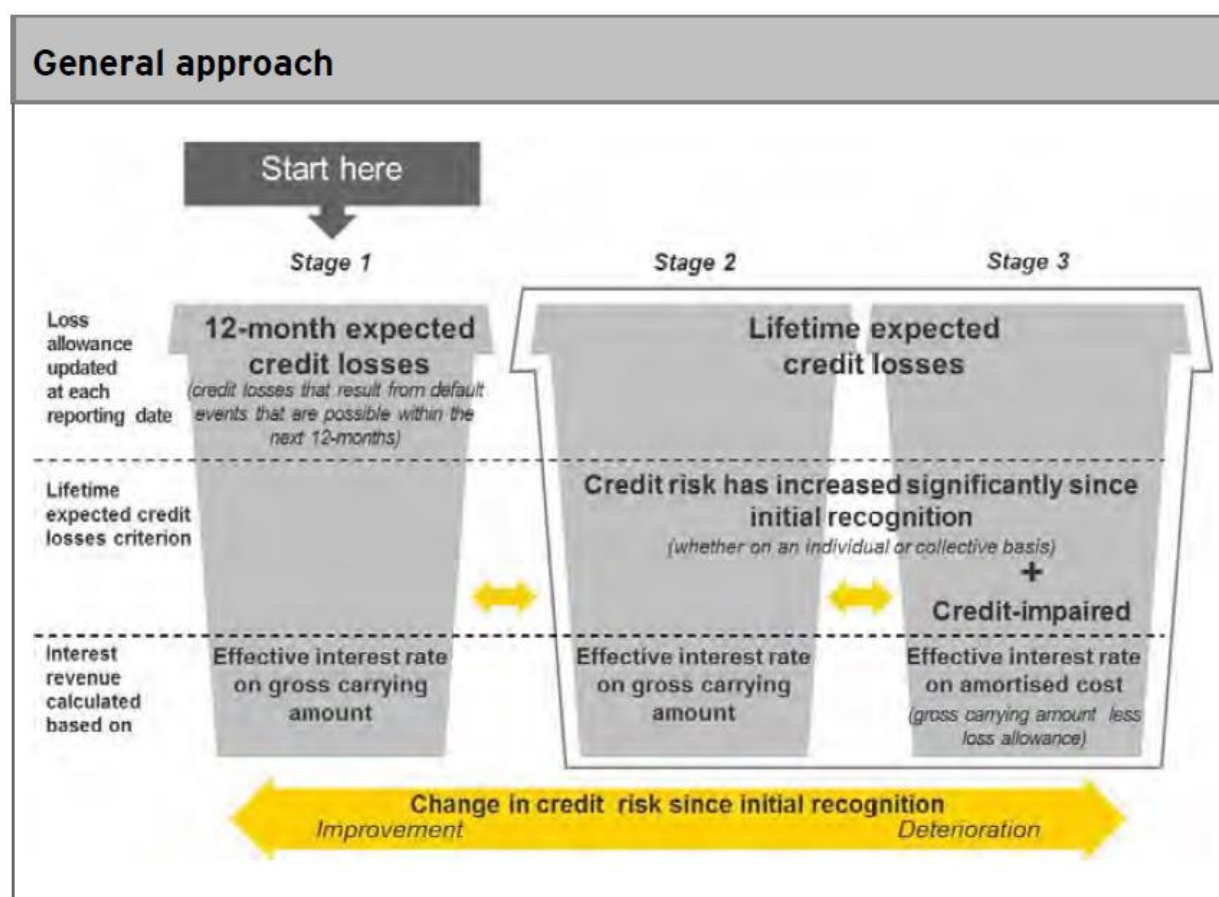
In accordance with §5.5.17, “an entity shall measure expected credit losses of a financial instrument in a way that reflects:

- a) an unbiased and probability-weighted amount that is determined by evaluating a range of possible outcomes;
- b) the time value of money; and
- c) reasonable and supportable information that is available without undue cost or effort at the reporting date about past events, current conditions and forecasts of future economic conditions”.

IFRS 9 defines expected credit losses as a weighted average of credit losses i.e. the present value of all cash shortfalls. In this case, the binding factor is the risk of breach of contract (Deloitte, 2014, pg. 7). An entity is not obliged to take into consideration all the possible scenarios. However, it should at least consider the risk or the possibility of occurrence of credit loss (even when this risk is low). Expected credit losses should be discounted at the reporting date (and not at the date of expected failure of execution of a liability) with the use of effective interest rate, which was determined at initial recognition of a given asset. With regard to financial assets which have been subject to the impairment as a result of a significant increase in credit risk, expected credit losses should be discounted using effective credit risk-adjusted interest rate. Including the variable of time in calculations of the expected credit losses, and more precisely, the value of money in time causes the situation when together with the maturity date of a given financial instrument (one financial asset or, in case of the group approach- more financial assets) coming closer and closer, the level of discounted expected impairment changes and the probability of loss decreases (Czajor, 2015, pg. 68).

The most vital assumptions of the above discussed general approach in expected credit losses have been presented in Figure 1.

Figure 1. General approach in expected credit losses (ECL) model



Source: EY (2014), *Impairment of financial instruments under IFRS 9*,

[http://www.ey.com/Publication/vwLUAssets/Applying_IFRS:_Impairment_of_financial_instruments_under_IFRS_9/\\$FILE/Apply-FI-Dec2014.pdf](http://www.ey.com/Publication/vwLUAssets/Applying_IFRS:_Impairment_of_financial_instruments_under_IFRS_9/$FILE/Apply-FI-Dec2014.pdf), pg. 11.

According to Figure 1, IFRS 9 divides the entity's credit exposures into three stages. The first stage contains all working or newly sold credits, where the expected loss with regards to banks which use IRB (internal ratings based) models is the product of the following parameters:

- probability of default (PD),
- loss given default (LGD),
- exposition at default (EAD).

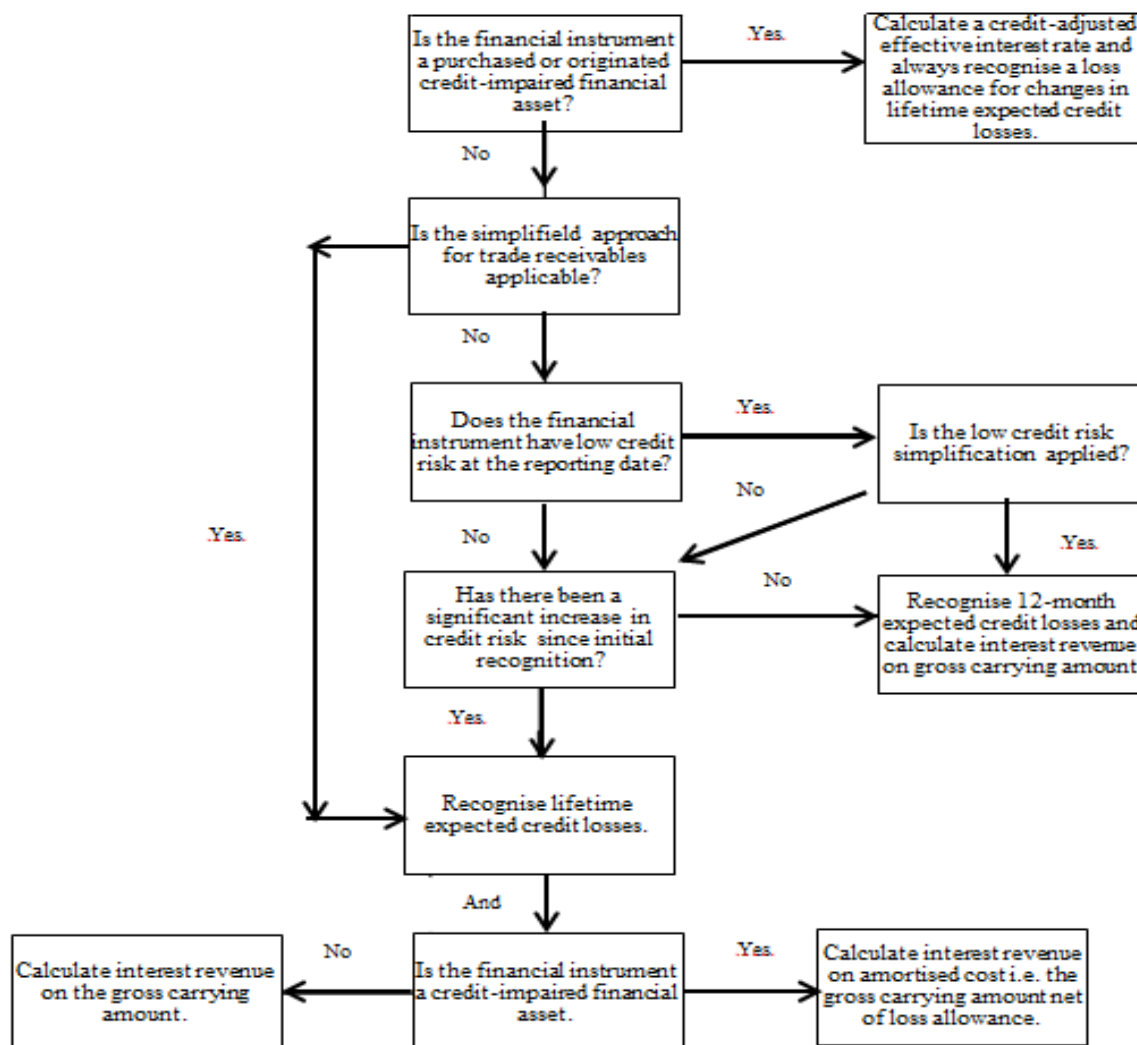
In this case, probability of default parameter has to illustrate the current insolvency level of credits (based on historical data) and set the value within the next 12 months. This means that the bank, while granting a credit has already made a loss. The second stage contains credits characterised by a significant increase in credit risk since the initial recognition. For such credits, there is a necessity of recognising by banks the expected losses up to their maturity (this is, for their whole lifetime). At the moment when the credit exposures are transferred from stage one to stage two, there comes a surge of reserves (often called "the cliff effect"). The next transition, that means the transition from the second stage to the third one is not followed by any such big effect, because the expected losses are also measured in relation to the remaining maturity of a given financial asset (Ramotowski, 2017).

While analysing the expected credit loss model one should take into account a characteristic category introduced by IFRS 9 for the sake of this model. This category is relevant from the point of view of the bank. Mainly, to this category belong the above mentioned purchased or originated credit-impaired financial assets. To this group belong financial assets which are characterised with high credit risk already at the initial recognition. There may also be other circumstances proving that the impairment is their inherent feature (Czajor, 2015, pg. 68). Overdue or non-performing loans serve as examples of such financial assets. In this case the cash flows which are used to

calculate the effective interest rate should already consider the expected impairment. IFRS 9 defines this interest rate as an effective credit risk-adjusted interest rate (Czajor, 2015, pg. 68). The standard also points out to situations which may prove that an entity has purchased a financial asset with impairment and, because of this it should consider the expected impairment at the initial recognition of these assets⁴.

A summary of all above deliberations about expected credit losses model for all the three approaches provided in IFRS 9 has been presented in Figure 2.

Figure 2. Application of the impairment requirements at a reporting date



Source: Based on illustration provided by EY (2014), *Impairment of financial instruments under IFRS 9*, [http://www.ey.com/Publication/vwLUAssets/Applying_IFRS:_Impairment_of_financial_instruments_under_IFRS_9/\\$FILE/Apply-FI-Dec2014.pdf](http://www.ey.com/Publication/vwLUAssets/Applying_IFRS:_Impairment_of_financial_instruments_under_IFRS_9/$FILE/Apply-FI-Dec2014.pdf), pg. 12.

4. THE EVALUATION OF POTENTIAL EFFECTS OF IMPLEMENTING THE EXPECTED CREDIT LOSS MODEL FOR BANKS

As stated by PWC (2014, pg. 2), “the expected credit losses model constitutes a change in guidelines included in IAS 39 and is the answer to the criticism of the incurred loss model, which

⁴ Some of these premises were also mentioned in IAS 39. However, they were mentioned in the context of actual impairment and not the expected one.

occurred during the economic crisis". IASB (International Accounting Standard Board) has introduced IFRS 9 standard "in order to improve mechanisms of classification and measurement of financial instruments, deemed as one of the main causes triggering the financial crisis" (Cipullo, Vinciguerra, 2014, pg. 91). Also, EBA (2017a, pg. 4) underlined that IFRS 9 is expected to contribute to financial stability as well as to address some prudential concerns.

The implemented changes lead to the situation when credit institutions do not take into account only the losses on "broken" credits, but also evaluate the expected credit losses on working exposures and, in consequence, put reserves aside on them (Ramotowski, 2017).

J. Ramotowski (2017) points out that "the previous IAS 39 standard resulted in delayed recognition of credit losses, in particular on financial instruments. It has been widely recognised that it was its flaw". What is more, J. Ramotowski calls attention to the fact that if the banks could see the dangers in advance (i.e. when the economic situation is good), they would be able to prepare for the times of crises and downturn in economy. The currently introduced ECL model could serve this cause as it is assumed to recognise expected credit losses already when the financial instrument is considered for the first time in the balance. The adopted assumptions seem to be correct and relevant, particularly in the context of recent global financial crisis.

Provisioning for the expected credit losses will obviously influence the financial result. It seems that the application of the expected credit loss model should support smoothening the financial performance curve of entities in the long run, as "increased write-offs during the boom in the economy would cause the decrease in spectacular profits. With the downturn in the economy and there are more and more impaired credits, a decent occupancy exposure with provisions prevents sudden and dramatic losses. This way the capital is protected during the recession" (Ramotowski, 2017). Thus, IFRS 9 should suppress procyclical attitude of banks, as well as demand from them, when assessing risk, the forward looking attitude, because the entities will have to take into consideration not only historical and current data or information about the objective impairment of financial assets in case of the recognition of incurred losses, but also they would have to take into account predictions about the future and future economic conditions. On the other side, however, the findings of the research conducted by EBA (2016, pg. 6) are that 75% banks predict that new impairment requirements will result in the increase of changeability of their financial results. It should be noted that fluctuations of profits and losses are usually perceived negatively by investors. Consequently, it may be concluded that this may have negative impact on the cost of own equity as well as the cost of debt, which could mean negative influence on the bank's worth as an enterprise. Also, the prospective negative influence on dividends payouts cannot be disregarded. What is more, J. Abad and J. Suarez's (2017, pg. 4) analyses prove that it is not impossible that in some circumstances the implementation of expected credit loss model may not reduce, but strengthen fluctuations in banks' demand for capital over the business cycle. This, in turn, may influence the cyclicity of bank loan supply.

The fact that banks will have to consider predictions about the future may constitute a risk of subjective judgement which may make it difficult to compare the entities (EY, 2014, pg. 11). Also, it seems from the pragmatic point of view that the employment of expected credit loss model will not entirely prevent the banks' procyclicality, as for that very moment the measurement of provisions will still be done with the use of procyclical parameters⁵.

On the other side, however, more detailed requirements as to the disclosure of information about techniques, methodologies, source data etc. in the process of expected credit loss assessment should support more transparency in this area.

The expected effect of implementing IFRS 9 standards about the impairment of financial assets (i.e. expected credit loss model), in particular when it comes to banks, will be the increase in credit loss allowance in connection with the decrease in capital on first-time adoption, which will have impact on regulatory capital (EY, 2014, pg. 5 and 11).

⁵ It is worth noting that the existing model of incurred losses (according to IAS 39) is seen by some as one contributing to the increase in pro-cyclicality (Hronsky, 2010).

The increase in loss allowance will be different for various entities, depending on their financial assets portfolio. Banks which are in possession of higher quality financial instruments in a shorter term horizon will to a lesser degree feel the consequences of the introduction of a new standard. Banks which have unsecured loans will, in turn, suffer more than the banks which have mortgages (EY, 2014, pg. 11). As EBA (2017b, pg. 8) notes, on the basis of research conducted in about 50 institutions “respondents confirmed that the total estimated impact of IFRS 9 on own funds is driven mainly by the impairment requirements and, to a much lesser extent, by the classification and measurement requirements of IFRS 9. The main impact on own funds seems to be driven by the estimation of lifetime ECL for stages 2 exposures (...), and mainly from loans and advances to households and non-financial corporations”.

It must also be taken into consideration that banks, as they are specific institutions, have to meet a number of regulatory capital requirements. Due to the fact that the introduction of new expected credit loss model will imply the increase in loss allowance, it is expected that many banks will suffer a decline in regulatory capital. Deloitte (2016, pg. 1 and 3) assesses that the impact of IFRS 9 on Pillar 1 regulatory capital will be twice as high for banks using standardised approach in comparison with banks which use IRB models. New impairment requirements may also have impact on stress testing and capital buffers (Deloitte, 2016, pg. 10).

There has been a suggestion of the Basel Committee on Banking Supervision to introduce a transitional period of four years, when, according to ECL model, the banks could record losses and provisions to CET1 and TIER 1 capital (Basel Committee on Banking Supervision, 2016). Every year the amount of these records would decrease by one-fourth. The aim of this solution is to spread over time the influence of expected credit losses on capitals (Ramotowski, 2017).

PWC (2014, p. 2) emphasizes in its study that, “IFRS 9 concerns all entities. Though, it will have the greatest influence on financial institutions as well as on other entities being in possession of large portfolios of financial assets valued according to amortised cost or FVOCI, especially when the ECL model is considered. (...) It is expected that the implementation of the new expected credit loss model will be a challenge and may require major modifications of credit management systems”. The introduction of IFRS 9, including expected credit loss model, will not mean solely the emergence of a new model in the bookkeeping, but it would have a greater influence on the risk management model adopted by banks. There appear studies containing, for instance, adaptations of advanced internal-ratings -based models adjusted to IFRS 9 requirements (Miu, Ozdemir, 2017, pg. 53–83).

Summing up all the deliberations above one has to conclude that, as J. Ramotowski (2017) put it: “a simple relation- higher risk- higher profit” should rather be replaced with “higher risk- more reserve- not necessarily higher profit”.

5. EVALUATION OF POTENTIAL EFFECTS OF IMPLEMENTING THE EXPECTED CREDIT LOSS MODEL ON CREDIT POLICY. SUMMARY

Global Public Policy Committee (2016, pg. 4) stresses the importance of new impairment model saying that “for many banks, the adoption of expected credit loss accounting will be the most momentous accounting change they have experienced, even more significant than their transition to IFRSs”.

Without any doubt, the transition from incurred loss model to expected credit loss model, when determining credit risk provisions (in accordance with IFRS 9 requirements) is a big step forward for faster and better recognition of credit losses by banks. On the other hand, however, it constitutes a big challenge for banks for many reasons and may affect their credit policy (NBP, 2017, pg. 13).

Basel Committee on Banking Supervision (2015, pg. 2) states in its report that “experience indicates that a significant cause of bank failures is poor credit quality and deficient credit risk assessment and measurement practices. Failure to identify and recognise increases in credit risk in

a timely manner can aggravate and prolong the problem". The above statements clearly indicate that low quality credits and late identification of credit risk constitute a huge threat for the bank's functioning. It also stressed the importance of this very specific financial instrument, which is credit, to the bank. Thus, it seems that model of expected credit losses responds to threats mentioned above, which is viewed by the authors of this paper as a positive thing.

On the other hand, banks may be forced to implement conservative lending policy, based on cautious credit risk assessment even in the market boom (Styn, 2013, pg. 407). This may lead to the increase in expected risk margins, which, naturally, affects the borrower as it causes the increase in the total cost of credit. A.P. Raj (2016) notes that "banks may reprice or restructure the loans, making it more expensive for borrowers with riskier credit profiles (...) they might think twice about extending certain types of loan facilities if they are deemed too risky or no longer profitable". What is more, in order to prevent themselves from "cliff effect", banks may try to shorten maturity of loans. They will do so to minimise expected credit losses, which may occur due to potential transition from stage 1 to stage 2 (European Systemic Risk Board, 2017, pg. 37–38).

The possibility of rebutting the presumption that a delay in loan repayment of more than 30 days leads to a significant increase in credit risk may be easier to implement in case of retail credits than loans for enterprises (Raj, 2016). In case of the latter ones, delays in loan repayment usually indicate that corporations are underperforming. Moreover, most of banks will most probably keep aiming at the increase in shares of retail loans (in comparison to corporate loans) because of their higher repayment rate, as well as because the possibility to diversify their credit portfolio.

In the authors' opinion, it might appear appropriate to expect that changes implemented by IFRS 9 can have positive influence on eliminating the negative phenomena mentioned in chapter 2. It is because the banks will probably seek a better assessment of their clients' credibility, and, consequently, the credits granted by them will be less risky. In a long run, minimising asymmetry of information is also in their interest because in the expected credit loss model granting a „bad" credit will have serious consequences even at initial recognition (the bank, granting the credit already records some losses).

Yet, on the other hand, the probable tightening up of the credit procedure, resulting from implementation of IFRS 9 may as well cause the increase in information asymmetry. This is because a prospective borrower, when not being given a credit in one bank, will try to obtain it from other credit institutions, creating a number of requests in credit information bureau which may in turn decrease his scoring. What is more, adverse selection may be intensified as banks may refuse to fund more credible clients precisely because of strengthened procedures of financial check. Thus, for this moment it is hard to clearly assess the effect of IFRS 9 and expected credit loss model on asymmetry of information and adverse selection. For this reason, future studies might be about the influence of IFRS 9 on banks' credit policy. The authors believe that it might be worthwhile to determine whether it is true that the lending procedures have changed with the implementation of IFRS 9 and expected credit loss model. For instance, have the applications for loans changed, and, consequently, the amount of information required from prospective borrowers? As a result of the above, it would also be valuable to find out whether this possible change of credit policy has lead to the increase or the decrease in adverse selection and asymmetry of information. However, it will be possible to conduct such research only after IFRS 9 comes into life. It is therefore a substantial limit of this article.

Taxes may be subject for further studies. It remains uncertain what influence the changes resulting from IFRS 9 will have on tax regulations (reminding that the latter will undoubtedly have to be adjusted to these changes). In turn, changes in tax regulations may affect the value of deferred income tax assets (Bank BGŻ BNP Paribas S.A., 2017, pg. 16). It may also be worthwhile to continue studies on the interaction between capital requirements for banks and changes implemented by IFRS 9. Here, special attention should be paid to the influence of expected credit loss model on the bank's own funds (EBA, 2015, pg. 7). According to the authors, it might be interesting to make research about the increase of importance of bank's collection department,

whose activities should with no doubt be of crucial importance in preventing the “transition” of credit exposures from stage 1 to stage 2 due to non-payment.

On a final note, it should be stressed that when preparing any kind of simulations of potential effects of IFRS 9 one must not forget that the economic conditions which will be taken into consideration in ECL model when the IFRS 9 will be actually required can differ from those which are considered during simulations. Furthermore, while preparing such simulations banks may apply some simplifications and presumptions which not necessarily represent the actual IFRS 9 methodology (EBA, 2016, pg. 4). It also has influence on the results of potential analyses and simulations in this regard.

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MORTGAGE PRODUCT POLICY AND THE DEPENDENCE ON MACROECONOMIC FACTORS IN THE FIELD OF FINANCE

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Abstract

The significant problems of the banking sector after the Global Financial Crisis, which had been caused by a credit boom and a huge rise in real estate, has had effects on banking product policy, on the structure of mortgage portfolio, and marketing offer. The article describes the evolution and the structure of bank loans provided to households in a defined period. The aim of this paper is to analyze the development of mortgage product portfolio in the household sector and its dependence on selected macroeconomic factors in the context of local conditions. To fulfill the aim of this paper, multiple linear regression will be used. The basis for multiple linear regression is to estimate the effect of each independent variable X_i , represented by selected macroeconomic factors and dependent variable Y , represented by the volume of mortgages for private clients. Results of the analysis will be the basis for an estimate of the dependence of mortgage product portfolio on macroeconomic factors in context of local finance regulations.

Keywords: bank marketing strategy, loan product policy, macroeconomic factors, mortgage, multiple linear regression

1. INTRODUCTION

The Czech economy performed better than expected in the first three months of 2017 and a number of indicators suggest that the trend should continue in the second quarter of 2017. The economy is still driven by local and international demand, and the share of investments in GDP is still growing. “According macroeconomic forecast, the inflation rate will be at 2.7% at the end of 2017. Economic performance measured by real GDP rose by 4.0% YoY (versus 3.3%) in the first quarter of 2017, while the seasonally adjusted GDP increased by 1.5% QoQ (versus 0.8%). Household consumption increased by 3.5% (in line with the estimate) in real terms. Consumption of the general government sector rose by 2.8% (versus 1.5%). On the labor market, the economic boom causes persistent increases in the demand for labor. High growth of employment, which has been exceeding 1% since the end of 2014, gradually depletes unutilized resources. Seasonally adjusted unemployment rate reached 3.0% in May 2017, being the lowest in the whole EU since the beginning of 2016. The share of the unemployed in the 15–64 age group will be at 4.4% at the end of 2017 and at 4.2% in 2018.” (Ministry of Finance, 2017, pg. 29–35)

The Czech banking system is highly stable, fairly competitive and profitable. In August 2017, 44 banks and foreign bank branches were operating in the Czech Republic excluding the Czech National Bank. “The total assets of the Czech banking sector stood at CZK 7.181 billion at the end of August 2017. Loans to residents reached CZK 5.259 billion. Deposits of residents, which are the most important item among banking sector liabilities, total CZK 4.171 billion.” (CNB, 2017) The forecast of bank’s repo rate will be at 0.21 on average in 2017 and at 0.80% in 2018.” In early April 2017, the CNB discontinued its exchange rate commitment and the reason was the sustainable fulfilment of the inflation target.” (ČNB, 2017)

2. OBJECTIVES AND METHODS

The purpose of this research is twofold. Firstly, the evolution and the structure of bank loans provided to households in defined period will be described. It will analyses the development of

mortgage product portfolio in the household sector and its dependence on the selected macroeconomic factors in the context of local regulations. It uses the dataset of the Czech National Bank and the Czech Statistical Office, specifically dependent and independent variables.

Secondly, constructing a multiple-linear regression model, will be predicted the values of the dependent variable from the variability of the values of the independent variables. The aim is to verify how the number and the amount of mortgages (dependent variables) can be influenced by independent variables. Based on the literature review, the parameters for the independent variables in this research have been set.

Overview of independent variables in period 1:2006–2:2017 (quarterly data)

- GDP in mld CZK (GDP)
- Inflation rate in % (Inflation)
- Unemployment rate in % (Unemployment)
- Exchange rate in CZK/EUR (Exchange_Rate)
- Growth rate of average gross wages in % (Wage)
- the rate of disposable income growth in % (Disposable_Income).

In particular, the paper uses the method of “Multiple linear regression”. The basis for using the multiple linear regression model is to estimate the effect of each independent variable X_i to the dependent variable Y . The force of the impact determines the regression coefficients β_i , also determining which independent variables have the greatest and the smallest effect on the dispersion of the dependent variables. In other words, how much of the variance of the dependent variable is explained by the selected independent variables. In addition, the literature review and analysis of secondary data are based on information published on or before February 1, 2017. The methods of analysis, synthesis and product strategy comparison were used as well.

3. LITERATURE REVIEW

Many studies over the years have compared the various financial systems. (Allen & Gale, 2000). Lunde (2016) described the evolution of the mortgage market in different countries. Scanlon, at al. (2015) investigated the most important trends in the scale of housing in countries across Europe and expounded on standards for living, and then discussed some of the drivers behind these trends and implications for the future of housing.

In 2008, the Czech banking system was affected by the Global Financial Crisis (GFC). An examination by Reinhart & Rogoff (2008), of the historical records of 18 previous post-war banking crises in industrialized countries shows qualitative and quantitative parallels to the Global Financial Crisis. This led to an economic recession period, which means a formidable challenge to economists and policy makers. This crisis meant an economic downturn and led to an intensive debate on rethinking loans and other regulations. Choi, at al. (2013) analyze the lending behavior of foreign-owned banks during the recent global crisis. They have used bank-level panel data for 51 countries and their paper explores the role of affiliate and parent financial relationships, host location, as well as the impact of parent geographic origin, and the reach of foreign banks' credit growth. In contrast to the previous authors, Adams K., J. at al. (2017), explore variations between foreign banks and the big amount of data enables them to identify the crisis' effect. Their baseline results show that banks exposed to home-country crises between 2007–08 exhibit changes in lending patterns that are lower by 30% than their non-crisis counterparts. “From 2008, we have witnessed efforts to restructure the regulation of the financial system at the international, regional and national levels, as well as the introduction of new norms and recommendations across much of the banking system. One major trend was that voluntary codes and recommendations gave way to significant legal changes, as reflected in developments such as Basel III (at the international level), the ‘Markets in Financial Instruments Directive’ (MiFID II) in the European Union, and national initiatives, such as the US Dodd–Frank Act.” (Clifton, et al. 2017, pg. 1)

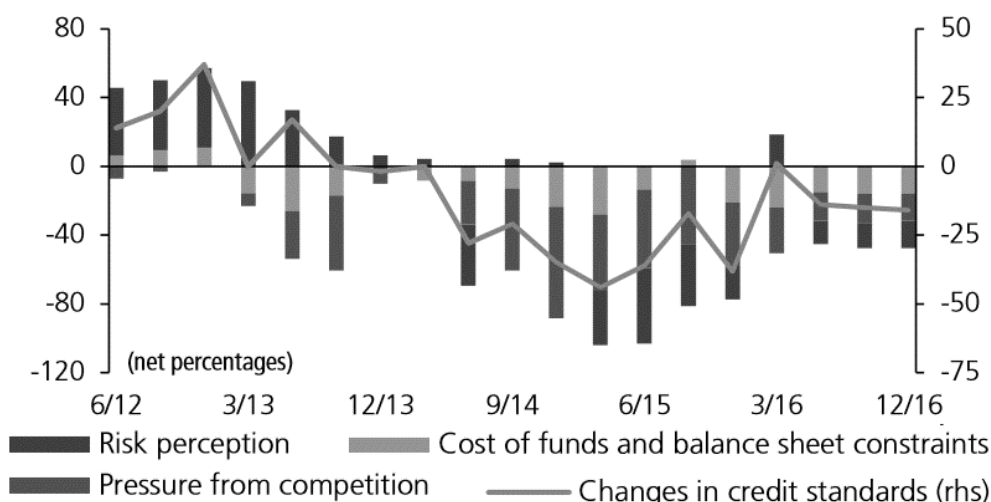
The concrete case study in the Czech Republic is currently being undertaken by Sunega, P. & Lux (2016), they are writing about mortgages loans and its development from 1989 till 2016. Kim, et al. (2017) analyzed a unique loan-level dataset and their study examines the characteristics of mortgage repayment and default behavior. Other authors examine how factors affecting mortgage default spill over to other credit markets and the result was that “Although mortgage nonrecourse statutes increase default on all types of housing debt, they reduce credit card defaults. Foreclosure delays increase default rates for housing and non – housing debts. Their analysis highlights the interconnectedness of debt repayment decisions.” Chan, et al. (2016, pg. 341)

A lot of authors define loan-to-value ratio (LTV) and its important role in reducing the threats to financial system stability. (Pirgaip & Hepsen, 2017). The issue of setting the maximum Loan-To-Value (LTV) ratios on residential mortgages is examined by Lim et al. (2011). Krznar & Morsink (2014) introduce examples of nations where LTV has been set. Robinson & Yao (2016) quantify the maximum Loan-To-Value (LTV) ratios and examine their implications for the business and credit cycles using a DSGE model with housing and long-term mortgage debt. Svobodová & Hedvičáková (2016) focused on the specialized financial product on savings and also on the second most used product in the field of own housing financing in the Czech Republic, building savings and compare it with mortgages. Importance for this paper Granger & Newbold (1974) have, their work in detecting the apparent regression of relationship from the index of correlation and statistics of DW.

3. LOAN STRUCTURE AND THE DEVELOPMENT OF THE MORTGAGES MARKET IN THE CZECH REPUBLIC

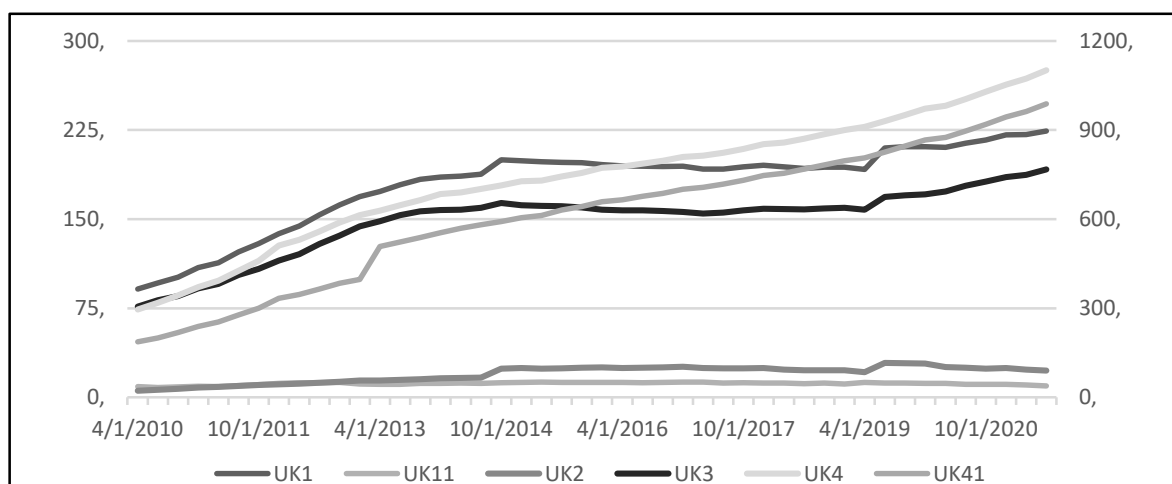
The 1990s represented a period of substantial change for the Czech banking industry. Taking account trends in real estate prices, macroeconomic indicators, mortgage indebtedness and the development and transformation of banks, we have had four main periods. After the socialist system collapsed in 1990, new rules were established, responsibility for housing were transferred from government to households. In the first period (1990–2000) there was the development of new product parameters and the establishment of new rules for the mortgage business. The first type of mortgage loan was defined in 1990 as a purpose – build loan with a maximum of 70% loan to value ratio (LTV). But the first mortgage product was offered to real clients in 1995. The golden period for the mortgage market was between 2001–2008. In 2001, the housing and mortgage boom started. Banks were innovative and a lot of innovative products were offered to the clients. The increased loan provision and decreased interest rates accelerated the growth of the loan market. In these years, 100% LTV was possible. On autumn 2008 was the Czech banking system caused by the Global Financial Crisis (GFC) and it started the third period. GFC has changed the economic environment and rules for the mortgage policy. The refresh of the mortgage market has started since 2013. In this last period in the mortgage business is the most important the risk policy and all rules of mortgage loans were redesigned. (Sunega & Lux, 2016, pg. 93–107)

The ČNB survey relating to loans to non-financial corporations, loans to households for house purchase and consumer credit and other lending to households, mentions main factors that can lead to changes in credit standards or demand for loans. “Between 2012 and 2016, the changes in credit standards, demand for loans and related factors reported by banks were in line with the credit cycle and the observed market situation in all the sectors under review. From around 2014 onwards, there was a stronger growth in demand on the credit market, risk perceptions changed, and pressure from competition strongly fostered an easing of credit standards. Regulatory and legislative interventions in the area of lending to households led to a sharp tightening of credit standards at the end of 2016, see in Figure 1.” (Hromádková, et al., 2017, pg. 119) The trends seen in the Czech financial sector continued in 2017.

Figure 1. Credit Standards Applied to Loans and Related Factors

Source: Hromádková et al., 2017, pg. 119

The structure of loan portfolio is highly variable both across countries and over time. The Figure 2 shows the loan portfolio structure in the Czech Republic. According to the authors' analyses, which have been monitoring the mortgages market since 2010, there is still a growing trend in the number of mortgage contracts being signed in the Czech Republic since 2010. We can mention some factors, which caused the rising number of mortgages loans. Firstly, the main reason is economic expansion and growing economy. Secondly, rising cost of real estate, which has led to a rise in the volume of mortgages loans. Finally, increasing the availability of mortgage loans and not very risk policy of some banks.

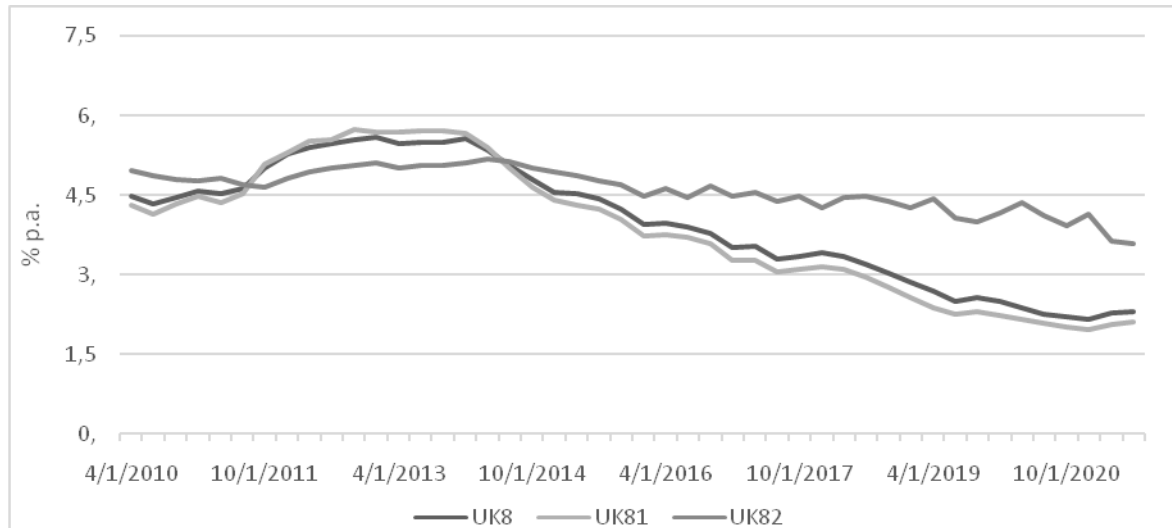
Figure 2. Loan Portfolio Structure (amount in mld. CZK; 2017–2020 is CNB prediction)

UK1	Consumer Loans and Current Account Overdraft
UK11	Current Account Overdraft
UK2	Credit Cards
UK3	Consumer Loans
UK4	Lending to House Purchase (RIGHT SIDE)
UK41	Included: Mortgages to Households (RIGHT SIDE)

Source: ČNB, 2017

One of the most important aspects of loan portfolio structure from the perspective of macroeconomics are interest rates. Mortgage interest rate can broadly be categorized into two groups, fixed-rate mortgages (FRMs) based on CNB nominal interest rate and adjustable-rate mortgages (ARMs) based on market conditions. Clients' interest in mortgages in the last five years have been supported not only by very low interest rates around 2 percent, but also by the fact that the investment in real estate is very profitable.

Figure 3. Interest Rates (% p. a.; 2017–2020 is CNB prediction)



UK8	Interest Rates – Lending to House Purchase(%)
UK81	Included: Interest Rates – Mortgages (%)
UK82	Included: Interest Rates – Bulding Society Loans(%)

Source: ČNB, 2017

4. RESEARCH METHODOLOGY

Through the multiple-linear regression model will be investigated once the dependency between the dependent variable and at least two independent variables. In the case of a multiple regression analysis based on the values of the dependent variable, we are looking for a linear combination of two or more independent variables. The resulting function is registered using a formula that is similar to the formula for the function of the simple linear regression, and that:

$$Y = \beta_0 + \sum_{i=1}^n \beta_i X_i + \varepsilon_i$$

where Y is dependent variable, $\beta_0, \beta_i, i=1, \dots, n$ are the regression coefficients (or partial regression coefficients), $X_i, i=1, \dots, n$ are independent variables and ε_i is random folder $i=1, \dots, n$.

The coefficients of the regression functions are determined by least squares. Before doing the regression analysis, it is necessary to fulfill the specified requirements.

Multicollinearity – multicollinearity is the first phenomenon that leads to misleading and inaccurate results. This phenomenon occurs when the variables are very strongly correlated with one another. It is difficult to determine which of the explanatory variables has a statistically significant impact on the explanatory variable. One of the indicators of the neglected of multicollinearity as high explanatory power of the model given the current absence of a statistically

significant variables. If we run into this problem, it must be one of the variables that are strongly affect, in the appropriate model.

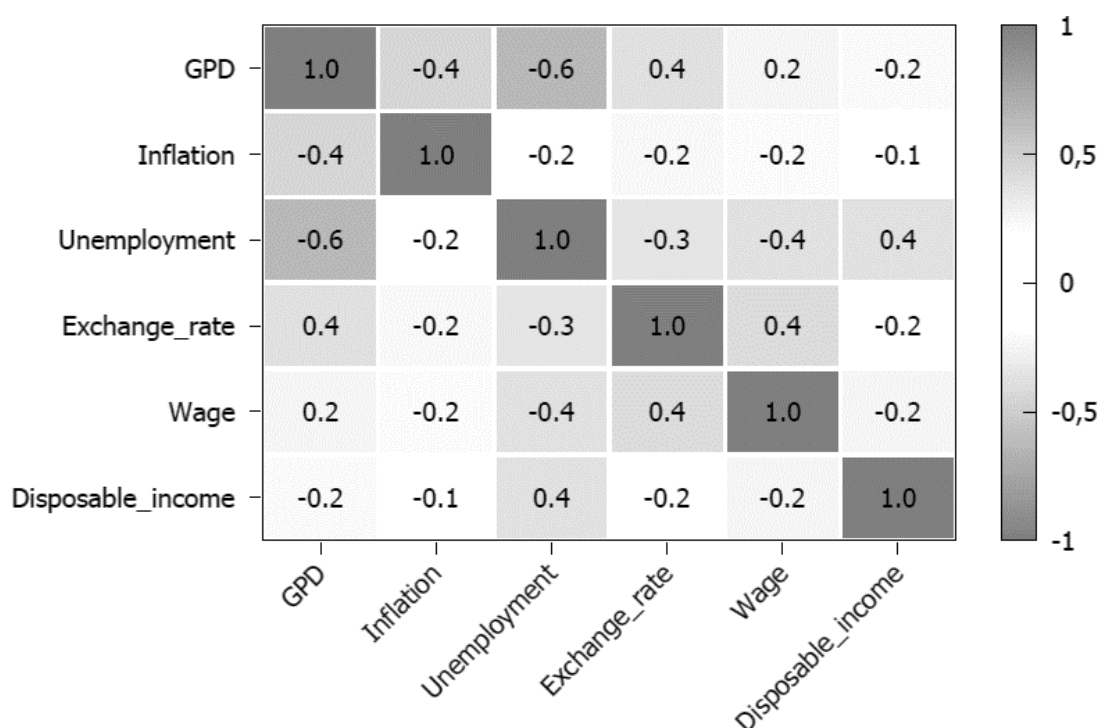
Stationarity – before the formation of the model itself, it is necessary to ensure that in models with correct variables. Whereas that is working with time series, it should be in addition to the discovery of multicollinearity also determine whether variables not occur any trend over time (the so-called non-stationary). Non-stationary variables (i.e., is there a trend) can be detected using the extended ADF-test (Dickey-Fuller test). In case of detection of unsteady variable will be differentiated using the first gap.

The apparent regression- the problem of the apparent regression may cause to obtain statistically significant estimates and the least squares for each other unrelated time series. Granger and Newbold (1974) in detecting the apparent regression of relationship from the index of correlation and statistics of DW. Designed to treat a regression, in which $R^2 > DW$ for probably the apparent, as this relationship may indicate that the residues are transient in nature.

5. RESULTS AND DISCUSSION

Firstly, it is necessary to determine the mutual correlation of variables, and exclude the existence of multicollinearity. Figure 4 shows the correlation matrix.

Figure 4. Correlation Matrix



Source: own in Gretl SW

From this matrix it can be observed, that the values do not show a high correlation, which might seem to be problematic. Analysis of individual variables using time series graphs and, above all, using extended ADF-test shows that for most variables we do not reject the zero unit root hypothesis, these variables may pose a problem of non-stationarity. The problem of non-stationarity is observed at the significance level $\alpha = 0.05$ for most variables. It was necessary to transform the variables using the first differences to eliminate non-stationarity.

After you have resolved the problems of multicollinearity, non-stationarity econometric model can be created. The default model is a model obtained from the OLS method, which takes the following form:

$$\text{Mortgage_loan} = \beta_0 + \beta_1(d_Inflation) + \beta_2(d_Unemployment) + \beta_3(d_Exchange_rate) + \beta_4(d_Wage) + \beta_5(d_GDP) + \beta_6(d_Disposable_income) + \varepsilon$$

This model showed a variable which cannot be to reject the hypothesis of a zero of the appropriate β coefficient, and the adjusted coefficient of determination was of little value. It is therefore necessary to carry out sequential elimination, after which only statistically significant variables remain in the model. The modified model has the following form:

$$\text{Mortgage_loan} = \beta_0 + \beta_1(d_Inflation) + \beta_2(d_Unemployment) + \beta_3(d_Exchange_rate) + \beta_4(d_Wage) + \varepsilon$$

The basic characteristics of the model are enumerated in the following table.

Figure 5. Regression Model Diagnostic

	Coefficient	t	p-value	
const	324.350	20.06	<0.0001	***
d_Inflation	76.4038	1.808	0.0481	**
d_Unemployment	-85.5464	-1.689	0.0390	**
d_Exchange_rate	69.526	2.283	0.0278	**
d_Wage	69.2897	2.560	0.0144	**

Coefficient of determination	0.559107	Modifi. coefficient of determination	0.330018
$F(4, 40)$	22.643942	P-value	0.037518
Logarithm of credibility	-100.9086	Akaike's criterion	311.8173
Schwarz criterion	320.8506	Hannan-Quinn's criterion	315.1848
RHO (coefficient of autocorrelation)	0.506506	Durbin-Watson (DW)	0.752527

Source: own in Gretl SW

Based on the p -values of F -test, which is less than 0.05, the hypothesis about the statistical insignificance of all parameter can be rejected. It can be observed, that this model according to the adjusted coefficient of determination explains 33% of variability explained by the variables. According to the above criteria, the model reflects some degree of meaningful value and can be marked that it has a high quality. The model also shows elements of apparent regression.

Figure 6. Dependent and Independent Variables Relationship

Dependent variable	Independent variables	relationship
Mortgage_loan	d_Inflation	positive (direct)
	d_Unemployment	negative (inverse)
	d_Exchange_rate	positive (direct)
	d_Wage	positive (direct)

Source: own

Independent variable the rate of disposable income growth and GDP were statistically insignificant (significance level 0.05) and indicators were eliminated from the model.

6. CONCLUSION

All economical and global crises have negative effects on states profitability. These negative effects can be caused by a decrease in the level of Gross Domestic Product, an increase in an unemployment or an increase in the level of consumer goods. What is more, crises can affect the change of thinking of individual entities (citizens, towns, municipalities, entrepreneurs) and can reduce the ability to invest or borrow money.

The article describes the evolution and the structure of bank loans provided to households in a defined period. The aim of this paper has been analyze the development of mortgage product portfolio in the household sector and its dependence on selected macroeconomic factors in the context of local conditions. To fulfill the aim of this paper, multiple linear regression has been used.

The aim of the multidimensional regression model was to identify and quantify selected factors affecting the mortgage market. When GDP is growing, the economy in the Czech Republic is expanding, so will businesses, jobs and personal income. In this situation, there will be no increase in unemployment rate, people will reach stable earnings, and the volume of mortgage loans will grow. Based on the results of the regressive model, there are main results:

- GDP shows no significant impact on the volume of mortgages provided.
- The number of mortgage loans is positively based on the inflation rate, exchange rate and the wage.
- The number of mortgage loans is negatively based on unemployment.

Finally, the mortgage loan is one of the oldest types of bank loans, whose repayment is secured by a real estate. Nowadays, the clients are primarily focusing the lower interest rates. In 1995, the interest rate in the Czech Republic was about 10 percent and fell to the current 2 percent. In these days, the loan market is offering mortgages only to the people with an adequate and stable income.

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APPLYING BENFORD'S LAW IN FINANCIAL STATEMENTS ANALYSIS

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Abstract

Benford's Law is used to detect manipulation in various spheres of life. Benford's Law can recognize the probabilities of numbers frequencies in a data set. The probabilities are based on mathematical logarithms of the occurrence of digits in randomly generated numbers in large data sets. When comparing the expected distribution following Benford's Law with the observed distribution in a data set, strong deviations from the expected frequencies may indicate the data to be suspicious and possibly manipulated. A digit analysis using Benford's Law is widely used by auditors, forensic accountants and it is also used for tax evasion.

The aim of this article is to verify whether comparable results will be obtained when applying the Benford's Law to all accounting data from accounting books, data in the financial statements, data from the VAT control statement and to decide whether Benford's Law can be used for special examinations by state authorities as an effective tool to spot anomalies in financial statements and VAT statement in Slovak conditions.

Keywords: Accounting, Auditing, Benford's Law, Fraud

1. INTRODUCTION

Over the last 17 years, the financial industry has been plagued by consecutive waves of financial crime (Ondrušová, 2011). Although financial crimes are not a new phenomenon in any sense, both the frequency with which they occur and their scope and impact seem to have increased over the last few decades. Many authors have suggested that financial frauds are more significant than in any other sector of the economy (Freeman, 2010; Fligstein, Roehrkasse, 2013).

Fraud or misrepresentation often creates clear patterns of error within complex financial data. There are developed sophisticated tools and techniques for uncovering these patterns and demonstrating that they are the result of deliberate malfeasance. Numerical data exploration technique that is used for fraud detection is known as Benford's Law (Baesens, Vlasselaer, Verbeke, 2015).

2. LITERATURE REVIEW

Though it is called Benford's Law, he was not the first to observe this digit bias. Benford's Law was published for the first time in 1881 by American astronomer-mathematician Simon Newcomb, and it was rediscovered only in 1938 by physicist Frank Benford (Pakšiová, Janhuba, 2012). Newcomb was led to the Law by observing that the pages in logarithm tables corresponding to numbers beginning with 1 were significantly more worn than the pages corresponding to numbers with higher first digit. A reasonable explanation for the additional wear and tear is that numbers with a low first digit are more common than those with a higher first digit. (Miller, 2015) Benford's Law refers to the probability of occurrence of numbers d ($d = 1, 2, 3, 4, 5, 6, 7, 8, 9$) on the first quantifiable features in any sufficiently large set of data. Benford studied the distribution of leading digits of 20 sets of data, including rivers, areas, populations, physical constants, mathematical sequences, sports, an issue of Reader's Digest, the street addresses etc.

Benford's Law explains that number frequencies are skewed more toward lower numbers. Ondrušová (2011) Benford's Law is sometimes referred to as the "first digit phenomenon" but later in the late 80s of the 20th century there were studies on Benford's Law that revealed also the

importance of the 2nd digit position. The following table shows the actual percentages of occurrence for digits 1–9 occupying the locations 1–2 as described in Benford's Law.

Table 1. Benford's Law

0	1	2	3	4	5	6	7	8	9
0%	30.1%	17.6%	12.49%	9.69%	7.92%	6.69%	5.8%	5.12%	4.58%
11.97%	11.39%	10.88%	10.43%	10.03%	9.67%	9.37%	9.04%	8.76%	8.5%

Source: Tumpach, 2009

Hal Varian suggested that Benford's Law could be used for the detection of possible frauds in the lists of socio – economic data submitted in support of public planning decisions. It is based on the assumption that people tend to fairly evenly create numbers in such a way that it is possible to compare the frequency of the digit on the first position with the division of the frequencies of the first digits using Benford's Law and based on potential differences it may be possible to indicate fraud (Hal Varian, 1972).

Carslaw observed that the numbers reported by companies in New Zealand did not contain enough nines in the second digit position. In fact, most of those companies had zeros in this position. He found that New Zealand companies rounded earnings numbers to the next number. If a company had a profit, for example 1.9 million dollars, the numbers were rounded to 2 million dollars. (Carslaw, 1988). The second study was conducted by Thomas who discovered similar findings in the profits of American companies (Thomas, 1989).

Nevertheless, Benford did not provide an explanation as to why we observe a decreasing frequency of occurrence of numbers, in given sets, which start with gradually increasing digits. Not until 1995 the mathematician Thomas Hill managed to prove the essence of this regularity and, in addition, presented its properties and conditions (Hill, 1995).

Mark J. Nigrini has been a pioneer in applying Benford's Law to auditing and forensic accounting. Nigrini performed a study applying Benford's Law to taxpayer data. Based on his research he determined that low-income taxpayers participated in more than unplanned evasion of their higher income counterparts (Nigrini, 1996). Further studies, which may not even mention the dissertation by Nigrini, use analyses with numerals to help identify tax evasion.

Benford's Law has also its limitations and not all data sets conform to Benford's Law. Examples of data sets that are not likely to be suitable for Benford's Law include:

- Numbers assigned to a person (Birth Numbers, Social Security Numbers),
- Telephone numbers, bank accounts,
- Data generated by formulas (e.g. YYMMDDXX),
- Data restricted by a maximum or minimum number,
- Numbers of orders and document numbers (generated by formulas),
- Wages (since minimum and maximum is set),
- Prices which take into consideration the psychological effect on the consumer (e. g. a price is not € 2, but € 1.99, etc.).

3. METHODS AND DATA

This paper will examine if Benford's Law is effective in detecting data bias by analyzing accounting data of selected company. The purpose of this paper is to determine whether there will be comparable results obtained when applying the Benford's Law to all accounting data from accounting books, data in the financial statements, data from the VAT control statement in selected company. Tests were conducted over a six-year period 2011–2016 in a company with more than 20 000 journal entries per year. The company was audited and there was no suspicion of manipulation of the accounting data or error.

Accountants classify and record the all events having economic effect via journal entries according to debit-credit rules in the system of double-entry accounting. Journal is a record that keeps accounting transactions in chronological order, i.e. as they occur (Krišková, Užík, 2016). The journal include large data set that can be used for applying Benford's Law. When we analysed financial statements, we analysed separately balance sheet and profit and loss statement and we did not take into account summary lines.

As one of the main measures to detect and prevent tax evasions, so-called VAT Control Statement was introduced in Slovakia since January 1, 2014. The VAT control statement has to be submitted by VAT payer for every taxable period (i.e. calendar month or quarter) for which he/she is obliged to submit VAT tax return (Parajka, 2015). VAT control Statement is also large data set that can be analysed. The VAT control statement contains details of individual accounting transactions that are subject to VAT. When analysing VAT control statement we summarized monthly data for one year and we tested them as a whole.

The accounting records and the VAT control statement have been tested on a company that has provided us with these details, even if these data are not public. The data were analyzed using MS Excel and the software IDEA. MS Excel was used to organize the data into a more useable form. The Excel spreadsheet included journal entries to accommodate the six years of data for each company extracted from their accounting software. The data compiled into the MS Excel spreadsheet were analyzed using the IDEA Software, education edition. Once imported into IDEA Software, the data were analyzed, using the command "Benford's Law."

4. RESULTS

The results are presented in the table form with the actual data percentages of occurrence compared to the expected percentages according to Benford's Law. The tables show the statistics for each individual number in the 1st digit location.

Table 2. Digit frequencies for first position in journal entries

	Frequency according Benford's Law	Y 2016	Y 2015	Y 2014	Y 2013	Y 2012	Y 2011
1	30.1 %	29.14 %	29.24 %	29.16 %	30,75 %	29.16 %	29.1 %
2	17.61 %	18.7 %	18.67 %	18.7 %	17.8 %	18.7 %	18.1 %
3	12.49 %	12.65 %	12.61 %	12.59 %	14.98 %	12.59 %	11.54 %
4	9.69 %	10.1 %	10.06 %	10.15 %	8.9 %	10.15 %	9.15 %
5	7.92 %	8.1 %	8.11 %	8.13 %	7.69 %	8.13 %	8.20 %
6	6.69 %	6.5 %	6.45 %	6.47 %	6.2 %	6.47 %	6.52 %
7	5.8 %	5.45 %	5.4 %	5.35 %	4.9 %	5.35 %	5.16 %
8	5.12 %	4.9 %	4.89 %	4.81 %	4.23 %	4.81 %	5.9 %
9	4.58 %	4.46 %	4.57 %	4.64 %	4.52 %	4.64 %	4.11 %

Table 3. Coefficient of correlation after application of Benford's Law on journal entries

	Y 2016	Y 2015	Y 2014	Y 2013	Y 2012	Y 2011
Number of journal entries	32761	29812	31302	21911	21692	20458
Coefficient of Correlation	0.9928	0.993	0.9925	0.994	0.9927	0.9982

According table we can say that accounting data were not manipulated. Manipulation would be indicated if digits 1–9 appeared in the first position significantly more or less often than expected. As presented in the tables 2–3, it is highly likely that the journal entries were not manipulated.

Table 4. Digit frequencies for first position in profit and loss statements

	Frequency according Benford Law	Y 2016	Y 2015	Y 2014	Y 2013	Y 2012	Y 2011
1	30.1 %	39.39 %	54.84 %	14.81 %	42.31 %	14.29 %	23.08 %
2	17.61 %	6.06 %	3.23 %	25.93 %	3.85 %	38.1 %	19.23 %
3	12.49 %	6.06 %	6.45 %	11.11 %	19.23 %	9.52 %	15.38 %
4	9.69 %	6.06 %	6.45 %	11.11 %	11.54 %	14.29 %	11.54 %
5	7.92 %	3.03 %	9.68 %	22.22 %	3.85 %	4.76 %	11.54 %
6	6.69 %	6.06 %	9.68 %	3.7 %	3.85 %	4.76 %	7.69 %
7	5.8 %	3.03 %	6.45 %	0 %	3.85 %	0 %	7.69 %
8	5.12 %	21.21 %	3.23 %	7.41 %	7.69 %	14.29 %	0 %
9	4.58 %	9.09 %	0 %	3.7 %	3.85 %	0 %	3.85 %

Table 5. Coefficient of correlation after application of Benford's Law on journal entries

	Y 2016	Y 2015	Y 2014	Y 2013	Y 2012	Y 2011
Number of entries	33	31	27	26	21	26
Coefficient of Correlation	0.69688	0.84948	0.51244	0.84908	0.50690	0.8950

Table 6. Digit frequencies for first position in balance sheet

	Frequency according Benford's Law	Y 2016	Y 2015	Y 2014	Y 2013	Y 2012	Y 2011
1	30.1 %	39.02 %	26.83 %	26.83 %	25.64 %	22.22 %	22.22 %
2	17.61 %	14.63 %	14.63 %	14.63 %	17.95 %	14.81 %	14.81 %
3	12.49 %	7.32 %	12.2 %	12.2 %	20.51 %	37.04 %	40.74 %
4	9.69 %	12.2 %	9.76 %	9.76 %	5.13 %	7.41 %	11.11 %
5	7.92 %	4.88 %	14.63 %	14.63 %	10.26 %	11.11 %	7.41 %
6	6.69 %	7.32 %	4.88 %	4.88 %	17.95 %	0 %	0 %
7	5.8 %	7.32 %	7.32 %	7.32 %	0 %	7.41 %	0 %
8	5.12 %	7.32 %	9.76 %	9.76 %	2.56 %	0 %	0 %
9	4.58 %	0 %	0 %	0 %	0 %	0 %	3.7 %

Table 7. Coefficient of correlation after application of Benford's Law in balance sheet

	Y 2016	Y 2015	Y 2014	Y 2013	Y 2012	Y 2011
Number of entries	41	41	38	39	27	27
Coefficient of Correlation	0.9415	0.8904	0.8773	0.7792	0.5978	0.5749

Table 8. Digit frequencies for first position in VAT control statement

	Frequency according Benford's Law	Y 2016	Y 2015	Y 2014
1	30.1 %	30.09 %	30.04 %	29.91 %
2	17.61 %	17.81 %	17.34 %	17.87 %
3	12.49 %	11.98 %	12.64 %	12.64 %
4	9.69 %	10.0 %	9.96 %	9.95 %
5	7.92 %	7.98 %	7.98 %	8.03 %
6	6.69 %	6.45 %	6.45 %	6.07 %
7	5.8 %	5.65 %	5.16 %	5.55 %
8	5.12 %	5.19 %	5.04 %	5.24 %
9	4.58 %	4.49 %	4.27 %	4.82 %

Table 9. Coefficient of correlation after application of Benford's Law on VAT control statement

	Y 2016	Y 2015	Y 2014
Number of entries in VAT control statement	11311	10046	9423
Coefficient of Correlation	0.9996	0.9995	0.9993

We analyzed separately balance sheet and profit and loss statement. The tables 4–7 reveals that the actual frequency of digits 1–9 occurring in the first position of the journal entries differs from the expected rate. If we strictly follow Benford's Law we can say that it is highly likely that the financial statements were manipulated. But based on analyses of journal entries (all accounting transactions booked in journal) we can say that accounting data were not manipulated.

The tables 5 and 7 display the actual number of entries. We can say that correlation is higher if there are higher number of entries in financial statements. There are more entries in balance sheet and also higher correlation.

When comparing table no. 2 and 9 we can see that there are not big differences in correlation. We can conclude that both journal entries and VAT control statement comply Benford's Law and both contain sufficient data to apply Benford Law. Using this experiment, we have found that although Benford's Law indicates fraud in the companies, it cannot indicate the fraud in financial statements. The results of analyses in the 6 years are comparable, despite the fact that the first two years there were different prescribed financial statements as in previous year (number of lines in financial statements changed, summary lines were not included).

One of the enduring problems with Benford's Law is false positives (conclusion of nonconformity when the data are not biased, and therefore in conformity). False positives are more prevalent with smaller data sets. This was confirmed while testing balance sheet and profit and loss statement.

Benford's Law is effective in detecting data bias in journal entries but ineffective in detecting the bias in financial statements. Benford's Law is not applicable for automagical examinations by state authorities if only financial statements are available.

5. CONCLUSION

This research study has applied Benford's Law in selected company and demonstrates that Benford's Law is effective in detecting data bias in journal entries but ineffective in detecting the data bias in

financial statements but on other hand Benford's Law can be perfectly applied on data from VAT control statement. It is important to note that there are some limitations in Benford's Law. The probability that Benford's Law will detect fraud financial statements is very low. The use of Benford's Law in audit or special examinations by state authorities focused on VAT control statement can be an effective tool to spot anomalies in data. Based on the analyses it is obvious that Benford's Law is applicable only for bigger data sets. If analysed data do not comply with the expected observed frequency of the first digit as expressed by Benford's Law it is probable that the involved data were manipulated and further investigation or testing is required. Conversely, Benford's law cannot detect all frauds in data sets and however data set samples with Benford's law, it can still be fraudulent. The purpose of further research is to analyze multiple companies, but the limitation is that these data (except for financial statements) are not public. According to our information, the Slovak state authorities, despite of having a large amount of data submitted by companies, still do not use the Benford's Law or similar statistical tool to analyze these data.

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Summary and Final Comments

Following four successful years of “**IFRS - Global Rules and Local Use**”, AAU has organized the fifth conference in 2017. We have assembled experts in accounting theory and practice, and the international academic and student community to exchange perspectives and research regarding the application of International Financial Reporting Standards (IFRS) within specific national conditions.

Special attention is paid to the influence of national culture on implementation IFRS, its forms and results. The array of international contributors provides an opportunity to look at implementation and use of IFRS in the Czech Republic, Estonia, Romania, Poland, Cyprus and other European countries. Beyond national borders, accepted and presented contributions also characterize the current state of knowledge about application of IFRS at different levels and from different perspectives. Further, the conference hosts papers related to new directions engendered by ethical and environmental issues confronting business models in the current world economy.

Conference proceedings from years 2014, 2015 and 2016 are available on the Web of Science Core Collection integrated within WEB OF SCIENCE THOMSON REUTERS. Looking forward, the conference aims primarily to provide an opportunity to facilitate gathering of academics, concentrating on development of papers and/or on preparation of joint academic works. Papers herein are further made publishable in journals included in world databases SCOPUS and Web of Science to promote academic standards of presentation by academics and universities.

In summary, these contributions provide enlightened insight into knowledge and experience brought by implementation of IFRS in different arenas of national economies, in order to enhance comprehension and definition as to its current stage.

We believe that this collection of conference contributions will inspire further research into solutions for actual practical challenges.

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