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Singidunum University International Scientific Conference

THE ROLE OF FINANCIAL AND NON-FINANCIAL REPORTING IN RESPONSIBLE BUSINESS OPERATION

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Singidunum University International Scientific Conference

THE ROLE OF FINANCIAL AND NON-FINANCIAL REPORTING IN RESPONSIBLE BUSINESS OPERATION

Challenges in Modern Corporate Governance

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Singidunum University International Scientific Conference

THE ROLE OF FINANCIAL AND NON-FINANCIAL REPORTING IN RESPONSIBLE BUSINESS OPERATION

ABOUT FINIZ 2018 CONFERENCE

It is our immense pleasure to introduce the proceedings of the international scientific FINIZ 2018 Conference, which will be held on December 7, 2018, on the premises of Singidunum University in Belgrade. The main topic of this year's conference is: "***The Role of Financial and Non-Financial Reporting in Business Operations***".

The aim of this conference is to provide a multinational platform where the latest trend in the area of *Financial and Non-Financial Reporting in Responsible Business Operation* shall be presented and discussed by eminent scientists and experts from the field. We are immensely pleased that this year's conference has gathered a substantial number of authors and partners, who are supportive of the main objective of the conference – to contribute to the improvement of the overall performance of the responsible business operation in the Republic of Serbia.

Reporting on Corporate Social Responsibility represents an increasing global practice of responsible companies. The main characteristic of the implementation of responsible business operation in the Republic of Serbia is the use of circular economy and green costs tools, so that they eventually become the primary postulates in the companies operating in the Republic of Serbia. On the other hand, there is a need to engage accounting professionals in order to support the activities of circular economy.

Given the applied nature of various contemporary research topics, such as financial statements analysis, models for predicting corporate financial performance, mergers and acquisitions, corporate valuation methodology and many others, authors' focus is put on managerial implications of the findings, to assure that the results are relevant and that they can be readily applied by practitioners in organizations.

Authors drew attention to importance not only of financial reporting indicators, but also non-financial indicators among different industries in the Republic of Serbia. They stressed that companies and individuals should be socially responsible, and committed to save the healthy environment.

Moreover, the current global financial and dynamic environment is focused on the emergence and increased development of crypto currencies – which has both monetary and technological background in all spheres of life. From the monetary aspect, crypto currencies have emerged as one of the solutions to the consequences of the last major World financial and economic crisis. As the exchange and trade with crypto currencies is steadily rising, consequently, they have become in the focus of financial reporting. Accordingly, it represents a huge challenge for accountants i.e. how to book it/them in a proper way. Furthermore, transactions concluded with foreign-exchange clause have a significant impact on the performance of a company, and knowledge of market risk management is needed in order to decrease the level of foreign-exchange differences.

Furthermore, they emphasized that accounting framework accounts for only about 50% of effective information data. Most of this information is related to tangible assets. If one takes into consideration the importance of intangible assets, there is an increasing demand to financially report them in the official companies' statements. This information can be used for decision-making processes in business. Unfortunately, the existing situation shows a lack of financial reporting quality. This may lead to a situation when stakeholders of the companies do not trust financial accounting data and do not use it often for decision-making.

All the accepted papers have undergone a thorough review process, performed by the reputable members of the Conference Organizing and Scientific Committee.

The overall statistical data on the conference are as follows:

- The total number of submitted papers / abstracts: 21
- The total number of full papers submitted: 19
- The total number of accepted papers: 17
- The total number of rejected papers: 1
- The total number of withdrawn papers: 1

The number of papers according to their related field:

- Accounting: 5
- Audit: 2
- Controlling: 2
- Corporate Finance: 1
- Corporate Governance: 2
- Banking: 3
- Insurance: 1
- Forensic Science: 1

The total of 35 authors from 8 countries have taken part in this year's conference. The number of authors according to their country of origin: Austria: 1; Bulgaria: 1; Bosnia and Herzegovina: 2; Croatia: 1; Lithuania: 3; Poland: 3; Serbia: 23 and Slovakia: 1.

All the accepted papers are published and made publicly available within the Conference portal. Each paper is assigned its DOI number, a reference on Google Scholar, and the Conference Proceedings have an ISBN number.

As Singidunum University is strongly committed to continuous enhancement of financial reporting and corporate governance, it will keep on promoting this issue among the scientific and general public with the aim to put forward practical scientific and business solutions that could ensure long-term survival and sustainable growth of the corporate sector.

Organizing Committee of the
International Scientific Conference FINIZ 2018

Singidunum University International Scientific Conference
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INVITED PAPERS
Scientific - original paper

POSSIBILITIES OF NON-FINANCIAL REPORTING IN THE HOSPITALITY

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Abstract:

Apart from standard financial indicators, monitoring and the analysis of hotel operations are characterized by specific indicators for this activity (GOP, GOPPAR, REVPAR, TREVPAR etc.), but non-financial indicators that we find in the companies' non-financial reports have a large share in the rating and ranking of hotel operations. Non-financial reporting contains reports on sustainability and corporate social responsibility and EU Directive 2014/95/EU on non-financial reporting, which was implemented in the legislation of the EU member states by the end of 2016, has been in force since December 2014. The set of these reports consists of documents that report on the ecological, social and economic sphere of companies' operations and they contribute to the analysis of strategies and business positioning, which is interesting for stakeholders (external and internal). In this paper, the basics of non-financial reporting will be presented through the prism of company's operations in the field of hotel business.

Keywords:

non-financial reporting, social responsibility, hospitality

INTRODUCTION

Sustainability and corporate social responsibility report is increasingly represented in the world practice of responsible companies, which enables them to monitor their economic, ecological and social impacts and inform the interested public about this. According to Malinić & Savić (2011), traditional financial reports are adequate for an industrial era, but not for an IT era. What is more, the mentioned authors think that financial statements cannot fully meet the expectations and needs of stakeholders, so the solution is found in supplementing financial information with non-financial information which complements the company image.

Beke-Trivunac (2016) points out that non-financial reporting has multiple tasks, to inform stakeholders in the organization better, to help the management to comprehensively analyze all the business components of the company it manages and provide a better insight into organization activities which are of public interest or public good. It is Dolamić (2016) who points out that every non-financial report should include: a brief description of the company's business model; a description of the company's policies related to the above issues, including the detailed analysis being carried out; the results of these measures; the underlying risks associated with those issues related to the company's operations including, where relevant and proportional, its business relations, products or services that may cause adverse effects in those areas, and the manner in which the company manages those risks; non-financial key performance indicators important for a particular business.

According to Vićentijević (2016), methodology for the entities subject to tax for the preparation of non-financial reports is not prescribed by Directive 2014/95/

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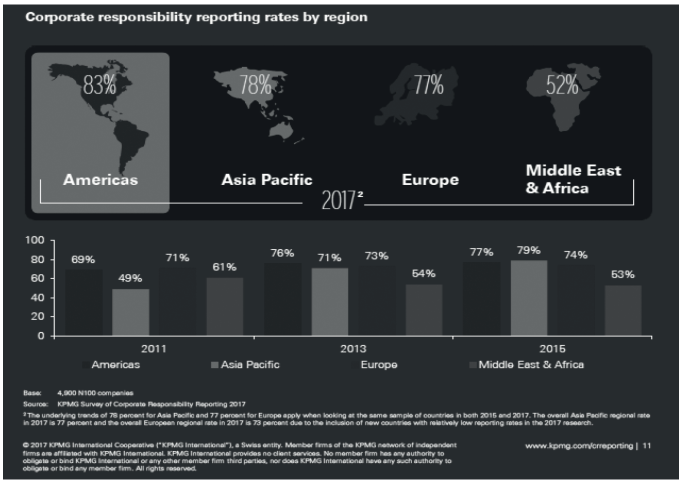
EU. They may apply one of the following regulations: national regulations, guidelines of the EU eco-management and audit scheme (EMAS), GRI reporting guidelines, OECD guidelines, UNGC, UNGP for business and human rights, ISO 26000, ILP Tripartite Declaration. It is this diversity and freedom of choice that leads to discrepancy in data and their incomparability, when it comes to the way of non-financial reporting. In this regard, stakeholders (mainly investors) believe that non-financial reports should be unified like the financial ones, so that the information from the report can be valorized in making investment decisions (Knežević, Pavlović & Stevanović, 2017).

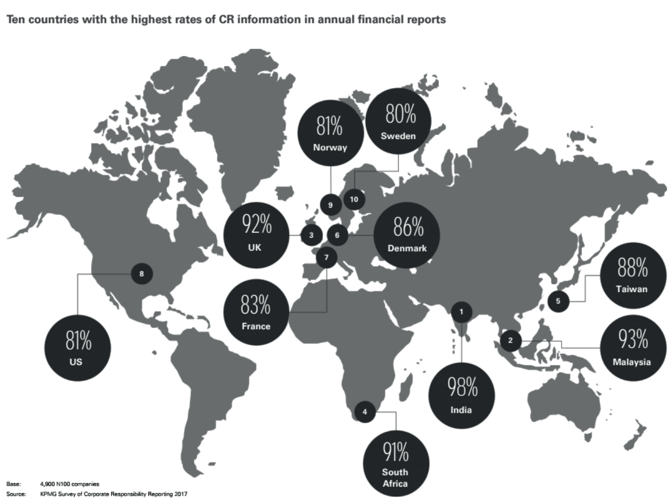
In its latest report, KPMG (2017) provides an overview and comparison with the data from the previous report of 2015, and when it comes to the segment of America non-financial reporting is in a significant increase of 6%, while for the segment of Europe the situation is mixed. Namely, the results show a growth of 3%, but at the same time internal data of KPMG suggest that the reporting rate in the countries of Eastern Europe is still not satisfactory, and that the impact of European directive on non-financial reporting has not yet been completely felt (Figure 1). At the same time, in the survey of corporate responsibility report, KPMG ranks the countries of the world according to the representation of non-financial reporting in 2017. Although there is a slight decline in the rate when it comes to the segments of Asia/Pacific and Middle East/Africa, there is a high rate of non-financial reporting in three countries from these regions - India 98%, South Africa 91% and Malaysia 93% (Figure 2).

Figure 1. Corporate responsibility reporting rates by region in 2017



Source: KPMG Survey of Corporate Responsibility Reporting 2017

Figure 2. Countries rang with the highest rates of non-financial reporting



Source: KPMG Survey of Corporate Responsibility Reporting 2017

In the case of the Republic of Serbia, a very small number of companies apply non-financial reporting, and the regulatory framework is not clearly defined. Nevertheless, Article 29 of the Law on Accounting (2013) clearly defines the form of the annual business report within which there are segments that form the elements of non-financial reporting. Public companies, as well as companies that are being prepared to become public in accordance with the legal regulations governing the capital market, are obliged to submit the annual business report according to the aforementioned Article of the Law (Vićentijević, 2016).

In this regard, Knežević, Pavlović & Stevanović (2017) state that in the following period the Government of the Republic of Serbia has a task to harmonize the Companies Law and the Accounting Law with Directive 2014/95/EU, in accordance with the strategic orientation towards accession to the European Union and to oblige the companies in the Republic of Serbia with more than 500 employees to disclose non-financial information required by Directive 2014/95/EU in the consolidated business report or in the form of a separate report. In a survey conducted by the authors, on a sample of companies that trade on the Belgrade Stock Exchange within the BELEX 15 basket, it was observed and concluded that only one (NIS JSC) of the eleven analyzed companies published an independent non-financial report. The remaining ten companies implemented partial non-financial data in the annual business report (Knežević, Pavlović & Stevanović, 2017).

REVIEW OF NON-FINANCIAL REPORTING IN THE FIELD OF HOSPITALITY

On the global level, in all economic activities, the application and reporting on indicators related to corporate social responsibility is of great importance. We should bear in mind that in the hotel business, specific indicators related to this activity - GOP, GOPPAR, REVPAR, TREVPAR and financial indicators, so-called ratio numbers that we obtain by insight and accounting from financial statements, are important when it comes to decision making and performance evaluation. We should also point to non-financial indicators that are not irrelevant and have a significant impact on ranking when it comes to hotel business. There are a number of non-financial indicators conditioned by segments of social responsibility that affect and express the level of hotel service quality, satisfaction and guests loyalty, location of the facility, employees motivation, etc., which indirectly contributes to the degree of capacity utilization and business result of the hotel company.

Corporate social responsibility in hotel industry implies the necessity to monitor the mission, to have a vision and business strategy in its business activities. At the same time, the application of principles of corporate social responsibility implies the integration of ecological and socio-economic segments important for successful business operations. Garrick (2015) points out that if hotel operators adopt and integrate segments of corporate social responsibility into their organizational strategies, they can facilitate the innovation, increase and/or improve organizational competitiveness and at the same time contribute to solving social problems.

Hotel companies business should be valued by international standards that affect the management and quality of business, resulting in a business outcome. In this sense, there are several standards that hotel companies can implement in their business, whether they are integrated into business processes or advisory. According to Barjaktarović (2016), the current standards, which are in synergy with CSR and are recommended to be used by hotel companies, are the following: standards of the ISO 9000 series, standards of the ISO 14001 series – Environmental Protection Management, Food Safety Standards (HACCP, ISO 22000, HALAL), OHSAS 18001 – Occupational Health and Safety Management System, ISO 26000 - Corporate Responsibility Guidelines, ISO 50001 - Managing Energy Efficiency in Hotel Industry. According to Legrand, Sloan & Chen (2013) the application of sustainable business principles influences the profitability resulting from the implementation of environmental management standards and energy efficiency standards that affect the cost savings in business processes in hotel facilities.

According to the data of the competent Ministry (2018), Serbia has a total of 394 categorized facilities. Categorized accommodation facilities have registered their business in different legal forms (entrepreneurs, LLC, JSC) and therefore the manner and scope of their financial reporting varies. In this regard, we would like to emphasize the obligation to submit financial reports as a legally prescribed activity and the companies located on the Belgrade Stock Exchange (Sector I - Accommodation and Nutrition) are obliged to submit the annual business report as well. By analyzing the prospectus of companies listed in Sector I, the annual business reports with the focus on financial reporting have been found. Information on corporate social responsibility activities (non-financial indicators) is mentioned minimally and it is mainly related to investments in the energy efficiency of the facility or environmental protection by the company, which is very sporadic.

ANALYSIS OF THE SAMPLED NON-FINANCIAL REPORT IN THE HOSPITALITY SEGMENT

When it comes to situation analysis of non-listed hotel companies reporting, the results are identical. Namely, when submitting a business report from companies operating in the field of accommodation and food, it is possible to find annual business reports which provide minimum information on activities that point to indicators from the domain of non-financial reporting.

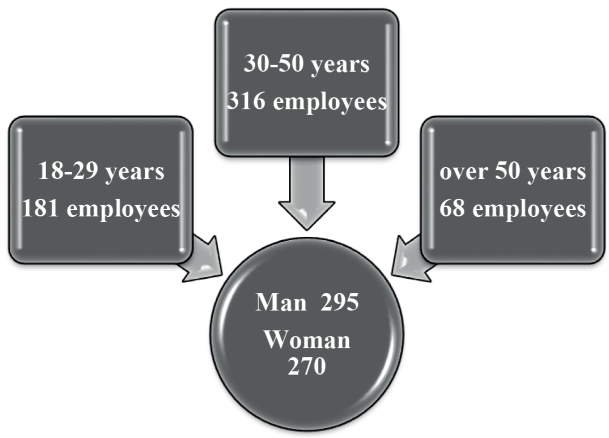
Delta Holding company, which consists of Delta Real Estate Group, is in the focus of our analysis. Delta Holding is a corporation that fully recognizes the importance and necessity of socially responsible behavior and business. Socially responsible behavior has been adopted by Delta Holding as a business principle that is achieved through the quality of products and services provided, employees development, environmental protection and relations with the social community, which has been regularly published in so-called CSR reports since 2009 (www.deltaholding.rs/odrzivi_razvoj/princip_poslovanja.160.html). In the past seven years, the company has been working on CSR reports using the GRI2 (Global Reporting Initiative) methodology that ensures transparency, measurability and comparability of the data presented in the reports. The report for 2017 is in accordance with the GRI, G4 methodology, Core Level and it also meets the requirements of the advanced level of progress report on the United Nations Global Compact. In order to independently verify the report, Delta Holding Company hired the audit firm KPMG in 2018 (www.deltaholding.rs/press_room/saopstenja_za_medije/Delta-Holding-predstavio-deveti-izvestaj-o-odrzivom-i-odgovornom-poslovanju.281.html).

Delta Real Estate Group, as a member of Holding, implements business activities in the field of strategic planning and projects development, construction and issuance of shopping malls, retail parks and business premises, and the construction and management of hotel facilities (www.deltarealestate.rs/kompanija/o_nama.50.html). Delta Real Estate Group focused in one segment of business on hotel industry and in 2007 started business cooperation with the InterContinental Hotel Group (IHG). At the beginning of 2014, with the reconstruction of the existing hotel facility, with an investment of 40 million Euros, a new hotel of the world brand – the Crown Plaza was opened in Serbia. Operating to the highest standards of IHG in 2014, the Crown Plaza Hotel in Belgrade was ranked as the best Crown Plaza hotel in Europe. Partnership with IHG continues in 2016 by taking over the Holiday Inn Hotel in New Belgrade and by building and opening the InterContinental Hotel in Ljubljana in 2017. In the privatization process, Delta Real Estate Group became the owner and started managing the Park hotel and the Nacional hotel located in Belgrade. What is more, the project of building the Indigo brand hotel in the center of Belgrade is also present and according to the CSR information, the value is 7.6 million Euros and the latest state-of-the-art ecological materials will be used in the construction.

When reviewing and analyzing non-financial report - CSR report on the business of Delta Holding for 2017, significant information about the operations in the area of hospitality is related to the information regarding the business of the Crown Plaza Hotel in Belgrade. The hotel has 416 rooms, 14 meeting rooms, three restaurants, a spa center and a swimming pool. The dishes in restaurants are conventional, vegan, gluten-free or prepared in accordance with HALAL standard. The food is controlled by the FTC (Food Testing Center) once a month, while IHG checks the food quality once a year. The hotel is fully accessible to people with disabilities (PWD) and accordingly offers menus in Braille to the guests. For the purpose of promoting a healthy life, the guests of the hotel have bicycles and maps with drawn running paths at their disposal. Additional services were introduced at the Crown Plaza Hotel in Belgrade in 2017: menu innovation at Prime Restaurant twice a year, IHG program Children Eat Free, Barista coffee station for breakfast, Fresh Juice station, music programs during Sunday lunch, free Food Tasting program for organizing private events, specialized service packages for holidays and seasonal events.

The situation analysis, which was based on the review of the CSR report for 2017, the part referring to employees, points to the fact that a total of 3317 people were employed in Delta Holding in 2017. 565 of them were employed by Delta Real Estate Group. The structure of employees is given in the picture 3. All the employees are familiar with the ethical code, rights and obligations that they have in accordance with the principles of communication, non-discrimination, abuse, mobbing and alerting at workplace.

Figure 3. Age and gender structure in Delta Real Estate Group



Source: Author according to data from CSR Report 2017. year

During the year, the employees have necessary professional practice and trainings and there were 7253 hours of training for employees from all sectors of the company in the field of safety, health at work and fire protection in 2017. Also, in 2017, about 400 young people acquired knowledge and skills within the practice intended for pupils and students in Delta Holding, so in the Crown Plaza Hotel in Belgrade more than 290 pupils and students attended the IHG Academy.

When it comes to environmental protection, the scope of activities in this direction is generally accepted by Delta Holding (CSR, 2017: 63). Namely, management and employees know how important environmental protection is for human health, and in order to develop the awareness of employees that the company can contribute greatly to environmental protection by corporate responsibility, a special part has been created on the internal portal "eco corner". Employees have the opportunity to be informed about the current global and local challenges and measures for their overcoming in this section. Bins for sorting waste and posters with tips for saving water and energy are placed in the business premises of the company. Throughout the year, the company's management organizes different lectures for employees, which help them to adopt and properly apply the principles of environmental protection. Managers of Delta Holding are engaged as members of expert teams dealing with the improvement of laws and regulations in the field of environmental protection. According to the CSR report (2017: 66), the applied energy efficiency measures indicate that a modern and comprehensive building management system (BMS) has been implemented in Delta Real Estate Group hotels. Its application allowed monitoring the work in all sectors, as well as the power devices which are used in facilities, in order to maximize savings. The system functions according to the principle of conditionality of the visitors' number and external influences (natural light and air temperature), so according to these factors the operation of heating and cooling devices is adjusted.

When it comes to environmental protection and energy efficiency standards, the Green Engage program is implemented in the Crown Plaza Hotel in Belgrade, which aims to reduce the harmful impact of hotel business on the environment and increase energy efficiency. The service is constantly enhanced by technical improvements and expansion of the offer in all sectors of the hotel. In accordance with the aforementioned, the CSR report (2017: 66) states that the Crown Plaza Hotel in Belgrade further reduced the electricity consumption by replacing 100 bulbs in decorative reflectors with LED module lamps. It is estimated that about 13,800 kWh of electricity will be saved annually. Furthermore, 12 panels with 96W fluorescent tubes have been replaced with 45W LED panels. The expected annual savings is 3,840 kWh of electricity. At the same time, in compliance with the application of standard, the company also takes care of water consumption, in accordance with the principles of sustainable tourism. The staff and guests of the hotel are reminded in written instructions to rationally use water when having a shower, washing their hands and face. Ecological biodegradable products are used in the kitchen and household sector. 137 existing filters were replaced with water saving ones in the Crown Plaza Hotel in 2017 and the expected annual savings is 3,800m3 of water. When we analyze waste management segment, the results in the CSR report (2017: 70) are given in the form of data related to the quantity of disposed non-hazardous waste of 96.48 tons and hazardous waste of 2.02 tons at the operations level of the entire Delta Real Estate Group. Waste disposal operations are carried out in cooperation with the non-profit organization Delta Pak, which is a part of Delta Holding.

In 2017, the focus was on adopting a new way of communicating with guests in order to make the information clearer and more accessible. In order to show respect for clients and nurture loyalty, sales and marketing department sends greeting cards to guests on national holidays, anniversaries, traditional holidays and other occasions. During the year, the quality of service is evaluated through questionnaires sent to each guest whose e-mail address is recorded in the operational program of the hotel. Guest satisfaction is monitored through the internal IHG platform Medallie. Guests receive questionnaires and express their opinion on all segments of service. The result of the assessment in 2017 was 92.47%. Complaints and negative guest comments are answered within 72 hours. Records of complaints are received by all relevant departments in order to avoid the situation causing the appeal in the future. Reasonable complaints are accepted through additional reward points, additional services or benefits for the next arrival (CSR, 2017:40). Creating additional value for regular guests is achieved through two loyalty programs of the IHG System: IHG Rewards Club and the Meeting Rewards Club. Both programs guarantee additional benefits if you book a room or a meeting room. There are also special benefits for guests who book rooms through the IHG site. In 2017, the implementation control of cash management standards was also carried out by IHG Group within the cash audit program. Throughout the year, the standards of work are improved and harmonized with the amendments of the IHG brand standards which are reviewed every three to four months.

Business quality and sustainability commitment have contributed to Crown Plaza hotel in Belgrade being awarded by IHG for the following positions: IT Manager Star Awards (Do the right thing), IT Manager Star Awards (Work Better Together) and Technology Manager for 2017 for excellent business results. Furthermore, they have been given the Ambassadors of Good Service award in the Reception category by the Ministry of Trade, Tourism and Telecommunications and the Tourism Flower Editorial Team.

Thanks to these activities related to corporate social responsibility, the Crown Plaza Hotel in Belgrade had 109,228 overnights, 71.5% of capacity and revenue of 13 million Euros in 2017 (CSR, 2017:40). Among European hotels of the same brand the Crown Plaza hotel in Belgrade has won the following awards: the first place for the employees satisfaction, the second place as a hotel that guests would recommend and the third place as a hotel which would make the guests stay loyal to the brand. The average rating score for the hotel was 8.7 (very good) on Booking.com, 4.5 on Trip Advisor portal and 8.4 (very good) on Trivago portal. The hotel was rated with a high rating of 4.8 according to the survey and comments made by guests on the site.

CONCLUSION

Pioneers in the implementation and monitoring of non-financial reports and activities from the domain of corporate social responsibility in Serbia are foreign-owned companies that have invested in this market, but operate according to the standards of domicile countries. Companies dealing with hotel business in Serbia do not have transparent reports on corporate social responsibility, so-called non-financial reports, and the knowledge about significant information from this type of report can certainly affect the choice of users of services/guests. When it comes to reporting on hotel business, one of the obstacles in the realistic view of our research, so-called restrictions on research, is the fact that a large number of hotels in Serbia operate within companies that are mostly engaged in business, i.e. economic activity from another area (construction, production, etc.). Since hotel industry is one of many sectors, business report is unified within the entire company.

The results of CSR report analysis indicate a multidimensional approach to reporting, which GRI reports and implies, from the aspect of economic, social and environmental issues. In this paper we tried to find and analyze the data and facts related to the operations of Delta Real Estate Group from the consolidated CSR report on sustainable and responsible business of Delta Holding in 2017, focusing on the data for the Crown Plaza Hotel in Belgrade as an integral part of the group, wherever possible. Bearing in mind the findings and data that are collected and published in the CSR report, as well as their significance, it is very important to start this topic when it comes to non-financial reporting in the hotel industry. Based on the data that can be found in the previous business, with regard to socially responsible and sustainable business, it is possible to significantly influence certain corrections in the planning process when it comes to investment business, financial planning, promotional activities, etc.

Therefore, the goal of companies in the field of hotel industry is to focus on implementation, monitoring and reporting related to socially responsible and sustainable business activities. If we look at the complexity of the hotel company business, the application of these strategies can improve and/or increase competitiveness in the tourism market, which inevitably leads to better business / financial performance. It also influences innovation in business, as well as social contribution to the community and sustainable tourism awareness.

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INVITED PAPERS
Scientific - review paper

THE OPTIMAL CAPITAL STRUCTURE FOR POLISH ACQUIRING COMPANIES – THE PRODUCTION SECTOR

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Abstract:
The paper explores the viability of a theoretical construct of an optimal structure of financing for Polish receiving companies in preparation for their acquisitions. The study was based on a sample of Polish receiving companies operating in the production sector in the period of 2002 – 2013 and applied to periods of 1 year prior to the planned merger or acquisition. The research employed instruments of statistical analysis, with focus on linear and multinomial regression. The findings seem to confirm the utility of a theoretical construct representing a structure of capital deemed optimal to ensure an increase in asset operating profitability.

Keywords:
mergers, acquisition, capital structure, leverage

INTRODUCTION

The paper explores the notion of a theoretical optimal level of financing for companies preparing to receive M&A benefits. The term 'optimal level', for our purposes, should not be interpreted in terms of an M&A success or failure. For this reason, the research group did not include those companies where M&A plans were eventually put on hold. The optimal level of financing is defined here as a financing structure that offers best increase in asset profitability. Mergers and acquisition do not come instantaneously – those processes require lengthy preparations for all the actors involved. From the viewpoint of the Polish Code of Commercial Companies – a statutory act regulating, among other things, the formal and legislative aspects of mergers and acquisitions – such processes may be settled based on a transfer of shares or stocks to the new owner. The share exchange ratios defined in negotiations between the trading parties may be related to income levels reported by the merging companies. For this purpose, the negotiating parties may choose to influence the outcome through a skilful use of their capital structure (debt levels) to present an increase in financial result and, consequently, an increase in their reported asset profitability ratios. Based on literature studies, two theoretical approaches to the task at hand can be seen as the most important here, namely: the trade-off theory and the pecking order theory. In accordance with the trade-off theory, in choosing their approach to financing of economic operations, companies should balance their benefits (e.g. those related to the tax shield) against the risk of insolvency or bankruptcy produced by further debt increase. On the other hand, companies in stable financial positions may prefer to retain parts of their profits to finance their operations, rather than rely on debt financing (the pecking order theory). Thus, it may be assumed that debt contracting may be an appealing solution for companies to a certain point, but the most profitable companies and those with

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strong development perspectives may display preference for own equity financing. In view of the above, the central research hypothesis of this study is formulated as follows:

H1: there is an optimal structure of financing for companies to be pursued one year prior to the planned transformation of ownership

LITERATURE STUDIES

Professional literature defines capital structure in terms of a financial leverage. This is, naturally, a simplification, commonly adopted in scientific studies. In principle, a financial leverage represents an impact made by a company's financial policy upon the generated financial result. The leverage phenomenon involves an increased reliance on external sources of financing for the increase in reported financial result. In practice, this means that any increase or decrease in the volume of external capital involvement will produce an appositely multiplied increase or decrease in reported financial result. Capital structure, on the other hand, is a measure of a company's approach to financial policy. There are many methods for measuring company capital structure. The most popular[1], and at the same time – the most intuitive – measure defines it as a share of third party capital in total capital. Evaluation of capital structure should involve proper identification of sources of financial information. Financial data may come from the market or be derived from financial reports. The use of market data can only be applied to companies listed with regulated capital markets; for the majority of companies, however (and for the majority of mergers), market data is not available. This means that financial reports are the only viable source of financial information on companies under study. The most fundamental difference between market information and that from financial disclosures lies in information potential offered by each type of data. Bookkeeping records are mostly historical in content, and are used to measure past events registered for the previous reporting period. Market data, on the other hand, supplement the above with information on future activities and development plans. The choice of data type is thus defined by the composition of the research sample – in our case; the majority of companies were not listed with any regulated capital market. Another argument in favour of bookkeeping records as a basis for this study's evaluation comes from conclusions made from literature studies, namely the oft-reported low statistical significance of differences between market values and bookkeeping values, and the high correlation between bookkeeping and market values of debts (Haas, Peeters (2004)).

In line with the trade-off theory, the optimal capital structure of companies represents a trade-off between benefits and costs. The theory was pioneered by Modigliani and Miller (1963) and later developed by Kraus and Litzenberger (1973), and Bradley (1984). Further developments included observations that company capital structure may also be related to company development plans, such as new investments. Companies may, by power of their owners' decision, receive new capital in the form of retained profits, with the view of improving the return rates. In cases like this, the share of external capital in more profitable companies will be notably lower. On the other hand, capital retention instruments are not included in the income tax base as due from company owners. New perspectives for balancing the costs and benefits offered by the use of third-party capital are explored, among others, by Hennessy (2005) and Welch (2004).

Further explorations of capital structure in economic entities were strongly affected by the introduction of the concept of information asymmetry in economy. With large asymmetry, creditors will demand more interest, and this will lead to increase in capital cost. The information asymmetry may be reduced by increasing the frequency of forecasts and of the financial reports used to confirm their effects. However, this requirement is only formally expected from public companies listed on regulated capital markets. The steep cost of external capital acquisition has the effect of making companies more inclined to use own assets to finance their operating and development activities (i.e. assets from retained profits) before they decide to seek additional support from third-party providers of capital.

A positive correlation between financing structure and financial result may suggest the use of the trade-off theory, while the pecking order theory may be more suitable in cases where this correlation is negative. In a study by Dufour *et al* (2017), conducted on a sample of French companies, the authors observed a negative correlation between capital structure and company profitability. The results were confirmed in Placin-Sanchez (2013). This may suggest that profitable companies are generally less burdened with third-party obligations.

METHODOLOGY AND FINDINGS

For the purpose of the study, the author employed a database of companies produced by InfoCredit S.A. at the commission of the Bookkeepers' Association in Poland. The database contained information on company mergers formally registered with the National Court Register of companies. In line with pending legislation, receiving companies are obliged to report any such ownership transformations to the authority of the National Court Register. This mechanism was designed to allow for automatic exclusion of entries related to companies identified

1 After T.Berent.

as being acquired – they are removed from the register immediately after the conclusion of the merger, and their rights and obligations are transferred to the receiving company. Mergers offer the benefit of avoiding the burden of company liquidation procedures. Under the Polish law (the Code of Commercial Companies), merger procedures require only a transfer of ownership titles from the company being acquired to the receiving company as its immediate successor. The above regulation applies to all mergers, with the only exception being mergers of companies that remain in the same capital relation – to avoid situations where the receiving company issues own shares and stocks only to transfer them to itself.

The study focused on timeframes proceeding the moment of merger. Since the study represents a preliminary examination, the author decided to reduce the standard timeframe coverage of 5 years prior to merger and concentrate on the final phase of the preparation process, i.e. one year prior to merger.

The research sample comprised of 105 companies. Of these, 17 observations were excluded from analyses, as untypical. Thus, the final sample composition included 105 receiving companies of the production sector.

The following variables were used in the study:

$$ROA = \frac{NET\ PROFIT\ LOSS}{TOTAL\ ASSETS} \quad (1)$$

$$LEV = \frac{LIABILITIES}{TOTAL\ CAPITAL} \quad (2)$$

$$SIZE = LN\ (TOTAL\ ASSETS) \quad (3)$$

$$SALES = LN\ (NET\ SALES) \quad (4)$$

$$TANG = \frac{FIXED\ ASSETS}{TOTAL\ ASSETS} \quad (5)$$

The above list of variables is commonly used in professional literature on the subject. It was employed in capital structure examinations and analyses by Dufur *et al.* (2017), Zhou *et al.* (2016), Hussain *et al.* (2016), Placin-Sanchez *et al.* (2013), Aybar-Aris *et al.* (2012), Harford, Klasa, Walcott (2008), Haas, Peeters (2004). The above parameters are also used for company description purposes in analyses and research of companies listed on regulated capital markets and in analyses of small and medium-sized enterprises. For these reasons, it may be assumed that the above list of variables will be deemed adequate for our purposes, i.e. for the examination of the postulated research hypothesis.

Based on linear regression analysis for primary data, a model was designed to present correlations between the response variable LEV and the explaining variables ROA, SIZE and SALES – see eq. 6. The variable describing the sustainability of asset structure was fund statistically insignificant, and as such was excluded from the model.

$$LEV = -0{,}605223 \cdot ROA - 0{,}0135493 \cdot SIZE + 0{,}0666848 \cdot SALES \quad (6)$$

Verifications of model parameters are presented in Tab. 1.

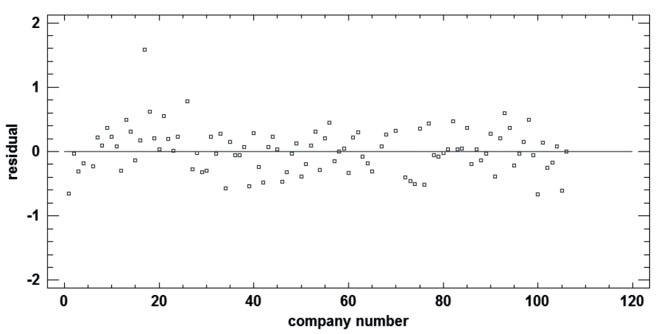
Table 1. Verification of the regression model 1 – all observations

Source	*Sum of Squares*	*Df*	*Mean Square*	*F-Ratio*	*P-Value*
Model	30.5993	3	10.1998	83.87	0.0000
Residual	11.9177	98	0.121609		
Total	42.5169	101			

Source: own research

Based on a chart of regression residuals (Chart 1), outliers were removed from the observation set.

Chart 1. Regression residuals for models 1



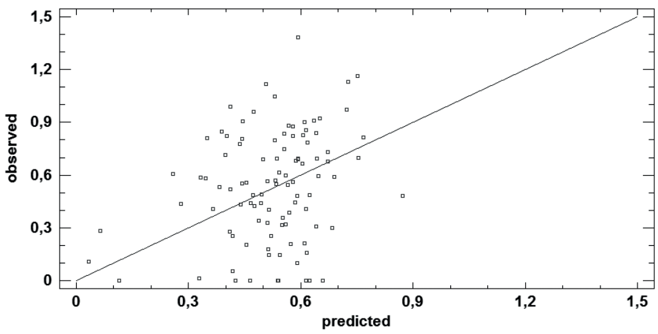
Source: own research

The adjusted database set was then used as basis for another regression analysis procedure, yielding parameters for a regression function presented in eq. 7.

$$LEV = -0{,}927184 \cdot ROA - 0{,}0031828 \cdot SIZE + 0{,}0558356 \cdot SALES \quad (7)$$

The statistically significant parameters of the regression function are identical with those obtained from the 1st model, but their values are changed. Chart 2 presents correlations between their predicted and empirical values.

Chart 2. Correlations between their predicted and empirical values



Source: own research

Based on the final model of regression, the author proceeded with verifications of the model's assumptions. Table 2 presents results of these tests.

Table 2. Test of assumptions for the final regression model

Assumption	Test	Result
$\varepsilon_i \sim N(0; \sigma_\varepsilon^2)$	SW = 0.978, p = 0.469	confirm
$E(\varepsilon_i) = 0$	$T(\varepsilon_i) = -0.435$, p = 0.664	confirm
$cov(\varepsilon_i \varepsilon_j) = 0$	DW = 1.979	confirm
$D(\varepsilon_i) = \sigma_\varepsilon^2$	$L_E = 10/10$	confirm
Remote values	Dean Dixon test	confirm

Source: own research

Test findings suggest that, in the sample group of Polish receiving companies of the production sector, the LEV indicator of leverage was related to three variables: ROA – return on assets, SIZE – company size measured by balance sheet total, and SALES – company size measured by sales revenues. The adjustment of the model, measured by value of the adjusted R^2, was found to be at 76.01%. This means that the three variables under examination were found to explain the fluctuations of the independent response variable LEV at a level of 76%. The value of R^2 is high, meaning that the model may viably be employed for prediction of theoretical values of the leverage indicator one year prior to the planned merger.

The next stage of the research procedure was designed to find whether an optimal level of leverage LEV calculated from the model proves to bring the best results in terms of company profitability. For this purpose, for each of the companies under study, prognostics of leverage structure were estimated (LEV predicted) and compared against the empirical values of the leverage index. Negative differences between predicted LEV values and their empirical values would be interpreted to suggest overleveraging (excessive dependence on foreign capital). Positive differences between predicted LEV values and their empirical values, in turn, would be suggestive of underleveraging (too much independence from foreign capital). Each of the two scenarios should be interpreted as proof of inadequate approach to company financial potential or of ineffective adjustment of the companies' financing perspectives. Eq. 8 presents the calculation formula used to examine differences between theoretical and empirical capital structures.

$$DLEV = LEV\ Predisted - LEV \qquad (8)$$

Based on the findings of predicted and empirical distances between values of capital structure and asset rentability, correlations between the two were established. The ROA variable is a dependent variable, while the distance between theoretical and empirical capita structures is an independent variable. After a preliminary test for the linearity of the regression function, a multinomial (square) regression function was designed, based on a formula presented in eq. 9 below.

$$ROA = -0{,}1275 \cdot DLEV^2 + 0{,}04815 \qquad (9)$$

The regression function takes the form of an inverted parable, with maximum asset rentability placed at a point where the difference between the theoretical and empirical values of the capital structure indicator reach 0, suggestive of an optimal level of capital structure, as described in eq. 7.

CONCLUSIONS

The purpose of this paper was to examine the potential offered by calculations of optimal financing structure for receiving companies one year prior to the planned merger. The research was conducted on a sample of companies – economic entities operating in the production sector. The findings suggest that the companies under study display negative correlation between asset rentability and capital structure. A regression model was construed to establish the statistical significance of parameters and their effects on the capital structure. The model served to establish that the capital structure is dependent on asset rentability (a negative correlation), company size measured by total assets (a negative correlation), and company size measured by sales revenues (a positive correlation). The determination coefficient R^2 was found to be at 0.76, which offered a base for calculations of predicted optimal levels of capital structure. Based on deviations of empirical values of capital structure from those predicted by the model, the author was able to examine the effects of any departures from the predicted values in terms of company result. In the light of the regression analysis presented in eq. 9, it may be observed that the highest yield in asset rentability was associated with those capital structures which closely followed the theoretical (and optimal) levels. Thus, the central research hypothesis has been successfully verified and confirmed.

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CORPORATE GOVERNANCE, CORPORATE FINANCE & CONTROLLING

Papers in this section examine some of the current topics in the field of CORPORATE GOVERNANCE, CORPORATE FINANCE & CONTROLLING. The first paper presents the results of empirical studies on the separation of logistics costs and their impact on business operations in the SME sector companies in Poland. The second paper focuses on the analysis of the role of the Post of Serbia, as the leader in the field of postal, financial and information-communication services in the domestic market. The paper provides an overview of the company's goals to maintain competitiveness and market leadership position. The final paper focuses on controlling of One Belt One Road projects' risks, by applying modern project management tools. This initiative has been launched by the People's Republic of China, and it is currently the biggest publicly undertaken investment portfolio in the world.

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CORPORATE GOVERNANCE, CORPORATE FINANCE AND CONTROLLING
Scientific - original paper

LOGISTICS COSTS IN THE PRACTICE OF POLISH PRODUCTION COMPANIES OF THE SME SECTOR

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Abstract:

Logistics costs and logistics cost accounting represents a distinct segment of modern economic practice, addressed at length in professional literature. Costs associated with logistics represent one of the fundamental measures of effectiveness for companies. They are also a good indicator of their ability to control and modernise their logistic processes. This aspect of company operation ought precisely to be defined. The principal reason is thats any inadequacies may lead to errors in formal interpretations of the levels or structure of logistics costs. Potential consequences of such poor judgement include the loss of competitive advantage, loss of market share or reduction of the scale of company operations. The paper presents results of empirical studies on separation of logistics costs and their impact on business operations of production companies of the SME sector in Poland. The research methodology was supplemented by literature studies, survey analysis, and deduction/induction methods.

Keywords:

costs, logistics cost, SME

THE SCOPE AND DEFINITION OF LOGISTICS COSTS

Before delving into scientific explorations of the logistics costs accounting, it is necessary to provide a precise definition of logistics costs. A standardised definition of the scope and the content of this particular segment of company costs is fairly difficult to establish. Disparities are mostly observable in the existing definitions of the term, interpretations of its content, range or structure, and also in the approaches to valuation of individual elements of logistics costs.

The lack of full transparency and of general agreement in defining the scope and the range of costs associated with logistics operations is particularly evident in the evaluation of cost items that representi the cost of: logistics, logistic management, logistic system, logistic transformation, material flows and the cost of product/information circulation, freight runs, and supply chains. The observed disparities are mainly attributable to the lack of clear distinctions between the above elements, and to the lack of precision, as some of the above terms are often used interchangeably with others [Twaróg 2003, p.25].

One of the earliest attempts at a scientific evaluation of professional literature on the subject of logistics costs in Poland can be found in M. Kufel. The author relates logistics costs to the cost of internal flows of materials. The study has been responsible for the wide popularisation of the thesis that logistics costs become the central costing category in the ‘material-and-information-flow’ approach to management. M. Kufel defines logistics costs as a detailed costing category reflecting the economic (pecuniary) loss of company material substance, and attributed to the planning, realisation and control of non-technological processes involving spatial or temporal movement of all forms of materials [Kufel 1990, p.38].

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A.Weselik insists on the use of the phrase “logistics cost” as the only term to offer consistency with the principles of accounting [Weselik 1993, p.23]. The conclusion was based on analytical evaluations of Polish terms “koszty logistyczne” vs. „koszty logistyki”, as direct translations of the English (*logistic costs* vs. *logistics costs)* and German counterparts *Logistische Kosten* vs. *Logistikkosten*. According to Weselik, the use of the term “logistic costs” would invariably lead to the constitution of a new costing category. Introducing the notion of logistics costs [Weselik 1999, p.10] helps avoid this problem, since cost accounting in this case would only need to be extended to register a new set of company activities.

For J. Kwest, logistics costs should comprise the following:

- planned cost of logistics to cover, among other things, the cost associated with transfer of supplies, the cost of producing, maintaining and replenishing the stock, transport and warehouse costs, credit interest expenditures, cost of information;
- incidental and unscheduled logistics costs, including the cost associated with the maintenance of excess inventory and credits (warehousing, servicing, interest accrued on stock and credits) and the cost associated with ineffective organisation of shipments (non-economic batches);
- loss generated by poor material management – e.g. stoppage due to late receipt, penalties for misplaced or misdirected shipment [Twaróg 2003, pp.26-27].

B. Szałek postulates the following structure of logistics costs:

- direct costs (transportation, warehouses, stock, communications) and indirect costs;
- fixed and unscheduled expenditures;
- cost of supply, production, and distribution;
- material and immaterial costs;
- cost of logistic management and the cost of activities delegated to third parties by logistic services;
- strictly logistic costs [Szałek 1994, p. 46].

Cz. Skowronek postulates that logistics costs should include pecuniary representations of depletion in human labour, means of labour and objects of labour, alongside with financial expenses and other negative effects of extraordinary nature incurred in relation to the flow of material goods, i.e. raw materials, production materials, finished products and other supplies (including internal and external flow), and stock maintenance [Skowronek… 1995, p.229].

M. Nowicka-Skowron in her publication presents further arguments for the complexity of categorisations employed in relation to logistics costs. In her view, proper identification of logistics costs should be directly related to the sources of each such expenditure in each phase of the production process, namely:

- acquisition of materials, semi-products and other third-party supplies;
- external and internal transportation of goods;
- production planning, to determine the intensity of material flows in production phase;
- warehousing of semi-products, finished products, materials, and waste from production;
- transfer of finished products to recipients [Twaróg 2003, p.28].

As suggested by the above statement, the complexity of the logistic processes and their impact upon company operation will naturally generate certain costs. These, in turn, will stimulate operating changes and contribute to the total reduction of the company gross financial result. Hence, logistics costs can also be categorised as follows:

- operating costs – recurring expenditures, closely related to the scale and intensity of company operations;
- strategic costs – one-time expenditures unrelated to the current scale and intensity of company operations (in a short-term perspective).

O.Duck, H.Krause and C.Schulte identify three fundamental types of costs deemed to exert a significant impact upon company financial result, namely:

- material costs – all types of expenditure generated in relation to the flow of supplies and goods, such as raw materials, supplementary materials, fuels, semi-products, and finished products;
- costs of annuity capitalisations – cost of interests accrued on capital tied up in stock, but also cost related to value depreciation of goods held in stock, and the cost of storage;
- general material costs – combined costs across all departments involved in materials and goods management, i.e. logistics and supply services, including cost of transportation and packaging, cost of electronic data processing, cost of waste disposal [Duck… 1997-2001, p.1].

Due to their complex structure, logistics costs can also be organised into:

- cost incurred in relation to shipment of supplies and goods (to warehouses or to final recipients);
- cost related to the maintenance of warehouse facilities and cost generated by other departments involved in material management;
- cost related to the transfer of data on materials and final products, transportation, and product operation (control);

- cost related to the disposition of final products, transportation and product exploitation capabilities;
- cost of capital tied up in fixed assets and in working capital [Twaróg 2003, p.53].

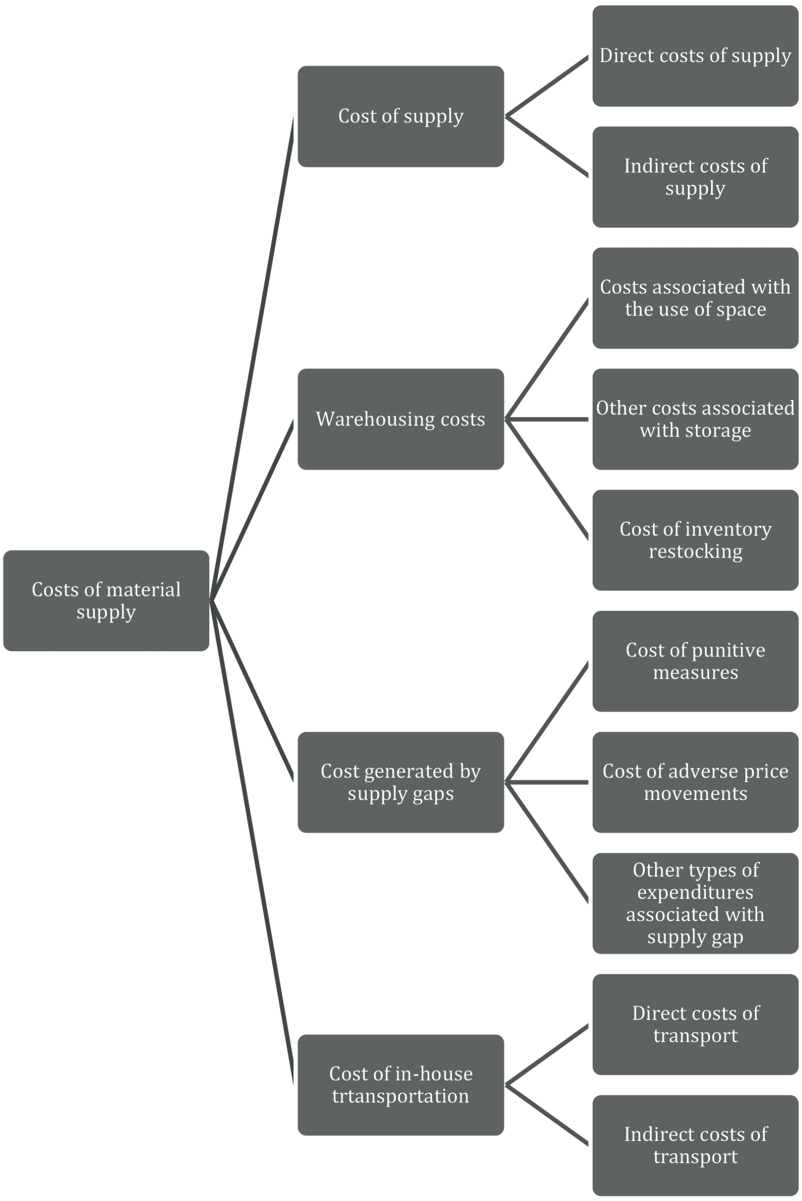
Since the practical application of logistics costs dictates the use of precise target objectives, great significance should be attached to structural organisation of this type of expenditure by logistic phases of their origin, by logistic processes, and by their share in total consumption of production factors.

P.Blaik employed standard principles of cost accounting, knowledge of logistic systems in production companies, type of operation, and bookkeeping standards and mechanisms in his classification of logistics costs into:

- generic costs;
- cost of flows, phases and origins;
- cost of relations with basic types of logistic processes;
- cost of changes in the volume of material flows or supplies [Blaik 2001, pp.300-304].

The category of generic costs reflects recording of costs by type. Records by phase separate logistics cost into three sub-sections, representing cost generated in relation to supplies, production, or distribution. The latter is also adjusted against the overview of expenditures by their origin. Fig. 1 presents a model structure of material management expenditures as part of a logistic system in a production company.

Figure 1. Structure of costs associated with material supply



Source: [Kupsch, Linder 1985, p.327]

S. Abt postulates the following division and structure of logistics costs into:

- cost by goods flow phase and by cost origin
  - supply phase
    - » supply department costs;
    - » warehousing department costs;
    - » transportation costs;
  - production phase
    - » production planning costs;
    - » material flow management costs;
    - » in-house transportation costs;
  - distribution phase
    - » sales department costs;
    - » warehousing department costs;
    - » cost of transport and forwarding;
- cost by group (segment) of logistic operations
  - cost of physical transfer of goods
    - » in-house transportation and maintenance;
    - » transportation services;
    - » forwarding;
    - » damage in transport
  - cost of stock
    - » tied-up capital;
    - » warehouse maintenance;
    - » restocking;
    - » inventory obsolescence (both physical and moral);
    - » lost profit caused by inventory depletion;
    - » packaging and labelling;
    - » quality control
  - cost of information processes
    - » value depreciation (hardware and software);
    - » energy and material consumption;
    - » third-party services;
    - » logistic marketing;
    - » administration of orders [Abt 1998, p. 301]

In a model approach, classification of logistics costs includes the following three groups:

- cost of physical transfer of materials;
- cost of inventory (stock);
- cost of information processes [Twaróg 2003, p.60].

P. Blaik presents a general approach to the **structure of total logistics costs** using the following mathematical formula [Blaik 2001, p. 304]:

$K_L = K_{ZP} + K_{SP} + K_M + K_T + K_{KZ} + K_{PP} + K_{PI} + K_O + K_{NS}$, where:

where:

K_L – logistics costs;

K_{ZP} – costs associated with formulation, planning, control and management of product and material flows (flow management costs);

K_{SP} – logistic costs associated with planning and management of programmes and structure of production and realisation of orders;

K_M – cost of warehousing;

K_T – cost of transportation;

K_{KZ} – cost of inventory (stock) management,

K_{PP} – cost involved in preparation of products for sale and shipment (packaging, handling, etc.),

K_{PI} – cost generated by information flows (communications) and processing of orders,

K_O – cost of product servicing and logistic services,

K_{NS} – cost of failures – excessive investment, supplementary cost transferred to third-party partners (suppliers, recipients) and lost profit.

The alternative concept of global logistics costs is based on the assumption that all the company operations conducted with regard to physical movement of raw materials, production components and finished products should be perceived as a whole, rather than a set of individual units. This approach results in global determination of all items on the list of costs for all logistic decisions made. One of the most important goals behind this concept is to identify costing variants burdened with the lowest possible global cost without detriment to the expected quality of customer service [Beier, Rutkowski 1993, p. 30]. This approach is closely related to the concept of cost interdependence, which holds that changes in logistic operations may generate increases in some cost items in parallel with decreases in other items on the list of costs. The ultimate goal here is to ensure an effective decrease in global cost with no detriment to the expected quality of customer service.

Global logistics costs (GLK) attached to the servicing of markets can be represented by the following formula [Beier, Rutkowski 1993, p. 64]:

Global logistics costs = Cost of transport + Cost of supply in transit + Cost of warehousing and servicing of orders + Cost of inventory (stock) held by the company

Information related to logistics costs can be separated into two distinct groups. The first group represents costs generated by dynamic properties of material flows (transit processes may affect not only the location of materials, but also their form and characteristics), whereas the other describes costs related to static properties of material flows (i.e. for materials outside of transit, such as those kept as part of company inventory). The most important determinants in both of the above groups include the following:

- human work expenditure;
- energy consumption;
- the use of machinery and infrastructure in transportation, warehousing, etc.;
- capital tied up in stock;
- the use of premises or parts thereof;
- consumption of supplementary materials;
- the associated wastage and material loss in flow;
- various forms of payments and dues [Twaróg 2003, p.94].

In addition to the above, professional literature makes ample reference to the concept of logistics external costs, generated predominantly by two sources:

- operation of the existing infrastructure (systems of: logistics, transportation, warehousing, communications, information);
- introduction of new elements to the logistic infrastructure – these may generate negative effects, such as increase in the use of available space) [Kisperska-Moroń…2002, p.20].

External costs of logistic processes fall under technical costs or monetary costs. The **external technical costs of logistics** are those imposed by a single producer to the detriment of other actors. They are generated as a side effect of the core operating activities, for example – in the form of air pollution. **Monetary costs**, on the other hand, represent effects observed by other producers following an increase in productive output by a single competitor. Such a scenario contributes to the general increase in prices of production materials and components for the entire segment of production. In logistic operations, such a scenario may lead to increased demand for logistic services [Kisperska-Moroń…2002, p.21].

RESEARCH FINDINGS

The main body of research reported in this paper was conducted between March and August 2018 in the form of electronic surveys distributed among companies of strictly productive profile of operation, and representatives of the Polish SME segment. A total of 578 surveys were sent, with 239 valid responses. The following queries were included in the survey:

1. Does your company examine logistics costs in separation from other costs?
2. If not, are there plans to introduce such a separation of logistics costs within the next year?
3. Does your company utilise the concept of total logistics costs?
4. If so, does the separation of costs include the following subcategories:
   a. costs of flows management;
   b. logistic costs of planning and management of programmes and structure of production, and the realisation of orders;
   c. cost of warehousing;
   d. cost of transportation;
   e. cost of inventory management,
   f. cost involved in the preparation of products for sale and shipment (packaging, handling, etc.),
   g. cost generated by information flows (communications) and processing of orders,
   h. cost of product servicing and logistic services,
   i. cost of failures – excessive investment, supplementary cost transferred to third-party partners (suppliers, recipients) and lost profit.
5. Does your company utilise the concept of global logistics costs?
6. Does your company separate external costs of logistics?
7. Does the separation and calculation of logistics costs (if applicable) provide tangible benefits in terms of in-house cost management effectiveness?
8. Does the separation and calculation of logistics costs (if applicable) provide tangible improvements in terms of customer service?
9. Does the separation and calculation of logistics costs (if applicable) provide tangible improvements of production processes and their effectiveness?

Of all the valid responses received, 43% companies reported effective separation of logistics costs from other types of cost (Fig. 2), with only 10% of the remaining companies intending to introduce such separation within the next year (Fig. 3). Of those companies that utilise effective separation of logistics costs, only 34% reported the use of total logistics costs (Fig. 4), and as many as 76% of the latter employed an effective separation of all analytical cost. In addition, companies which reported the use of such detailed classification of costs, i.e. total logistics costs with separation into analytical categories, included the following categories: flow management costs (50%); logistic costs associated with planning and management of programmes and structure of production, and realisation of orders (100%); warehousing costs (100%); transportation costs (100%); cost of inventory management (100%); cost involved in preparation of products for sale and shipment (packaging, handling, etc.) (100%); cost generated by information flows (communications) and processing of orders (20%); cost of product servicing and logistic services (28%); and cost of failures – excessive investment, supplementary cost transferred to third-party partners (suppliers, recipients) and lost profit (5%).

Global logistics costs are assessed separately by only 41% of the respondent companies (Fig. 5), while the external costs of logistics are only separated by 34% of the studied sample (Fig. 6). The final queries of the survey were designed to evaluate the perceived improvements resulting from the separation of logistics costs in the following areas: cost management, customer service, and production effectiveness: these were confirmed, respectively, by 60%, 72%, and 80% of the respondent companies.

CONCLUSIONS

The ostensive character of recent changes and trends observed in production companies and their immediate environment, particularly those of the SME segment, and stimulated, among other things, by intense competition, globalisation, and free market progression, has raised the general interest in detailed analyses of cost structures and customer behaviours. Based on the survey's findings, it may be safely concluded that most companies, following the introduction of mechanisms for detailed classifications of their logistics costs, observed tangible improvements in each of the studied aspects, namely: company financial result, quality of customer service, and market position. Thus, the implementation and separation of logistics costs may serve to establish a more detailed image of operations, to facilitate rapid responses to changes in supplies and shipments, and – most of all – to help identify logistic bottlenecks which hamper the flow of goods and materials.

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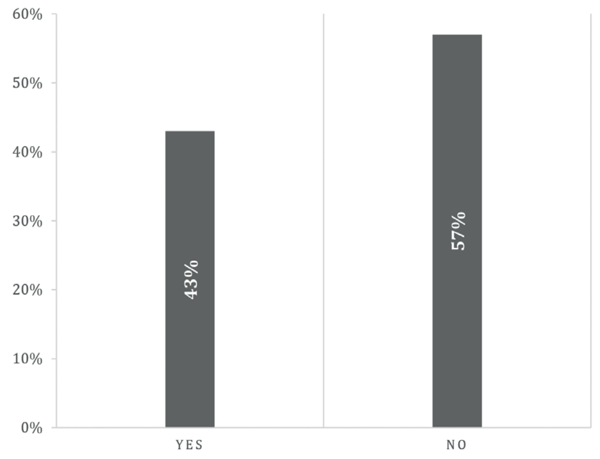
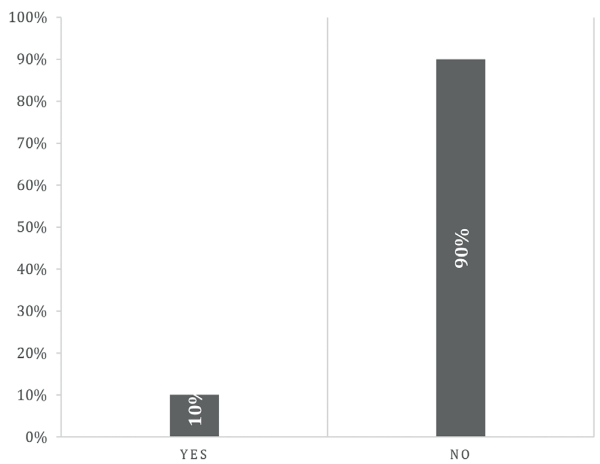
APPENDIX

Figure 2. Logistics costs in separation from other costs



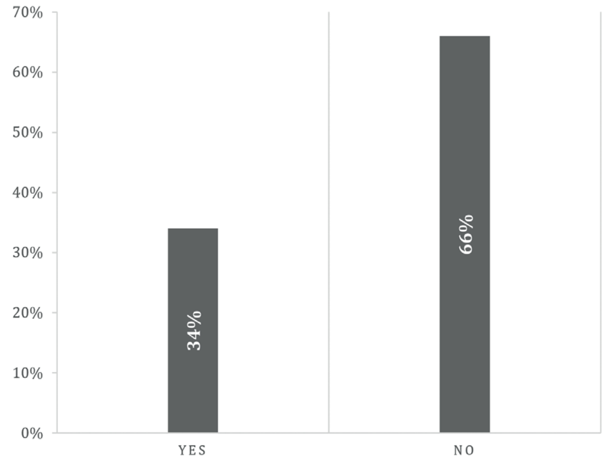
Source: Author’s research based on survey results

Figure 3. Plans to introduce such a separation of logistics costs within the next year



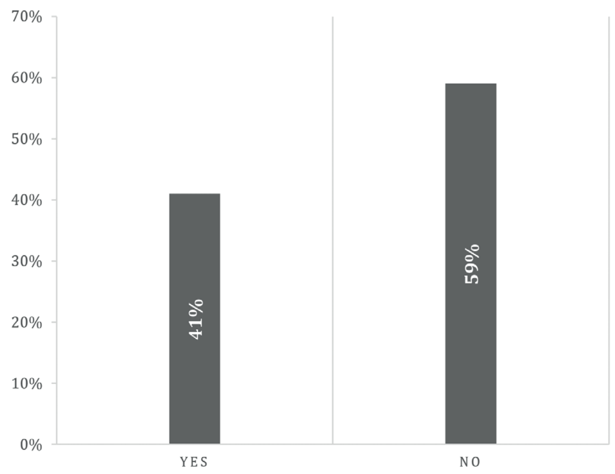
Source: Author’s research based on survey results

Figure 4. Utilising the concept of total logistics costs



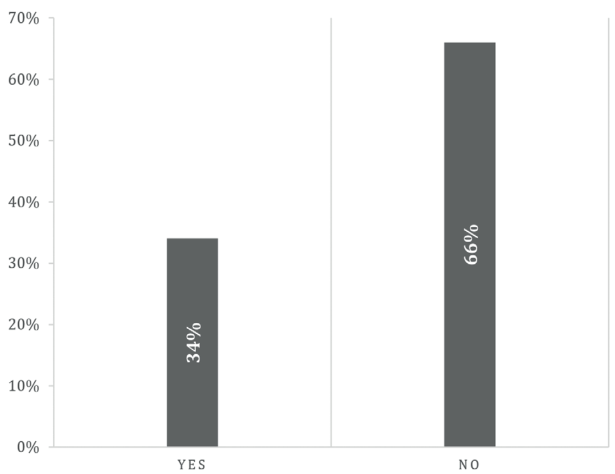
Source: Author’s research based on survey results

Figure 5. Utilising the concept of global logistics costs



Source: Author’s research based on survey results

Figure 6. Does your company separate external costs of logistics



Source: Author’s research based on survey results

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CORPORATE GOVERNANCE, CORPORATE FINANCE AND CONTROLLING
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NON-FINANCIAL REPORTING IN THE POSTAL SERVICES INDUSTRY

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Abstract:

The aim of this paper is to analyze the role of the Post of Serbia as the leader in the field of postal, financial and information-communication services in the domestic market. The paper will provide an overview of company's goals to maintain competitiveness and market leadership position. The Post of Serbia needs to develop and liberalize in accordance with the EU policy of gradual and controlled liberalization. The harmonization of national legislative rules with the EU regulatory framework led to a sustained leadership position in the Serbian market, despite increasing legal and illegal competition. This tendency can be observed in their management reports, particularly in the reports related to the volume of services provided in the previous years. The paper includes data analysis of ten-year business, collected from reports of the Post of Serbia.

Keywords:

ostal services, reporting, harmonization of laws

INTRODUCTION

In the field of postal, financial and information-communication services, the Post of Serbia is the leader in the domestic market, where it develops and provides services that are of high quality and widely available. The vision of the company clearly emphasizes the tendency to maintain competitiveness and market leadership, which in recent times has been characterized by an increasing presence of competition and a growing change in the needs and wishes of service users. In addition to having to adapt to market demands, the Post of Serbia has to be developed and liberalized in accordance with the EU policy on gradual and controlled liberalization (Jovičić, 2015; EU passes liberalization of postal services, 2014). The harmonization of national legislative rules with the EU regulatory framework has led to the fact that the market is largely demonopolized in Serbia, with the exception of the segment of consignments of up to 100 grams and an even smaller segment where the Post of Serbia has exclusive right. According to the public company, there are currently 47 private registered operators in Serbia, and complete liberalization, i.e. the abolition of the exclusive right of the Post of Serbia is related to the end of pre-accession negotiations of Serbia with the European Union (Grgurović, Štrbac & Popović, 2010).

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BASIC CHARACTERISTICS OF POSTAL SERVICES

The term "postal service" means the services of receiving the items at the counter or at the address of the user, their transportation, processing and delivery at the request of individuals or legal persons (Law on Postal Services, 2014). Postal services include letterhead, referral, package and special services, value added services, services on request and ex officio (Law on Postal Services, 2014). Post office performs postal services on the territory of the Republic of Serbia, which is internal postal traffic, as well as services in international postal services, where reception, transfer, processing and delivery of consignments that are heard for countries abroad or arrive from abroad are addressed in the Republic of Serbia (Customs law, 2017).

The public postal operator is obliged to provide universal postal service in the entire territory of the Republic of Serbia, which means that there is a set of basic postal services that must be continuously carried out within the prescribed quality, at affordable prices and equal conditions for all users on the territory of the Republic of Serbia. Therefore, there is no discrimination in the provision of certain postal services and all must be done in the same way, whether it is to serve users in the city or in the furthest place, in accordance with the Law and other regulations that regulate the performance of postal services.

Reserved postal services are services that the state guarantees to a postal service provider providing universal postal service as exclusive rights within a certain limit by weight and price, because often the provision of universal service is unprofitable outside large cities and this is one of the reasons why it is not done by anyone except Post (Rulebook on general conditions for the provision of postal services, 2015). The limit by weight and the price for reserved postal services is determined by the Republic Agency for Postal Services with the consent of the Government of the Republic of Serbia and it can not exceed 100 gr and a triple amount of postage per letter of the first rate of weight and the fastest transfer rate (Rulebook on general conditions for the provision of postal services, 2015).

Unreserved postal services include postal services from the universal service domain that exceed the established limits by mass and prices for reserved services and all other postal services, including commercial services (express services, courier services and services with specific user requirements regarding the quality of postal services and mode of transmission).

The public postal operator is obliged to provide all residents of the Republic of Serbia with reserved and unreserved postal services from the domain of universal postal services, with the possibility of providing other postal services (Strategy of development of postal services in Serbia for the period 2013-2016). There are 17 registered postal operators on the website of the Republic Agency for Electronic Communications and Postal Services (RATEL), while the search on the Internet reaches a figure of over 50 private operators that provide certain types of postal services. Other postal operators cannot provide reserved postal services, but may provide non-reserved postal services that are universal or outside of that domain.

METHODOLOGY

The paper encompasses the ten-year operation of the Post of Serbia in the field of provision of reserved, unreserved/universal postal services and services of commercial services for the period from 2007 to 2016 with the aim to analyze the movement of demand for these services by years and forecast trends in the current year and 2018. The data that provide information on the subject of the research are the official data of the public company Post of Serbia.

RESULTS AND DISCUSSION

The following table shows the total physical volume of provisioned, unreserved/universal postal services and commercial services provided for the period from 2007 to 2016.

Selected statistical prediction methods

The selected method of statistical prediction in this paper is a dynamic analysis method based on time series, linear trend method.

Application of the linear trend method

The evolution of the time series can be monitored using the linear trend method. The following tables give parameters for calculating the linear equation of the trend and the forecast of production in 2017 and 2018 for postal, IT and other services and financial operations. On that basis a graphic representation of their movement was made.

Linear trend method applied to postal services

The physical volume of completed postal services by years, shown in millions of statistical units (in this case in millions of services) is given in the following table.

Table 1. Execution of the physical volume of services for a period of 10 years

Type of service	Execution of physical volume of services									
	2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
POST. SERVICES	276.498.722	302.368.711	284.725.840	296.948.610	308.775.427	320.078.708	303.151.000	293.076.000	291.904.000	287.329.000
Letterhead	271.630.497	297.009.409	279.282.868	290.869.196	301.362.164	311.325.075	293.532.000	283.010.000	280.698.000	274.435.000
Packet	924.120	784.813	667.121	559.191	554.486	550.224	406.000	380.000	379.000	634.000
Referral services	1.888.815	1.906.378	2.041.182	2.264.168	2.819.220	3.382.941	3.823.000	4.163.000	4.568.000	4.894.000
Express shipments	2.055.290	2.668.111	2.734.669	3.256.055	4.039.557	4.820.468	5.390.000	5.523.000	6.259.000	7.366.000
MONETARY SERVICES	128.785.062	134.967.544	138.735.503	143.754.075	143.340.696	140.097.589	139.149.000	139.024.000	143.765.000	144.995.000
Payments	85.524.729	94.361.317	99.259.954	100.760.186	103.509.431	101.887.457	102.973.000	104.515.000	109.478.000	111.779.000
Payouts	43.260.333	40.606.227	39.475.543	42.993.889	39.831.265	38.210.402	36.176.000	34.509.000	34.287.000	33.216.000
INFORMATION SERVICES	498.118	422.928	332.595	202.719	132.418	89.211	130.500	1.364.200	1.328.800	7.455.700
OTHER SERVICES	45.818.490	41.217.495	31.044.575	29.475.333	28.501.958	32.747.089	31.184.000	32.051.000	26.847.000	27.267.000
TOTAL	**451.600.392**	**478.976.678**	**454.838.513**	**470.380.737**	**480.750.499**	**493.012.597**	**473.614.500**	**465.515.200**	**463.844.800**	**467.046.700**

Source: http://www.posta.rs/

Table 2. Linear trend method applied to postal services

Postal services					
Year	y_t original data (in millions of statistical units)	x_i	$y_i\ x_i$	x_i^2	$\hat{y}_l$
2007	276.5	-3.5	-967.75	12.25	294.2074167
2008	302.37	-2.5	-755.925	6.25	294.8587262
2009	284.73	-1.5	-427.095	2.25	295.5100357
2010	296.95	-0.5	-148.475	0.25	296.1613452
2011	308.78	0	0	0	296.487
2012	320.08	0	0	0	296.487
2013	303.15	0.5	151.575	0.25	296.8126548
2014	293.08	1.5	439.62	2.25	297.4639643
2015	291.90	2.5	729.75	6.25	298.1152738
2016	287.33	3.5	1005.655	12.25	298.7665833
Total	2964.87	0	27.355	42	2964.87

Source: Authors' calculation

According to the given table, we can define the following parameters:

$$a = \frac{\sum y_i}{n} = \frac{2964,87}{10} = 296,487 \quad (1)$$

$$b = \frac{\sum y_i\, x_i}{\sum x_i^2} = \frac{27,355}{42} = 0,651 \quad (2)$$

The equation of the linear trend is:

$$\hat{y}_l = a + b \cdot x_i \quad (3)$$

$$\hat{y}_l = 296,487 + 0,651 \cdot x_i \quad (4)$$

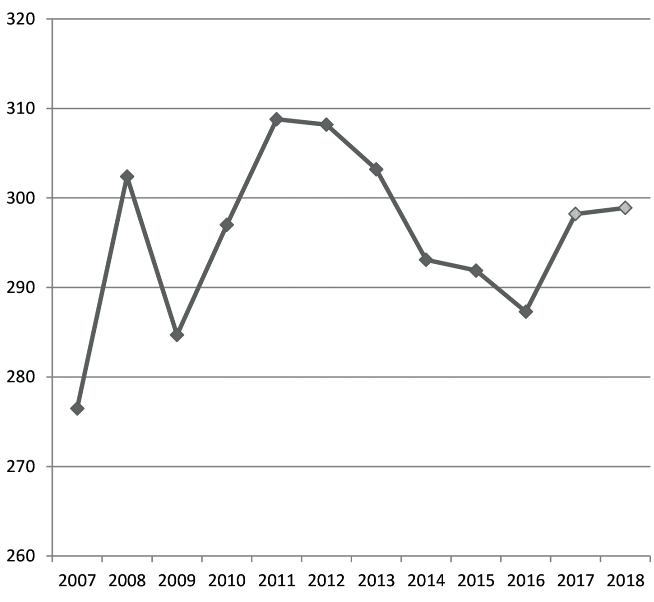
The forecast for 2017 and 2018 is:

$$\hat{y}_{2017} = 296,487 + 0,651 \cdot 4,5 = 296,487 + 2,9295 = 299,4165 \quad (5)$$

$$\hat{y}_{2018} = 296,487 + 0,651 \cdot 5,5 = 296,487 + 3,5805 = 300,0675 \quad (6)$$

Using the linear trend method, there is a forecast that more postal services will be carried out in 2017 than in 2016, in the volume of more than 12.087.500 services on average, while in 2018 a milder increase in demand for services is expected for 651.000 services compared to 2017.

Figure 1. Demand for postal services



More detailed analysis of individual segments of postal services

Postal services can be divided into letterhead, packet, referral and post express services. Each category shows different oscillations in demand for services, so their deeper analysis leads to more detailed information in which area of postal services can an increase or decline in demand be expected in the future.

Letterhead, packet and Post Express services include the receipt, transfer and delivery of mail to users, while referral services involve the receipt, transfer and delivery of money in the territory of the Republic of Serbia or abroad.

Table 3. Linear trend method applied to letterhead services

Letterhead services					
Year	y_t original data (in millions of statistical units)	x_i	$y_i\ x_i$	x_i^2	$\hat{y}_l$
2007	271.63	-3.5	-950.705	12.25	290.31775
2008	297.01	-2.5	-742.525	6.25	289.74525
2009	279.28	-1.5	-418.92	2.25	28917275
2010	290.86	-0.5	-145.43	0.25	288.60025
2011	301.36	0	0	0	288.314
2012	311.33	0	0	0	288.314
2013	293.53	0.5	146.765	0.25	288.02775
2014	283.01	1.5	424.515	2.25	287.45525
2015	280.7	2.5	701.75	6.25	286.88275
2016	274.43	3.5	960.505	12.25	286.31025
Total	2883.14	0	-24.045	42	2883.14

Source: Authors' calculation

According to the given table, we can define the following parameters:

$$a = \frac{\sum y_i}{n} = \frac{2883,14}{10} = 288,314 \tag{7}$$

$$b = \frac{\sum y_i\, x_i}{\sum x_i^2} = \frac{-24,045}{42} = -0,5725 \tag{8}$$

The equation of the linear trend is:

$$\hat{y}_l = a + b \cdot x_i \tag{9}$$

$$\hat{y}_l = 288,314 - 0,5725 \cdot x_i \tag{10}$$

The forecast for 2017 and 2018 is:

$$\hat{y}_{2017} = 288,314 - 0,5725 \cdot 4,5 = 288,314 - 2,576 = 285,738 \tag{11}$$

$$\hat{y}_{2018} = 288,314 - 0,5725 \cdot 5,5 = 288,314 - 3,149 = 285,165 \tag{12}$$

According to the applied linear trend equation, we can conclude that in 2017, an average of 285.738.000 searched services is expected, while in 2018, 285.165.000 is expected.

Packet services are services of receiving, transferring and the delivery of registered mailings from 2 to 31,5kg, which can be with or without marked value and can contain goods and other items that are allowed by law and regulations for transmission in internal or international postal traffic.

Table 4. Linear trend method applied to packet services

Packet services					
Year	y_t original data (in millions of statistical units)	x_i	$y_i\ x_i$	x_i^2	$\hat{y}_l$
2007	0.924	-3.5	-3.234	12.25	0.795075
2008	0.785	-2.5	-1.9625	6.25	0.7342536
2009	0.667	-1.5	-1.0005	2.25	0.6734321
2010	0.559	-0.5	-0.2795	0.25	0.6126107
2011	0.554	0	0	0	0.5822
2012	0.541	0	0	0	0.5822
2013	0.406	0.5	0.203	0.25	0.5517893
2014	0.38	1.5	0.57	2.25	0.4909679
2015	0.372	2.5	0.93	6.25	0.4301464
2016	0.634	3.5	2.219	12.25	0.369325
Total	5.822	0	-2.5545	42	5.822

Source: Authors' calculation

According to the given table, we can define the following parameters:

$$a = \frac{\sum y_i}{n} = \frac{5,822}{10} = 0,5822 \tag{13}$$

$$b = \frac{\sum y_i\, x_i}{\sum x_i^2} = \frac{-2,5545}{42} = -0,060821 \tag{14}$$

The equation of the linear trend is:

$$\hat{y}_l = a + b \cdot x_i \tag{15}$$

$$\hat{y}_l = 0,5822 - 0,060821 \cdot x_i \tag{16}$$

The forecast for 2017 and 2018 is:

$$\hat{y}_{2017} = 0,5822 - 0,060821 \cdot 4,5 = 0,5822 - 0,274 = 0,3082 \tag{17}$$

$$\hat{y}_{2018} = 0,5822 - 0,060821 \cdot 5,5 = 0,5822 - 0,335 = 0,2472 \tag{18}$$

Packet services had a steady decline in demand by 2016, when demand jumped by 59%. However, the linear trend equation predicts a decline in demand in 2017 to 308.200 services on average, while 2018 predicts an additional decline in demand for 61.000 services.

In the territory of the Republic of Serbia, the referral services include the receipt, transfer and delivery of money through the Postal or PostNet referral. Money can be delivered at the address of the user or at the Post office. Intra-passenger transport services include the same services on the territory of a foreign country, via the Western Union system or via the International Postal Order which can be sent to certain countries[1].

1 The countries to which money can be sent through the International Referral List are: France, Russia, Ukraine, Belarus, Montenegro, Croatia, Bosnia and Herzegovina (The Republic of Srpska and the Federation of Bosnia and Herzegovina) and Qatar

Table 5. Linear trend method applied to referral services

Referral services					
Year	y_t original data (in millions of statistical units)	x_i	$y_i\ x_i$	x_i^2	$\hat{y}_l$
2007	1.89	-3.5	-6.615	12.25	1.4148333
2008	1.91	-2.5	-4.775	6.25	1.9174524
2009	2.04	-1.5	-3.06	2.25	2.4200714
2010	2.26	-0.5	-1.13	0.25	2.9226905
2011	2.82	0	0	0	3.174
2012	3.38	0	0	0	3.174
2013	3.82	0.5	1.91	0.25	3.4253095
2014	4.16	1.5	6.24	2.25	3.9279286
2015	4.57	2.5	11.425	6.25	4.4305476
2016	4.89	3.5	17.115	12.25	4.9331667
Total	31.74	0	21.11	42	31.74

Source: Authors' calculation

According to the given table, we can define the following parameters:

$$a = \frac{\sum y_i}{n} = \frac{31,74}{10} = 3,174 \tag{19}$$

$$b = \frac{\sum y_i\, x_i}{\sum x_i^2} = \frac{21,11}{42} = 0,5026 \tag{20}$$

The equation of the linear trend is:

$$\hat{y}_l = a + b \cdot x_i \tag{21}$$

$$\hat{y}_l = 3,174 + 0,5026 \cdot x_i \tag{22}$$

The forecast for 2017 and 2018 is:

$$\hat{y}_{2017} = 3,174 + 0,5026 \cdot 4,5 = 3,174 + 2,26 = 5,434 \tag{23}$$

$$\hat{y}_{2018} = 3,174 + 0,5026 \cdot 5,5 = 3,174 + 2,76 = 5,934 \tag{24}$$

Customer referral services show a constant increase in demand in the ten-year report, so it is expected in the upcoming period. For 2017, an increase in the volume on average is expected for 540.000 services more on this basis, while 2018 foresees 500.000 services provided more than in 2017.

Post Express Shipment is the fastest transfer service for shipments. For 108 cities in Serbia, there is a possibility that in the territory of the same city, the shipment is delivered to the recipient within a few hours. The second option available in 47 cities in Serbia is to deliver the shipment in the same day to the recipient in another city from 16 to 20h. The third possibility is that the shipment is handed over to one of over 800 available post offices and it will be delivered to any city next day by 12 or 19h, by the choice of the sender.

Table 6. Linear trend method applied to express shipments

Express shipments					
Year	y_t original data (in millions of statistical units)	x_i	$y_i\ x_i$	x_i^2	$\hat{y}_l$
2007	2.06	-3.5	-7.21	12.25	1.6778333
2008	2.67	-2.5	-6.675	6.25	2.4590238
2009	2.73	-1.5	-4.095	2.25	3.2402143
2010	3.26	-0.5	-1.63	0.25	4.0214048
2011	4.04	0	0	0	4.412
2012	4.82	0	0	0	4.412
2013	5.39	0.5	2.695	0.25	4.8025952
2014	5.52	1.5	8.28	2.25	5.5827857
2015	6.26	2.5	15.65	6.25	6.3649762
2016	7.37	3.5	25.795	12.25	7.1461667
Total	44.12	0	32.81	42	44.12

Source: Authors' calculation

According to the given table, we can define the following parameters:

$$a = \frac{\sum y_i}{n} = \frac{44,12}{10} = 4,412 \tag{25}$$

$$b = \frac{\sum y_i\, x_i}{\sum x_i^2} = \frac{32,81}{42} = 0,7811905 \tag{26}$$

The equation of the linear trend is:

$$\hat{y}_l = a + b \cdot x_i \tag{27}$$

$$\hat{y}_l = 4,412 + 0,78131 \cdot x_i \tag{28}$$

The forecast for 2017 and 2018 is:

$$\hat{y}_{2017} = 4,412 + 0,7811905 \cdot 4,5 = 4,412 + 3,51536 = 7,92736 \tag{29}$$

$$\hat{y}_{2018} = 4,412 + 0,7811905 \cdot 5,5 = 4,412 + 4,29655 = 8,70855 \tag{30}$$

The demand for Post Express shipments shows constant growth, so it is expected that in 2017 it will bring a higher demand in the volume of 7.927.360 services requested on average, while in 2018 an even larger increase in the amount of 8.708.550 services is expected.

Linear trend method applied to monetary services

Monetary services include payment services, which includes paying in and paying out of money from the accounts of individuals and legal persons on any basis (Law on Payment Transactions, 2014). The following table provides the original payment information data expressed in millions of services provided by years.

Table 7. Linear trend method applied to monetary services

Monetary services					
Year	y_t original data (in millions of statistical units)	x_i	$y_i\ x_i$	x_i^2	$\hat{y}_l$
2007	128.79	-3.5	-450.765	12.25	133.1158333
2008	134.97	-2.5	-337.425	6.25	134.9455952
2009	138.74	-1.5	-208.11	2.25	136.7753571
2010	143.75	-0.5	-71.875	0.25	138.605119
2011	143.34	0	0	0	139.52
2012	140.10	0	0	0	139.52
2013	139.15	0.5	69.575	0.25	140.434881
2014	139.02	1.5	208.53	2.25	142.2646429
2015	143.77	2.5	359.425	6.25	144.0944048
2016	145.00	3.5	507.5	12.25	145.9241667
Total	1396.36	0	76.855	42	1396.36

Source: Authors' calculation

According to the given table, we can define the following parameters:

$$a = \frac{\sum y_i}{n} = \frac{1396,63}{10} = 139,663 \tag{31}$$

$$b = \frac{\sum y_i\, x_i}{\sum x_i^2} = \frac{76,855}{42} = 1,829881 \tag{32}$$

The equation of the linear trend is:

$$\hat{y}_l = a + b \cdot x_i \tag{33}$$

$$\hat{y}_l = 139,663 + 1,829881 \cdot x_i \tag{34}$$

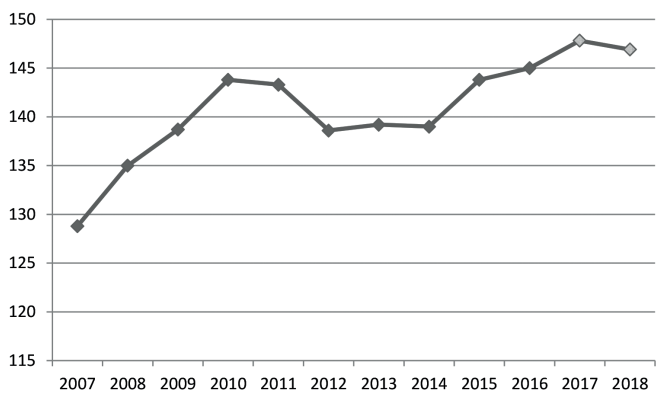
The forecast for 2017 and 2018 is:

$$\hat{y}_{2017} = 139,663 + 1,829881 \cdot 4,5 = 139,663 + 8,234 = 147,897 \tag{35}$$

$$\hat{y}_{2018} = 139,663 + 1,829881 \cdot 5,5 = 139,663 + 10,064 = 149,727 \tag{36}$$

In 2017 and 2018, an increase in demand for money services can be expected, by approximately 2.789.000 services more in 2017 than in 2016, as well as the expected increase in 2018, which is estimated at 1.830.000 more in comparison to the previous year.

Figure 2. Demand for monetary services



Linear trend method applied to information services

The information services of Post are: CEPP - Center for Electronic Business Post, e-Government and Post Certification Authority, GIS services (geographic information system), Post NET, distributed printing and packaging of documents and highly sophisticated IT projects, which include: multiservice corporate information and communication network PostNET, Integrated Enterprise Resource Management Information System (ERP) - PostSAP and Post Technological Information System - PostTIS.

Table 8. Linear trend method applied to information services

Information services					
Year	y_t original data (in millions of statistical units)	x_i	$y_i\ x_i$	x_i^2	$\hat{y}_l$
2007	498.12	-3.5	-1743.42	12.25	-1148.237917
2008	422.93	-2.5	-1057.325	6.25	-478.5356548
2009	332.60	-1.5	-498.9	2.25	191.1666071
2010	202.72	-0.5	-101.36	0.25	860.868869
2011	132.42	0	0	0	1195.72
2012	89.21	0	0	0	1195.72
2013	130.50	0.5	65.25	0.25	1530.571131
2014	1364.20	1.5	2046.3	2.25	2200.273393
2015	1328.80	2.5	3322	6.25	2869.975655
2016	7455.70	3.5	26094.95	12.25	3539.677917
Total	11957.2	0	28127.495	42	11957.2

Source: Authors' calculation

According to the given table, we can define the following parameters:

$$a = \frac{\sum y_i}{n} = \frac{11957,2}{10} = 1195,72 \tag{37}$$

$$b = \frac{\sum y_i\, x_i}{\sum x_i^2} = \frac{28127,495}{42} = 669,70226 \tag{38}$$

The equation of the linear trend is:

$$\hat{y}_l = a + b \cdot x_i \tag{39}$$

$$\hat{y}_l = 1195,72 + 6261,48 \cdot x_i \tag{40}$$

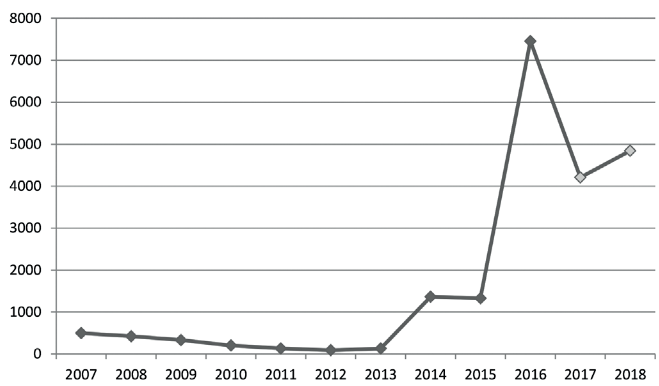
The forecast for 2017 and 2018 is:

$$\hat{y}_{2017} = 1195,72 + 669,70226 \cdot 4,5 = 1195,72 + 3013,66 = 4209,38 \tag{41}$$

$$\hat{y}_{2018} = 1195,72 + 669,70226 \cdot 5,5 = 1195,72 + 3683,36 = 4843,08 \tag{42}$$

In 2016, Post had a very large increase in the scope of IT services, from approximately 1.328.800 to as many as 74.557.000 services. The forecasts for 2017 are 4.209.380 of the requested services, while the revenue which on average amounts to 4.843.080 services is expected in 2018.

Figure 3. Demand for information services



Linear trend method applied to other services

Other post services include: sale of free shares, telegraph services, sales, mediation booths, logistic services, packing services, etc.

Table 9. Linear trend method applied to other services

Other services					
Year	y_t original data (in millions of statistical units)	x_i	$y_i\ x_i$	x_i^2	$\hat{y}_l$
2007	45.82	-3.5	-160.37	12.25	40.82308333
2008	41.22	-2.5	-103.05	6.25	38.47820238
2009	31.04	-1.5	-46.56	2.25	36.13332143
2010	29.48	-0.5	-14.74	0.25	33.78844048
2011	28.50	0	0	0	32.616
2012	32.75	0	0	0	32.616
2013	31.18	0.5	15.59	0.25	31.44355952
2014	32.05	1.5	48.075	2.25	29.09867857
2015	26.85	2.5	67.125	6.25	26.75379762
2016	27.27	3.5	95.445	12.25	24.40891667
Total	326.16	0	-98.485	42	326.16

Source: Authors' calculation

According to the given table, we can define the following parameters:

$$a = \frac{\sum y_i}{n} = \frac{326{,}16}{10} = 32{,}616 \quad (43)$$

$$b = \frac{\sum y_i\, x_i}{\sum x_i^2} = \frac{-98{,}485}{42} = -2{,}3449 \quad (44)$$

The equation of the linear trend is:

$$\hat{y}_l = a + b \cdot x_i \quad (45)$$

$$\hat{y}_l = 32{,}616 + \left(-2{,}3449\right) \cdot x_i = 32{,}39 - 2{,}3449 \cdot x_i \quad (46)$$

The forecast for 2017 and 2018 is:

$$\hat{y}_{2017} = 32{,}616 - 2{,}3449 \cdot 4{,}5 = 32{,}616 - 10{,}551 = 22{,}064 \quad (47)$$

$$\hat{y}_{2018} = 32{,}616 - 2{,}3449 \cdot 5{,}5 = 32{,}616 - 12{,}897 = 19{,}719 \quad (48)$$

In the area of other services, there is a decreasing trend in value, so in 2017 there is a lower volume of required services in the amount of 22.064.000 services on average, and in 2018 an additional drop in value is anticipated to 19.719.000 provided services.

Linear trend method applied to all services provided by Post

The table of original data showing the entire operation of the Post of Serbia at the ten-year level is given below.

Table 10. Linear trend method applied to all services provided by Post

All services					
Year	y_t original data (in millions of statistical units)	x_i	$y_i\ x_i$	x_i^2	$\hat{y}_l$
2007	451.60	-3.5	-1580.6	12.25	452.7310833
2008	478.98	-2.5	-1197.45	6.25	459.1290595
2009	454.84	-1.5	-682.26	2.25	465.5270357
2010	470.38	-0.5	-235.19	0.25	471.9250119
2011	480.75	0	0	0	475.124
2012	477.56	0	0	0	475.124
2013	473.62	0.5	236.81	0.25	478.3229881
2014	465.52	1.5	698.28	2.25	484.7209643
2015	463.84	2.5	1159.6	6.25	491.1189405
2016	534.15	3.5	1869.525	12.25	497.5169167
Total	4751.24	0	268.715	42	4751.24

Source: Authors' calculation

According to the given table, we can define the following parameters:

$$a = \frac{\sum y_i}{n} = \frac{4.751,24}{10} = 475,124 \quad (49)$$

$$b = \frac{\sum y_i\, x_i}{\sum x_i^2} = \frac{268,715}{42} = 6,3979 \quad (50)$$

The equation of the linear trend is:

$$\hat{y}_l = a + b \cdot x_i \quad (51)$$

$$\hat{y}_l = 475,124 + 6,3979 \cdot x_i \quad (52)$$

The forecast for 2017 and 2018 is:

$$\hat{y}_{2017} = 475,124 + 6,3979 \cdot 4,5 = 475,124 + 28,7905 = 503,9145 \quad (53)$$

$$\hat{y}_{2018} = 475,124 + 6,3979 \cdot 5,5 = 475,124 + 35,1885 = 510,9125 \quad (54)$$

In 2017 it can be expected that the scope of the services provided by Post will amount to 503.914.500 services, while the increase in 2018 is estimated at 510.912.500 services on average.

According to the linear trend, demand for all services provided by Post shows the absolute growth of the phenomenon, but this data should be considered cautiously and assuming that in 2017 and 2018, the conditions will be about the same as they were in the period when the trend was determined.

CONCLUSION

The linear trend method suggests that in the segment of letterhead services an increase in demand by 4,2% in 2017 and 0,22% in 2018 can be expected. In the monetary service segment, growth in demand for payment services can be expected to increase by 2% in 2017 and 1,24% in 2018. Information services that in 2016 had an increase in demand by 561,1% compared to 2015, according to the linear trend method will amount to 4.209.380 requested services in 2017 and 4.843.080 services in 2018. In the segment of other services, a decrease in demand is expected by 19,1% in 2017 compared to the previous year, and 10,6% in 2018. The scope of all services provided by Post is expected to increase by 7,9% in 2017 and 1,4% in 2018, provided the conditions remain similar to those that applied in the period from 2007 to 2016. It can be concluded that, in accordance with the applied methods, Post will have an increased demand for services in the coming years.

In accordance with the business strategy of the Company, Post plans investments in the improvement and development of production potential, in order to realize the projected business activities and financial indicators for the current and the next year. By completing the construction of regional postal and logistics centers (Belgrade, Nis, Novi Sad), Post of Serbia has provided a basic requirement for the development of logistical services for storing and transporting goods for a larger number of potential users, thus generating new flows of transport of factory units, postal items and placement of services on the logistics market.

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CORPORATE GOVERNANCE, CORPORATE FINANCE AND CONTROLLING
Professional paper

CONTROLLING OBOR PROJECTS' RISKS BY APPLYING MODERN PROJECT MANAGEMENT TOOLS

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Abstract:

One Belt One Road (OBOR) Initiative launched by People's Republic of China is currently the biggest publicly undertaken investment portfolio in the world. It refers to construction of numerous capital infrastructure projects in Europe and Asia, accompanied by upgrading naval and continental transportation roots. Megaprojects carry significant amount of various risks on its own. Mutually dependent megaprojects, relying on one sole credit loan provider targeting a number of diversified developing countries eager to attract foreign investments with affordable interest rates, increase the scope and effect of the investing risks. Modern industrial and institutional project management tools have considerably contributed to the third and fourth industrial revolution, resulting in significant industrial, commercial and economic development of markets in Europe and United States of America. Applying these project management tools can result in risk control of future OBOR projects and ensure that all stakeholders benefit from future development and expansion of OBOR.

Keywords:

China, Investments, OBOR, Project Management Tools, Risk Control

INTRODUCTION

One Belt One Road (OBOR) Initiative, also known as Belt and Road Initiative (BRI), or the New Silk Road project, was announced in September 2013 in Astana (Kazakhstan) by the president of People's Republic of China, Mr. Xi Jinping. It refers to the initiative of China leading a massive investment portfolio, envisaging capital infrastructure projects located throughout central, southern and western Asia, Africa, Middle East and Europe. Project scope focuses on construction of road and naval transportation infrastructure such as highways, railroads and ports, along with capital energy, gas and oil facilities infrastructure. Overall goal of OBOR is for China to lead the integration of this market, contributing to its sustainable economic and trading development in the 21st century. So far OBOR Initiative has attracted considerable attention in global business market inspiring different comments and opinions. Nevertheless, OBOR Initiative remains at the moment the largest investment initiative led by one country in perspective of financial magnitude, target market area and scope of work. As such it can be compared to the Marshal's Plan (Shen & Chan, 2018). A number of state-governed supporting mechanisms for OBOR Initiative have been established, with the most prominent being Foreign Aid and Government-Sponsored Investment Activities (FAGIA), EXIM Bank, China Development Bank (CDB) and Asia Infrastructure Investment Bank (AIIB). OBOR Initiative map is presented in Figure 1.

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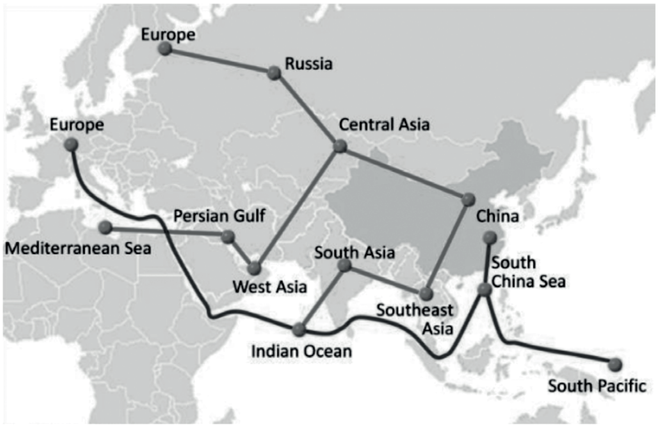
Figure 1. Map of OBOR Initiative



Source: Legislative council of Hong Kong

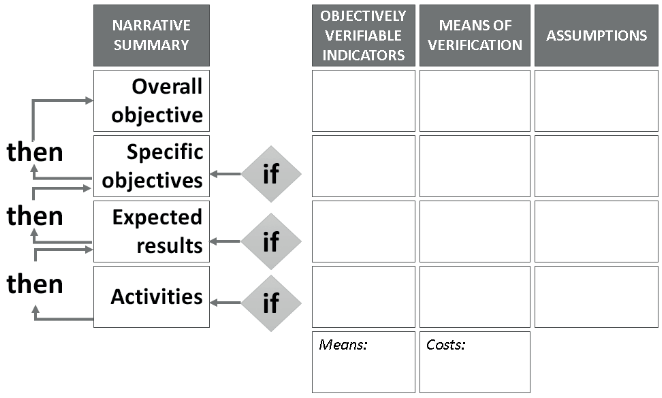
Logical Framework Approach (LFA), in some cases referred to as LogFrame, is a tool used for project planning, monitoring and evaluating, initially developed in 1970s upon request of the United States Association for International Development (USAID), as a comprehensive tool for evaluating effectiveness and efficiency of international aid and support projects funded by USAID (Schmidt T, 2009). Logical Framework Matrix (LFM) is an output document of LFA which consists of a four by four matrix. LFM contains most important information on the project, differentiated in four columns – Narrative Summary, Objectively Verifiable Indicators, Means of Verification and Assumptions, which are intersected by four rows – Overall objective, Specific Objective, Expected Results and Activities. An example of the LFM is presented in Figure 2.

Figure 2. Logical Framework Matrix (LFM)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Overall objective			
Specific objectives			
Expected results			
Activities			
	Means:	*Costs:*	

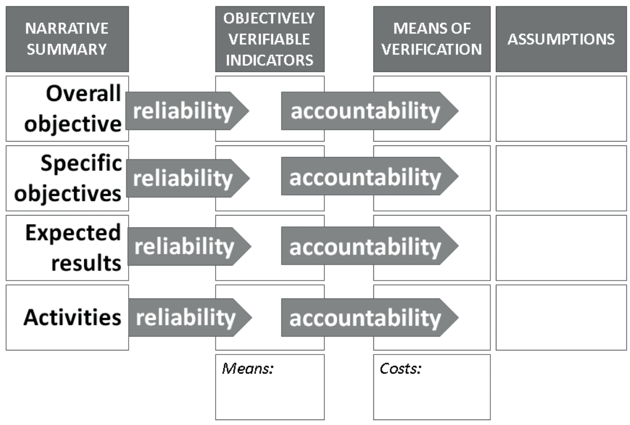
Key stronghold of LFA with LFM is the ability to easily describe project outcomes in concise quantitative and qualitative manner. This is the result of processing data collected and interlinking all of information acquired through usage of the intervention logics applied in LFM design phase. LFM has three intervention logics applied in itself. First – vertical intervention logic, which is applied in the first column on the left (Figure 2). Here the systems approach is applied using causal interlinking which relies on the "if – then" conclusions. It states that if work listed in the field "Activities" is successfully fulfilled, this will result in accomplishment of milestones listed in "Expected results" field. The successful completion of work listed in "Expected results" leads to accomplishment of milestones listed in "Specific objectives" and, likewise, this leads to successful accomplishment of items listed in "Overall objective". Vertical intervention logic is presented in Figure 3.

Figure 3. LFM Vertical intervention logic



Second – horizontal, intervention logic ensures reliability of results and accounts for quality assurance and control. In this case, results from any of the fields within the first column are confirmed by being compared against Objectively Verifiable Indicators (OVI) using Means of Verification (MOV). Horizontal intervention logic is presented in Figure 4.

Figure 4. LFM horizontal logic

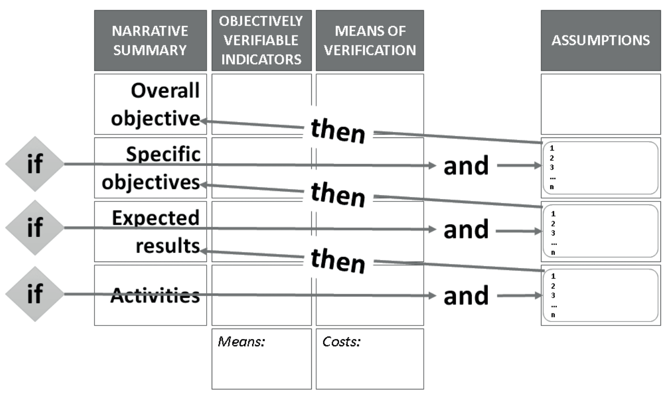


Third intervention logic applied in the LFM is referred to as cross-check intervention logic. It account for both vertical and horizontal intervention logic, but now includes the last column entitled "Assumptions". This column contains information on occurrences, factors and other risk sources that come from outside of the project scope and environment, and can contribute or endanger the overall sustainability of the project. This intervention logic follows the "if – and – then" conclusion, which has the following conclusion order

- if [Activity] and [Assumption(s)] then [Expected Result(s)]
  which is repeated on the next upper level, analogically as:
- if [Expected Result(s)] and [Assumption(s)] then [Specific Objective(s)]
  and is accordingly followed by linking with the Overall Objective in the following way:
- if [Specific Objective(s)] and [Assumption(s)] then [Overall Objective]

Cross-check intervention logic is presented in Figure 5.

Figure 5. LFM cross-section intervention logic



LITERATURE REVIEW

Megaprojects

Megaproject can be considered a project that features a large investment commitment, accompanied by vast complexity in management terms, and a long term impact on the environment it is developed in (Brookes & Locatelli, 2015). From the managing perspective, megaprojects require complex and cross sector engagement for the purpose of successful coordination and completion, accounting for technical, financial, social and other relevant resources (Hu, Chan, Le, & Jin, 2013; Locatelli, Mancini, & Romano, 2014). Over the course of history megaprojects naturally evolved which led to both theoretical and practical sophistication of their interpreting. Three traditional success indicators – cost, time and quality (Locatelli et al.), often referred to as "iron triangle", are facing constant questioning and reconsidering, in the light of the complexity of project being developed today and planned for the future, as they are often referred to as short-termed and interpreted as contract-based.

Following the analysis of 318 industrial megaprojects from different environments, Merrow (2011) shows that up to 65% of megaprojects are considered a failure. This is why a huge scope of study is open for the application of risk prevention tools in megaprojects, as presented in Kardes et al. (2013). Reliable literature offers a number of theoretical perspectives on this issue, out of which three are considered most prominent. First one is the complexity theory, which is promoted by various authors (e.g., Geraldi, Maylor, & Williams, 2011; Pich, Loch, & De Meyer, 2002; Howell, Windahl, & Seidel, 2010; Shenhar & Dvir, 2007), suggesting ways of assessing complexity in projects and offering methods for studying the complexity itself and its impact. Second is the structural theory (Pennings, 1992). It promotes "one size doesn't fit all" approach and intends to identify differences among megaprojects by using different criteria and dimensions, suggesting ways to successfully account for diverse kinds of megaprojects. Third theory is the transaction cost economics one (Douma & Schreuder, 2008; Luzzini, Caniato, Ronchi, & Spina, 2012), which observes projects as value creation processes, which is of use when analyzing the net worth of benefits versus investments. Flyvbjerg (2017) defines Political, Technological, Economical, and Aesthetic as the "four sublimes" that drive project management, with their appropriate characteristics. Also precise and descriptive approach to risks and challenges in infrastructure megaprojects is available from Van de Graaf and Sovacool (2014) and Sovacool and Cooper (2013).

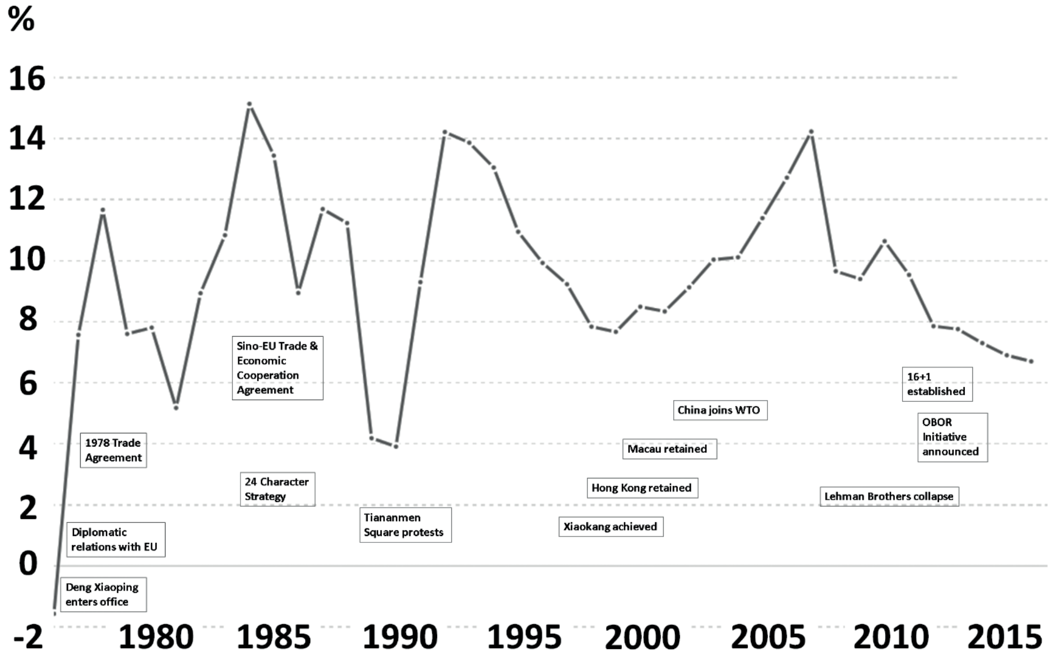
China's recent economic development overview

People's Republic of China was founded in 1949 with governing political party being the Chinese Communist Party (CCP), which has been in power since 1940s. Following the death of CCP Chairman Mr. Mao Zedong in 1976, changes introduced and implemented by his successor Mr. Deng Xiaoping (1904 – 1997) are considered to be key turning points in Chinese economy and overall industrial development. Major change in political philosophy that came with Mr. Deng Xiaoping, was introducing the approach that peaceful times are best to engage in economic progress and development, compared to the approach of Mr. Mao Zedong who advocated that chaos leads to changes. At the moment of Mr. Deng Xiaoping stepping into power, China's population was 930.7 million (WBG) and gross domestic product (GDP) growth equaled -1.6 (OECD).

“Going Out” (Zou Chuqu) policy proved to be crucial in the process of China’s economic transition. It revolves around the idea of China exporting goods, raw products, commodities, along with capital intended for direct investments with the goal of establishing a lasting and interdependent relation with foreign markets (Ministry of Commerce). With this in mind, in late 1980s Mr. Deng Xiaoping laid down foundations of the foreign policy reforms often referred to as the “24 Character Strategy”. By mid 1990s, all predefined performance indicators have been fulfilled, meaning that in accordance with the “24 Character Strategy” the milestone named “Moderately prosperous society” (Xiaokang) has been achieved. In 1997, new performance indicators have been established in order to reach the new milestone by 2020, marking the centenary of establishing the CCP. This all is leads to the supreme goal of reaching the “Overall prosperous society” (Quianmian Xiaokang) due on 2050, marking the centenary of People’s Republic of China.

China has valued its relationship with the EU very much and oriented itself towards intensifying their cooperation in numerous of fields. This is why Chinese’s officials’ approach to the EU has been pragmatic from the start. EU on the other hand welcomed the initiative and fostered intensive diplomatic and trade building relations. Once initiated, this cooperation took a high pace. In 1975, the first diplomatic relations have been established. By 1978 the first official document – “1978 Trade Agreement” was signed, followed by “Sino-EU Trade and Economic Cooperation Agreement”, signed in 1985. A major setback in China – EU relations has occurred as a result of a political crisis in Beijing, related to political protests in the Tiananmen Square in 1989. In upcoming years China retained its rights over Hong Kong (in 1997) and Macau (in 1999). The next important step would be China entering the World Trade Organization (WTO) in 2001. At that time, China, led by Mr. Hu Jintao as President, introduced and promoted the idea of a “peaceful rise” which implied that its economic progress is defined as nation’s legitimate goal, for which global peace is a crucial prerequisite. The September 2008 financial crisis in USA, had no significant effect on China, since in 2009 China reached 8.7% of its national economic growth. Figure 6 depicts parallel tracking of aforementioned key political developments of China and the EU in line with the rise of China’s gross domestic product (GDP).

Figure 6. China’s GDP in line with global developments



METHODOLOGY

Research methodology applied in the paper is an inductive cross-case analysis. This is a technique that adopts similarly constructed cases and uses a structured process to review cases in order to reach “cross-case” patterns. These “patterns” are then applied to generate theoretical propositions. This approach is based on the seminar work of Kathleen Eisenhardt (1989). She had derived a process where theoretical generalizations can be generated from reviewing a set of cases of a particular phenomenon observed. Eisenhardt (1989, p.545) also discusses the issue of "reaching closure", referring to "when to stop adding cases, and when to stop iterating between theory and data". In her opinion, researchers are advised to conclude adding cases once reaching theoretical saturation and/or once the incremental improvement to quality is minimal. The main objective of this paper is to understand how application of LFA with LFM in OBOR Initiative related megaprojects can be applied to control their risks, and ensure efficient management of megaprojects within European market.

RESULTS AND DISCUSSION

China-CEEC meeting

In 2012, Poland hosted the first annual meeting of the "China and Central and Eastern European Countries" platform, often referred to as "China-CEEC meeting", or "16+1" framework. Meeting gathered heads of states from countries in Central and Eastern Europe, together with highest representatives of China, discussing investment projects China intends to fund in these countries. Member countries of 16+1 framework, along their official population in 2017 and the EU membership status are presented in Figure 7.

Figure 7. 16+1 Member countries with their population and the EU status

#	Country	Population*	EU status
1	Albania	2,930,187	candidate
2	Bosnia and Herzegovina	3,507,017	candidate
3	Bulgaria	7,084,571	member
4	Croatia	4,189,353	member
5	Czech Republic	10,618,303	member
6	Estonia	1,309,632	member
7	Hungary	9,721,559	member
8	Latvia	1,949,670	member
9	Lithuania	2,890,297	member
10	FYR Macedonia	2,083,160	candidate
11	Montenegro	628,960	candidate
12	Poland	38,170,712	member
13	Romania	19,679,306	member
14	Serbia	8,790,574	candidate
15	Slovakia	5,447,662	member
16	Slovenia	2,079,976	member
	Total population	**121,080,939**	**85% EU**

During the following 16+1 meetings (2013 in Romania, 2014 in Serbia, 2015 in China, 2016 in Latvia, 2017 in Hungary and 2018 in Bulgaria), a number of joint documents was signed and promoted, for specific projects to be implemented in the upcoming period. Globally, the 16+1 meetings give the public an annual outlook of China's trends intentions, also being an efficiency indicator of its European market expansion. The illiquidity of credit takers however remains the biggest sustainability threat, and can be easily indicated by comparing the value of contracted megaprojects to each country's annual gross domestic product (GDP). Figure 8 shows most prominent megaprojects announced on previous 16+1 meetings, with their value and percentage of the country's annual GDP.

Figure 8. Prominent CEEC projects announced on previous 16+1 meeting

#	Country	Project	Value [MEUR]	% of GDP
1	Albania	European Motorway VIII: Arber motorway to FYRoM	200	2
2	Bosnia and Herzegovina	Banja Luka – Split motorway	600	16
3		450 MW unit at Tuzla thermal power plant	786	
4		350 MW Banovići thermal power plant	400	
5		300 MW Stanari thermal power plant	350	
6	Hungary	Belgrade-Budapest high-speed railway link	1500	1
7	Montenegro	Section of the European motorway XI	809	27
8		Renewal of the ship fleet	100	
9	Romania	500 MW unit at Rovinari thermal power plant	1000	4
10		Mintia-Deva thermal power plant modernization	250	
11		Tarnita-Lapustesti hydro power plant expansion	1000	
12		Units 3 and 4 at Cernavoda nuclear power plant	2000	
13	Serbia	Danube bridge	170	8
14		Kostolac Phase I	130.5	
15		350MW unit at the Kostolac thermal power plant	700	
16		Belgrade-Budapest high-speed railway link	800 (in Serbia, out of 1500)	
17		Sections of the European motorway XI (to Montenegro)	900	
18	FYRoM	Motorways construction	580	7

Source: European Bank for Reconstruction and Development (2016), based on Intellinews, 2016 with additional research by author based on various media reports

Risks of OBOR Initiative related megaprojects in European market

Risks are inevitable to any project, hence they are inevitable for megaprojects encompassed by OBOR Initiative. With regards to key parameters that constitute a project, the risks discussed focus on quality and cost issues.

In terms of cost risks, the one concerning nonperforming loans (NPL) is the most important one. In cases of projects announced in the 16+1 framework (Figure 7), most of the credit beneficiaries are states or state dependent enterprises, which brings considerable risk to general performing of credit repayment. It is possible for a state to sign a credit loan for the purpose of developing a project within the OBOR Initiative and later not be able to perform on the credit, thus not being able to payback the invested money, which results in credit default. The state's authorities can enter negotiations aware that the credit loan might not be paid back in the designated period, all for deliberate purpose of scoring locally on home political grounds. In this case Chinese side is faced with losing the money invested in the project, or compensating it with acquisition of assets, which in cases of megaprojects, can include land and natural resources, such as the recent case of Hambantota port in Sri Lanka. It is however questionable whether and to what extent outcomes like this meet approval of financial authorities that initially provided the credit loan, and of Chinese government authorities. The wider context of the project's failure would also suffer as the expected result (as defined in LFM) has not been accomplished, thus slowing down the overall goal of Chinese investments. Turning to the state that cannot payback the credit loan, the increased public debt and especially acquisition of assets can be a major obstacle to the EU accession process. In terms of low quality performance, it is here that we face the lack of knowledge, experience and skills of Chinese subcontractors, necessary to achieve high level standards required by the EU market. This is a result of Chinese companies gathering considerable experience in infrastructure megaprojects in markets of Africa and Latin America, where they were not subjected to such rigorous performance and quality related criteria by the hosting legal framework and regulations, as is the case in European markets. Examples megaprojects not related to China listed in Figure 8 as well as the ones of the 2009 A2 highway construction failure in Poland, and existing construction delays in the Belgrade – Budapest high speed railroad serve as a reminder of this and a valuable "lessons learned" resource.

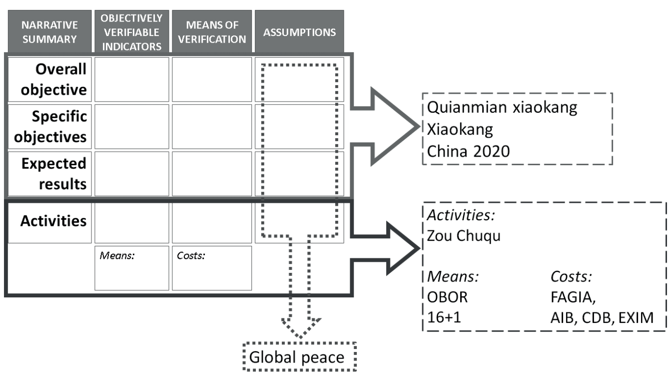
Figure 9. List of famous megaprojects with cost overruns and construction duration details

#	Project name and country of origin	Start and completion date	Construction duration [years]	Cost overrun [%]
1	Suez Canal, Egypt	1859 – 1869	10	1,900
2	Scottish Parliament Building, UK	1999 – 2004	5	1,600
3	Sydney Opera House, Australia	1959 – 1973	16	1,400
4	Furka base tunnel, Switzerland	1976 - 1982	16	300
5	Verrazano Narrow bridge, USA	1959 – 1969	10	280
6	Boston's Big Dig artery/tunnel project, USA	1991 – 2007	6	220
7	Denver international airport, USA	1989 – 1995	6	200
8	Panama canal, Panama	1881 – 1914	33	200
9	Minneapolis Hiawatha light rail line, USA	2001 – 2004	3	190
10	Humber bridge, UK	1972 – 1981	9	180
11	Dublin Port tunnel, Ireland	2001 – 2007	6	160
12	Montreal metro Laval extension, Canada	1962 – 1966	4	160
13	Copenhagen metro, Denmark	1996 – 2002	6	150
14	Great Belt rail tunnel, Denmark	1991 – 1998	7	120
15	London Limehouse road tunnel, UK	1989 – 1993	4	110
16	Brooklyn bridge, USA	1869 – 1883	17	100
17	Channel tunnel, UK & France	1988 – 1994	6	80
18	Karlsruhe-Bretten light rail, Germany	1989 – 1992	3	80
19	London Jubilee Line extension, UK	1993 – 1999	4	80
20	Bangkok metro, Thailand	1996 – 2004	8	70
21	High-speed Rail Line South, The Netherlands	1998 – 2009	9	60

Source: Bent Flyvbjerg, 2017, "Introduction: The Iron Law of Megaproject Management," in Bent Flyvbjerg, ed., The Oxford Handbook of Megaproject Management (Oxford: Oxford University Press), Chapter 1, pp. 1-18;

Given the complexity of OBOR Initiative it is shortsighted to interpret China and the European market as a trivial "sponsor – client" relationship. Reasoning behind this is due to both complexity of scope (cost related) and duration (time related) feature of OBOR Initiative. This simplified interpretation leaves a lot of blind spots for sustainability risks that might occur in the development and implementation of OBOR Initiative. It is why the relation between China and European market is better to be interpreted as a partnering one, especially since both sides have declared this as the key feature of their cooperation, through the last decades of mutual cooperation (Farnell J., Crookes P.I., 2016). With European market and China perceived as partners in OBOR Initiative, LFM is a grateful planning, monitoring and evaluation tool. The applicability increases knowing that overall success of OBOR Initiative is a common goal of both sides. Interpreting OBOR Initiative through LFM is a useful sustainability assessment tool, as it accounts for the context of China's general national policy of economic development. Using the systems approach (Marković D.S, 2012) and relying on the cause and effect conclusiveness of the intervention logics within the LFM, clear correlation between China's national strategies and means of achieving them can be outlined. Accounting for aforementioned national strategies and milestones of Xiaokang and Quianmian Xiaokang presents the Overall objective resulting from fulfillment of Specific objectives. The way Specific objectives are linked to and dependent of Expected results is likewise plausible. As for reassurance, Objectively Verifiable Indicators (OVI) and Means of Verification (MoV) transparently confirm the appropriateness of placing the Chinese national development policy in the Overall objective field of the LFM, as well as effectiveness and efficiency of Chinese national policies' implementation. Figure 10 depicts the aforementioned approach.

Figure 10. OBOR Initiative in LFM



Assumptions are the one field that cannot be controlled by China, as by definition Assumptions in LFM (Schmidt T., 2019) are external risks not controlled by a project manager. This finally brings us to the Activities row, with accompanying Means and Costs, which are most visible to the majority of the public. It is here where OBOR Initiative, "China-CEEC meeting" (or "16+1" framework) and their accompanying megaprojects find their place. They are simply a way to achieve a set of activities ("Go Out", or Zou Chuqu). This is why it is incorrect and nothing more than superficial to interpret the OBOR Initiative through the prism of exporting commodities and low wage workers, for the purpose of developing megaprojects. Looking at Figure 8, it is understandable why CEES countries welcome Chinese megaprojects' credit loans. Short term planning and appealing credit loans are too attractive to look ahead and consider risks they bring in. Looking at the Figure 7 and Figure 8, however, now from the perspective of China, it is understandable why OBOR Initiative fosters mechanisms such as 16+1 targeting a market of over 120 million, out of which 85% is in the EU. CEES market is an ideal host to megaprojects promoted by OBOR Initiative, as their completion narrows down the industrial and economic development gap between the CEEC countries and Western European countries.

CONCLUSION

OBOR Initiative is a unilateral funding infrastructure portfolio of megaprojects spanning on three continents, a part of a lasting national economic progress plan, and as such carries considerable risks. Magnitude of megaprojects is comparable to the magnitude of potential damage to stakeholders in case of project failure. Main risks concern nonperforming loans (NPL) and low quality. The NPL risk lies in the simplified structure of unilateral credit loan financing provided by Chinese authorities and the fact that credit loan contracts can be signed with potentially underperforming clients. In this case, the lender is vulnerable to the option of the credit loan going default. The issue of low quality lies on one hand in high conformity required by European markets in terms of developing megaprojects, but also on the other hand in Chinese approach of subcontracting at dumping prices, originating from the Chinese national concept of wanting to export its goods and labor.

LFA and LFM can contribute to OBOR Initiative megaprojects' efficiency by anticipating key risks in the preliminary development stages. LFA and LFM account for a multitude of different mutually independent parameters that inevitably occur in developing megaprojects, such as issues related to overcoming cultural differences, political instability, wars, natural disasters, disputes that arise from religious or ethnical backgrounds, which will jeopardize sustainability of OBOR Initiative megaprojects. Moreover, LFA with LFM can be used as a reliable planning tool for interpreting complex yet progressive economic development of China in the past and upcoming period (Figure 10). Finally, the intervention logic of LFM, conclusive with the Chinese national approach of Mr. Deng Xiaoping, clearly indicates peace being the key prerequisite for economic prosperity. China is without a doubt decisive in accomplishing its Quianmian Xiaokang goal, and will not jeopardize it by contributing to any war or war-related situations. This provides valuable comfort to all OBOR Initiative sceptics who interpret it as a geopolitical hostile takeover mechanism.

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FINANCE, BANKING & INSURANCE

This section is devoted to the papers that focus on the field of FINANCE, BANKING & INSURANCE. The first paper analyses the procedures and trends in NPLs (non-performing loans) stock, as a consequence of the successful resolution of the NPLs issue in Serbia and selected CESEE countries. The paper highlights the benefits, which are derived from successful implementation of the NPLs resolution strategy, as well as the significance of preventing NPLs accumulation in financial systems. Other than their capital, foreign banks have also brought their paradigm of efficient business into our economic system, thus strengthening Serbia's banking system. Therefore, the aim of the second paper is to point out the efficiency trends of the examined banks within the period from 2010 to 2017, by using efficiency indicator ratios. The third paper shows an emergence and a rapid development of cryptocurrencies with its monetary and technological background. From the monetary aspect, cryptocurrencies have emerged as one of the solutions to the consequences of the last major World financial and economic crisis. The final paper is focused on the importance of the foreign currency clause in foreign business transactions.

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FINANCE, BANKING AND INSURANCE
Scientific - review paper

EMPIRICAL EVIDENCE ON NPLS RESOLUTION: SERBIA AND CESEE COUNTRIES

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Abstract:

In past decade, joint impact of financial crisis and economic recessions, followed by inadequate loan disbursement practices, influenced on high NPLs ratios existence in certain countries. Negative effects of high NPL ratios on economic growth and credit lending activity signalized the necessity of urgent reaction in the direction of NPLs declining at satisfactory pace. This paper analyzes movements and trends in NPLs stock as a consequence of successful resolution of NPLs issue in Serbia and selected CESEE countries. Simultaneously, the paper highlights benefits, which are derived from successful implementation of NPLs resolution strategy, as well as the significance of preventing NPLs accumulation in financial systems. Due to avoidance of future emergence of new NPLs in significant extent (which could seriously deteriorate the stability of banking systems), authors concluded that within observed countries has been created a positive economic environment and sufficient incentives for further credit lending activity growth in prospective period.

Keywords:

NPLs (non-performing loans), resolution, Serbia, CESEE, strategic approach

INTRODUCTION

During credit boom in emerging and transition economies, there had not been sufficient caution regarding loan riskiness. As a consequences of inadequate risk management policies, those countries were faced with significant portion of non-performing loans (hereinafter: NPLs), which deteriorated their financial sectors at whole (Mirković & Knežević, 2014a). For mentioned countries, taking appropriate measures for NPL resolution was the biggest challenge. After global crisis emergence in 2008, economic recovery is additionally lingered by NPLs, which worsened loan portfolio quality and decreased the capital of banks (Mirković & Knežević, 2014b). At the same time, the category of NPLs represents the optimal connection between real and financial sector and it could be observed as paradigm for overview of CESEE economies as well as Serbian economy (Mirković & Knežević, 2013).

As Đukić (2012) noticed "The strategy of maintaining allegedly healthy and successful banking and financial sector in general, in circumstances of real sector distortion, is a priori adjudged to catastrophe". Effective and efficient functioning of banking system assumes identification and resolution of NPLs in the manner to provide and maintain the stability of economy as a whole. Issues regarding NPLs and its resolution with the focus on Serbia and CESEE countries are essential from the view of future development of banking industry. In this paper are elaborated efforts and results in Serbia and CESEE countries in the segment of NPL resolution, emphasizing its significant downward trend, as a prerequisite for the efficient and "health" banking system.

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LITERATURE REVIEW

When NPLs are recognized as the main issue in various banking systems, it raised several new issues. One of the most important issues was the absence of unique definition for NPLs and the problem of harmonization between countries. A lot of countries (as well Serbia) accepted the NPL definition given by IMF (2005), but beside the fact that criterion for NPLs classification is mostly related to threshold of overdue days at the level of 90 days or more, there exists significant differences. Those differences are impersonated in other aspects of NPLs classification, such as: collateral treatment, treatment of restructured debts, treatment of other loans of the same debtor in case that debtor has several outstanding loans and obligations toward banks (Barisitz, 2011). It was necessary to harmonize the definition and coverage of NPLs between countries, so one of the solutions was given by European Banking Authority (EBA) with its incentive in October 2013 introducing the term of non-performance exposure (hereinafter: NPE). It should be noted that NPLs and NPEs are not identical terms, but with NPEs definition among EU countries (and those which are in the pre-accession phase to EU) there was made a huge step toward obtaining comparable data between countries.

NPE definition entered into the force as end of September 2014 in alignment with EBA's document "Final draft Implementing Technical Standards on supervisory reporting on forbearance and non-performing exposures". According to above mentioned document, NPEs are "those that satisfy either or both of the following criteria:

a) material exposures which are more than 90 days past-due; and
b) the debtor is assessed as unlikely to pay its credit obligations in full without realization of collateral, regardless of the existence of any past-due amount or of the number of days past due" (European Banking Authority, 2014a).

EBA makes differences between transaction approach (which classifies only specific loans as NPEs, e.g. retail customers) and debtor approach (where all exposures assigned to the same debtor are classified as NPEs) in dealing with NPEs. As the portion of NPLs in total loan portfolio deteriorates the picture of the bank's stability, from the bank's point of view it is necessary to improve the quality of its loan portfolio through minimization of NPLs share in total loans.

Robust and complex process (as asset quality review, shortly AQR) has an extraordinary importance for banking systems on national and global level. Results of conducted assessments are the best indicator of financial systems "health" and the starting point for improvements of supervisory activities and practices, all together for the purpose of banking industry maintenance. Starting from 2014, European Central Bank (ECB) jointly with national supervisory authorities, conducted the control of financial "health" in banks, which they directly supervised. That comprehensive analysis from ECB side is performed in order to assess whether banks are adequately capitalized and how they would face with future extraordinary events (financial shocks). Comprehensive AQR process is conducted on regular or ad hoc basis. During regular assessment of asset quality in banks, there are conducted initial controls of status in banks, which are classified as systemically important banks according to latest classification. AQR on ad hoc basis means that controlling and monitoring in banks is conducted occasionally, i.e. when some unusual events emerge (Mirković, Dudić B. & Dudić Z., 2016). In 2014, ECB conducted comprehensive AQR, which included 130 banks within euro area, making approximately 82% of total bank assets and involving 26 national supervisory institutions. AQR process resulted in aggregate adjustment of 47.5 billion EUR (based on financial statements of banks as of 31 December 2013). NPE status was increased by 135.9 billion EUR, with identified a capital shortfall of 24.6 billion EUR related to 25 participating banks (European Central Bank, 2014b).

Further, in 2015 ECB continued with AQR process in 9 banks, which are chosen based on criterion of significance. It means that selected bank should had total assets over 30 billion EUR or total assets which exceeded 20% of state GDP; that selected bank is one of the 3 most significant banks in observed state EU member and that banking group's cross-border activities are significant. The total assets of each of 9 participating banks range from 2.6 billion EUR to 57.4 billion EUR, placing them among the smaller institutions subject to direct ECB supervision. AQR process resulted in aggregate adjustments of 453 million EUR based on financial data as at 31 December 2014. Comprehensive assessment identified a capital shortfall of 1.74 billion EUR across 5 participating banks (European Central Bank, 2015).

In 2016, ECB conducted AQR process on the following four banks: Abanka d.d. (Slovenia), Akciju sabiedrība "Rietumu Banka" (Latvia), Banca Mediolanum S.p.A. (Italy) and Citibank Holdings Ireland Limited (Ireland). The AQR component was performed based on the methodology applied in the 2014 and 2015 exercises. Also, the threshold ratios applied for identifying capital shortfalls were maintained at the same levels as in 2014 and 2015. None of the three mentioned banks (excluded the bank from Latvia, which results are not included) do not face capital shortfalls as a result of the comprehensive assessment. Nevertheless, the banks will be expected to undertake actions to address qualitative findings of the AQR such as deficiencies in policies and processes and weaknesses in data systems (European Central Bank, 2016).

Due to necessity for detailed analysis of asset quality in domestic banks, within stand-by arrangement with IMF, National bank of Serbia also conducted AQR process. The scope of analysis was 14 the largest banks in Serbia, which together make 88% of total assets in Serbian banking sector. The purpose of conducted exercise was determination whether capital adequacy on reference date (March 31, 2015) was in line with regulatory requirements. AQR process in Serbia was established on main principles that ECB has already used, followed with certain specifics and differences (National bank of Serbia, 2015a). Banks were chosen by criterion of systemically importance, while realization of AQR process required cooperation between various institutions, such as: audit companies (Deloitte, Price Waterhouse Coopers, Ernst & Young and BDO), appraisal companies (JLL, CBRE, Colliers, Danos, NAI Atrium and Coreside) and National bank of Serbia, as central bank institution with main responsibility for independent control of business, monitoring, analysis and testing the results (Mirković, Dudić B. & Dudić Z., 2016).

METHODOLOGY

Due to stricter write-off policies and strategic approach to NPL resolution, NPL situation has improved in CESEE countries, with NPL volumes reaching their lowest level in 7 years i.e. 42.8 billion EUR as of 30 September, 2017 for the region (Vienna Initiative, 2018). Most jurisdictions have continued to implement reforms to resolve the remaining impediments to NPL resolution and sales. Moreover, the EU regulators have also been very active in introducing a broad range of new initiatives around NPLs. These are expected to put further pressure on adjacent countries to the EU to align with these European best practices, particularly for accession countries and where subsidiaries of European banks are present. NPLs declining at satisfactory pace in Serbia and CESEE countries confirmed efficiency of strategic approach in NPL resolution issue.

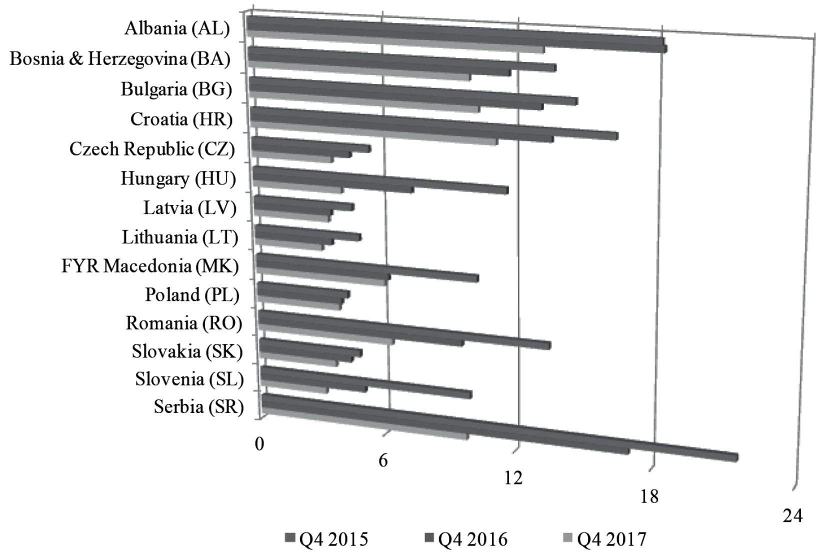
In this paper authors are focused on selected sample of 14 CESEE countries (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Latvia, Lithuania, FYR Macedonia, Poland, Romania, Slovakia and Slovenia) including Serbia, based on publicly available data on IMF website and website of National bank of Serbia. Authors applied comparative analysis between countries for the observed period (between 2015 and 2017), with general conclusion that gross NPL ratio level (obtained as NPL stock divided by total loans) has continuous decreasing trend in all countries (Table 1 and Figure 1).

Table 1. Gross NPL ratio in selected sample of CESEE countries between 2015 and 2017

Country:	**Q4 2015**	**Q4 2016**	**Q4 2017**
Albania	18.2	18.3	13.2
Bosnia&Herzegovina	13.7	11.8	10.0
Bulgaria	14.6	13.2	10.4
Croatia	16.3	13.6	11.2
Czech Republic	5.5	4.6	3.7
Hungary	11.7	7.4	4.2
Latvia	4.6	3.7	3.5
Lithuania	4.9	3.7	3.2
FYR Macedonia	10.3	6.3	6.1
Poland	4.3	4.0	3.9
Romania	13.5	9.6	6.4
Slovakia	4.9	4.4	3.7
Slovenia	10.0	5.1	3.2
Serbia	21.6	17.0	9.8

Source: IMF (http://data.imf.org/regular.aspx?key=61404590)

Figure 1. Gross NPL ratio in selected sample of CESEE countries between 2015 and 2017

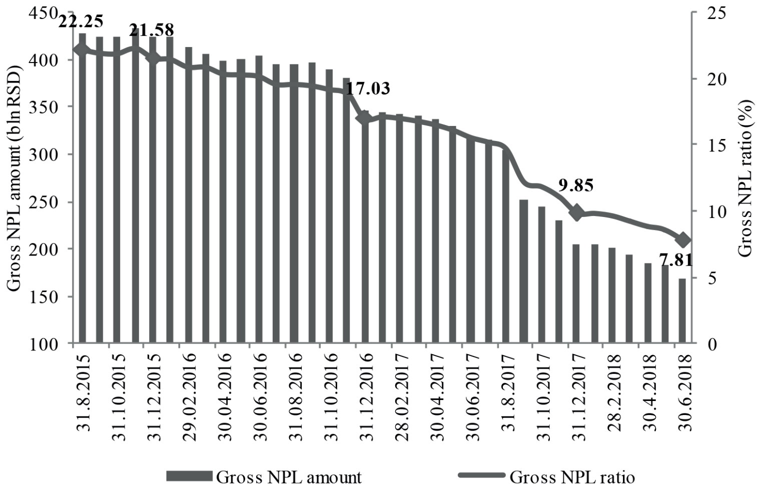


Strategic approach for NPL resolution in Serbia

Republic of Serbia acknowledged the need to impose comprehensive strategic approach for resolving NPLs, while not undermining the market principles. Although, various models for cleaning the balance sheets of banks could be seen in practice also including government intervention and establishment of the bad banks, the Republic of Serbia has chosen the model which corresponds to characteristics of domestic market. Chosen model is focused on enhancement of banks' capacities to resolve NPLs, ensuring the conditions for more effective collection and development of NPL market. In August 2015, the Government of the Republic of Serbia adopted the Strategy for NPL resolution (Ministry of Finance Republic of Serbia, 2015). In order to specify activities and monitor implementation of the Strategy, the Government and National bank of Serbia adopted Action plans in line with their competences, whereby it is envisaged for Strategy to be three-year continuous process. The National bank of Serbia has conducted all activities in line with its Action plan aiming to: enhance the banks' capacities to resolve NPLs, improve restructuring practices and accounting practices, enhance transparency of banks regarding assets quality, improve collateral management in banks and reporting to regulatory body regarding NPL structure (National bank of Serbia, 2015b). One of the key steps for successful resolution of NPL issue in Republic of Serbia was adoption and implementation of "Decision on the accounting write-off of bank balance sheet assets" (National bank of Serbia, 2017), which entered into a force as end of September 2017. The accounting write-off in terms of mentioned Decision means the transfer of a bank's balance sheet assets to off-balance sheet records.

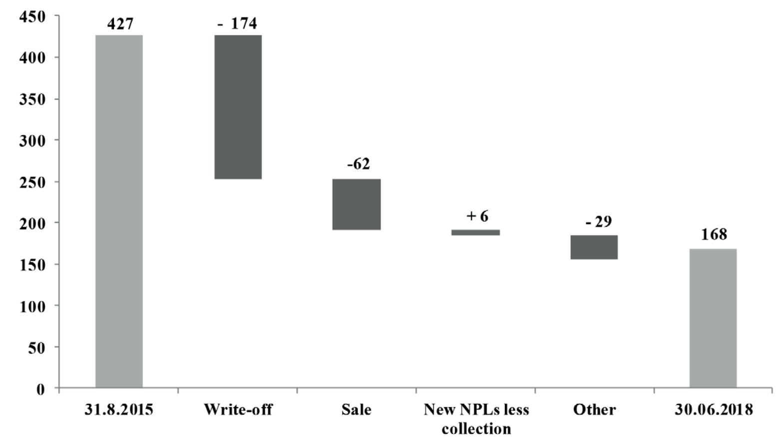
After almost three years, systemic, inter-institutional and coordinated approach envisaged by the NPL Strategy together with adoption of Decision, led to significant decrease of gross NPL ratio and bringing down on one-single digit. According to data as end of June 2018, gross NPL ratio reached 7.8% (the lowest level since pre-crisis period in 2008), which is down by 14.4 percentage points since Strategy adoption (Figure 2). In the same period, the absolute amount of gross NPLs was decreased by 61% (from 427.3 billion RSD to 168 billion RSD). The most significant channels in NPLs reduction are: direct write-offs and assignment of receivables (NPL sale). As end of June 2018, considering from the period of the Strategy adoption, the total NPL decrease which is owed to direct write-offs was 174.4 billion RSD with visible dispersion among all banks apart from their ownership structure. Moreover, as a direct consequence of adopted Decision, banks intensified the direct write-offs starting from September 30, 2017, so including data from June 2018 total direct write-offs stood at 109.4 bln RSD (that is 63% of total write-offs in previous three years). Since NPL Strategy adoption, the net effect of NPL sale (assignment of receivables) reached 83.1 billion RSD (National bank of Serbia, 2018).

Figure 2. Gross NPL ratio in Serbia since NPL Strategy adoption till June 2018



A further decline of NPLs is expected not only due to the undertaken activities, but also due to the extension of activities of the National bank of Serbia, Government and other market participants aimed to resolving existing NPL stock and preventing the development of new NPLs. Simultaneously, it is important to emphasize that there was not noticed any significant inflow of new NPLs (see Figure 3), which could crucially change the existed picture of NPL stock and movements in Serbian banking sector.

Figure 3. Channels of NPL reduction since NPL Strategy adoption



Additionally, in June 2016 the Executive Board of National bank of Serbia adopted the Decision Amending the Decision on the classification of bank balance sheet assets and off-balance sheet items, which envisages introduction of NPE definition in line with technical standards published by EBA. In accordance with this decision the bank shall classify the exposures as NPEs, if one of the following conditions has been met:

a) the borrower is more than 90 days past due on such exposure;

b) the bank's assessment of the borrower's financial position and/or creditworthiness indicates that the borrower will not be able to settle its obligations in full without realization of collateral, regardless of whether the borrower meets its obligations timely or not;

c) default on obligations has occurred, in accordance with the decision governing bank capital adequacy;

d) the amount of impairment of the exposure has been determined through assessment on an individual or group basis, except for exposures where such amount cannot be identified at the level of a single receivable within a group (National bank of Serbia, 2018b).

The first regular reporting date for NPEs was December 31, 2016. Introduction of NPE definition did not revoke reporting requirements in accordance with the previous NPL definition, as well. Parallel reporting has been retained to ensure continuity of NPL data series and it is obvious downward trend in NPE as it is already confirmed for NPLs.

CONCLUSION

Extraordinary high level of NPLs in Serbia and CESEE countries represented large threat for future survival of financial systems. As it was clear that high level of NPLs is not sustainable on long-run, the crucial point was time framework in which NPLs issue was recognized and the resolution starts with selected method. Applied method of NPL resolution differs across countries, but obviously those strategies gave the positive final result impersonated in rapidly decreased gross NPL ratio in all observed countries. By focusing on market approach of NPL Resolution and regulatory changes directed to further strengthening of bank's capacities, in Serbia were created conditions for bank's balance sheet "cleaning" and opening the path for new lending, i.e. growth of credit and economic activity in the Republic of Serbia. In that way are justified joint efforts of Government of Republic of Serbia, National bank of Serbia and all other relevant participant in removing of main causes and drivers for NPL increase that were inherent in the past.

As central banks and other regulatory bodies (such ECB) realized the importance of "health" and secure banking system, they focused on prevention and correction of anomalies which could negatively effect on long run stability. However, high portion of NPLs is an indicator of inadequate loan portfolio quality, so regulators conducted in previous period various exercises regarding asset quality review, with main objective to analyze the stability of financial systems. Results of asset quality review showed the stability of observed banking systems and provided valuable help for further improvements in the process of NPLs resolution. NPLs are not problems of a financial system alone, but a drag on the overall economy as well, since their high share negatively affects credit activity, which may slow down or postpone economic growth. Serbia and group of CESEE countries efficiently resolved the NPLs issue and significantly decreased their level on more than satisfactory level, creating opportunity for credit lending growth in near future and prospective development of banking sectors.

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FINANCE, BANKING AND INSURANCE
Scientific - review paper

FOREIGN BANKS - DRIVERS OF EFFICIENT DEVELOPMENT OR YET ANOTHER PROBLEM?

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Abstract:
Other than their capital, foreign banks also brought their paradigm of efficient business into our economic system, thus strengthening Serbia's banking system. The aim of this paper is to point out the efficiency trends of the observed banks within the period from 2010 to 2017 using efficiency indicator ratios. The criterion for selecting banks is the amount of net balance sheet assets. By comparing the financial statements of the selected banks, as well as comparing the changes in the number of banks, the employees and the amount of balance sheet assets, with the achieved results, we gain insight into the overall banking image of our country, as the obtained values approximate an image of the entire Serbian banking system. They have been empirically calculated, graphically presented and commented upon in order to create, in a clearer way, an image of the efficient business operation of the banks in Serbia.

Keywords:
banking sector, foreign banks, efficiency indicator ratio, balance sheet, income statement

INTRODUCTORY CONSIDERATIONS

The subject of the research in this paper is a comparative analysis of the publicly published regular annual income statements of the 10 largest banks operating in the Republic of Serbia, using efficiency indicator ratios. The criterion by which the banks were selected is the amount of net balance sheet assets, and as such, we used the data from the balance sheets of the following banks:

- Banca Intesa a.d. Belgrade
- Komercijalna banka a.d. Belgrade
- Unicredit Bank Serbia a.d. Belgrade
- Raiffeisen Bank a.d. Belgrade
- Societe Generale bank Serbia a.d. Belgrade
- AIK banka a.d. Belgrade
- Eurobank a.d. Belgrade
- Erste Bank a.d. Novi Sad
- Banka Postanska stedionica a.d. Belgrade
- Vojvodjanska banka a.d. Novi Sad

As the balance sheet assets of the observed banks amount to about 75% of the total balance sheet assets, the obtained values approximate the performance of the entire banking sector of the Republic of Serbia to a good extent. According to this criterion, the largest bank in Serbia is Banca Intesa a.d. Belgrade with a market share of around 15%. The survey was done on the basis of comparing the balance positions using the program Microsoft Excel. The aim of the research is to

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indicate the significance of the relations of the positions in the financial statements, so that the obtained results are usable in terms of entering into future business and financial relations.

LITERATURE REVIEW

There is a continuing dilemma regarding which banks are more successful - those that put emphasis on efficiency and permanently, carefully control their operating expenses in order to lower them as much as possible or those that place emphasis on profitability and strive to achieve the best possible returns on invested funds for their owners. To this moment, there is still no consensus on which performance assessment system is better, and whether the highest priority should be given to the concept of profitability or efficiency. Addressing this question Berger et al. (2017) inform the current debate about the efficacy of different ways of intervening and dealing with distressed banks and help fill in a gap in the literature that lacks empirical evidence on whether regulatory interventions and capital support are beneficial. Ljumovic et al. (2015) consider that in the 21st century, a good banker is the one who can provide the client with a service or advice in the right moment, i.e. the one who can satisfy the financial appetites of his clients. According to Kalas and Rakita (2017), when it comes to the efficient operation of banking organizations, the principles of liquidity and profitability are imposed as one of the most important principles of their operation. Mirkovic et al. (2016) say that when it comes to regulatory requirements, it is necessary to emphasize that the main goal of introducing Basel standards (especially Basel III), and improve the quality of regulatory capital and strengthen capital requirements, as well as to shift the focus to share capital and stricter requirements. In order to understand business performance more precisely, experts from the banking sector have developed and designed many indicators. According to Dasic (2015), besides the achievement of the profits, the goal of a bank is to provide a continuous growth and development the market. As the nature of the operation of banks differs fundamentally from the operation of companies in the non-financial sector, financial statements are also different, and their structure and content must reflect all of the specifics of banking business operations. Mishkin and Eakind (2012) say that deteriorating balance sheets and tougher business conditions lead some financial institutions into insolvency, when net worth becomes negative. Andjelic and Vesic (2016) confirm that a large number of studies related to the assessment of bank performance are focused on indicator ratios. The same author believes that when considering the decision of whether to provide credit financing, a commercial bank is most interested in first finding out the liquidity indicators of the company.

THE CURRENT STATE OF THE BANKING SECTOR IN THE REPUBLIC OF SERBIA

Lin and Wang (2018) say that intensified financial disintermediation, liberalization of interest rates, and development of online banking have reduced the profit margins of the traditional lending business in commercial banks. Although during the financial crisis the banking sector in Serbia was exposed to an intense shock, thanks to the relatively conservative policy of the Central Bank of Serbia, the sector was sufficiently resistant and the accumulated reserves were sufficient for handling all of the current and potential future negative effects of the financial crisis period. Racic and Barjaktarovic (2017) consider that the reaction of the banks that followed in response to the financial crisis, led to the decrease in the volume of placements, the growth of liquidity and a decrease in active and passive interest rates. In order to present and gain a better insight into the current situation of the banking sector in the Republic of Serbia, in this section of the paper an overview of the number of banks, the number of the employees in the banking sector and a review of balance sheet assets are presented. The above-mentioned review is systematized according to the ownership structure of the bank and it was done for the period from 2010 to 2017, according to analyses and reports from the Central Bank of Serbia.

The number of banks in the banking sector

At the beginning of the process of restructuring the financial system in the region of Central and Eastern Europe, the dominance of the banks with majority state ownership has been noted. Dimic and Barjaktarovic (2017) noted that the domestic owners did not take adequate care of their property, which resulted in a change in the ownership structure and an increase in the shares of foreign investors in the financial sector of the region. At the end of 2010, 33 banks operated in the banking system of the Republic of Serbia, as can be seen in Table 1.

Table 1. Overview of the banks in Serbia according to their type of ownership structure for the period of 2010-2017

YEAR / Number of banks	2010	2011	2012	2013	2014	2015	2016	2017
Banks owned by domestic entities	12	12	11	9	8	7	8	9
State-owned	8	8	8	6	6	6	6	6
Privately owned	4	4	3	3	2	1	2	3
Banks owned by foreign entities	21	21	21	21	21	23	22	21
Italy	2	2	2	2	2	2	2	2
Austria	4	4	3	3	3	3	3	3
Greece	4	4	4	4	4	4	4	4
France	3	3	3	3	3	3	3	2
Others	8	8	9	9	9	11	10	10
TOTAL	33	33	32	30	29	30	30	30

Source: Calculations and presentation by the author based on the data provided by the NBS

Of the total number of banks, 12 are owned by domestic entities, while 21 banks are in foreign ownership. Foreign banks come from 11 different countries and with a share of between 70% and 75% in the total assets, capital and the employees prevail in our banking sector. Until 2015, the number of foreign banks remained unchanged, while the total number of banks is slowly decreasing, due to the decrease in the number of banks owned by domestic entities due to the revoking of work permits by the Central Bank of Serbia, because their operations proved inefficient, illiquid and irrational. Thus, at the end of October 2012, the Central Bank of Serbia revoked the license of Nova Agrobanka a.d. Belgrade, on the grounds that within the stipulated deadline of 6 months after obtaining the work permit, it did not perform the harmonization of operations in the area of the capital and indicators of operations with the provisions of the Law on Banks. In April 2013, the Central Bank of Serbia revoked the license of Razvojna banka Vojvodine a.d. Novi Sad. The change in the trend of the number of banks only starts by the end of 2014, when the Central Bank of Serbia granted an operating license to Mirabank a.d. Belgrade, while Bank of China a.d. Belgrade got their operating license in 2016. In 2014, KBC Bank a.d. Belgrade changed its business name to Telenor Bank a.d. Belgrade, and in 2015 Cacanka banka a.d. Cacak changed its business name to Halkbank a.d. Belgrade, further reducing the number of domestic banks.

Number of the employees in the banking sector

By the end of 2010, the banking sector employed a total of 29,887 people. The downward trend in the number of people in the banking sector started in 2009 and continues to this day. From Table 2 we see that the number of the employees is reduced both in domestically owned banks and in foreign-owned banks.

The assets of the banking sector

The total net assets of banks in 2010 amounted to RSD 2,534 billion. From that time onwards, we can see the trend of growth in the assets of the banking sector, as shown in Table 3. Banks owned by foreign entities exhibited faster growth of assets, but despite the decrease in the number of banks, growth in total assets was also present in the banks owned by domestic entities. In terms of shares in the total assets, the banks owned by foreign entities prevail in the observed period, with more than 73% of the net assets of the total assets of the banking sector in Serbia.

The observed period ends with an increase in net balance assets by slightly more than 20% compared to the beginning of the observed period. As for the concentration of the banking sector, given the large number of banks with a small share in the total assets, but also in the total incomes, loans and deposits, it can be said that the sector is largely fragmented. Miljkovic and Ristanovic (2017) consider that the main cause of the growth of balance sheet assets is the increased intensity in lending activity. On the other hand, the highest priority goal of the banks within the Serbian economy, as is the common practice in the modern market, was to achieve a satisfactory profit rate per unit of capital.

Table 2. Overview of the banks in Serbia according to their number of their employees for the period of 2010-2017

YEAR	2010		2011		2012		2013		2014		2015		2016		2017	
Number of the employees	Number	Share (%)	Number	Share (%)	Number	Share (%)	Number	Share (%)	Number	Share (%)	Number	Share (%)	Number	Share (%)	Number	Share (%)
Banks owned by domestic entities	8750	29.3	8705	29.8	8002	28.2	7031	26.7	6383	25.4	5752	23.7	6056	25.2	6297	29,0
State-owned	7305	24.4	7216	24.7	6930	24.4	5924	22.5	5621	22.4	5142	21.2	5259	21.9	5240	22,4
Privately owned	1445	4.8	1489	5.1	1072	3.8	1107	4.2	762	3.0	610	2.5	797	3.3	1521	6,5
Banks owned by foreign entities	21137	70.7	20523	70.2	20392	71.8	19349	73.3	18723	74.6	18505	76.3	17965	74.8	16581	71,0
Italy	4015	13.4	4177	14.3	4142	14.6	4085	15.5	4114	16.4	4155	17.1	4279	17.8	4182	17,9
Austria	4260	14.3	4227	14.5	3656	12.9	3514	13.3	3396	13.5	3397	14.0	3239	13.5	2601	11,1
Greece	5934	19.9	5364	18.4	5267	18.5	5116	19.4	4894	19.5	4412	18.2	4223	17.6	3392	14,5
Franca	2525	8.4	25888	8.9	2698	9.5	2637	10.0	2596	10.3	2558	10.5	2557	10.6	2285	9,8
Others	4403	14.7	4167	14.3	4629	16.3	3997	15.2	3723	14.8	3983	16.4	3667	15.3	4121	17,7
TOTAL	29887	100	29228	100	28394	100	26380	100	25106	100	24257	100	24021	100	23342	100

Source: Calculations and presentation by the author based on the data provided by the NBS

Table 3. Overview of the net balance sheet assets in the banking sector of Serbia for the period of 2010-2017.

YEAR	2010		2011		2012		2013		2014		2015		2016		2017	
Assets of the bank expressed in billions of RSD	billions	Share(%)	billions	Share(%)	billions	Share(%)	Billions	Share(%)	billions	Share(%)	billions	Share(%)	billions	Share(%)	billions	Share(%)
Banks owned by domestic entities	671	26	685	26	716	25	730	25,6	758	25,6	729	23,9	756	23,3	795	24,2
State-owned	454	18	472	18	522	18	534	18,8	571	19,3	550	18,0	561	17,3	539	16,4
Privately owned	217	,9	213	,8	194	,7	196	6,9	187	6,3	179	5,9	195	.6,0	256	7,8
Banks owned by foreign entities	1862	74	1965	74	2163	75	2117	74,4	2210	74,5	2319	76,1	2486	76,7	2498	75,8
Italy	526	21	591	22	657	23	679	23,8	738	24,9	796	76,1	884	27,3	919	27,9
Austria	469	18	493	19	449	15	429	15,1	440	14,8	453	14,9	494	15,2	411	12,5
Greece	427	17	393	15	426	15	409	14.4	418	14,1	395	13,0	403	12,4	328	9,9
France	202	8	263	,10	287	10	299	10,5	304	10,2	316	10,4	327	10,1	350	10,6
Others	238	,9	225	8	345	12	301	10,6	310	10,4	359	11,8	378	11,7	490	14,9
TOTAL	2534	100	2650	100	2880	100	2846	100	2969	100	3048	100	3242	100	3293	1100

Source: Calculations and presentation by the author based on the data provided by the NBS

EMPIRICAL ANALYSIS OF EFFICIENCY, RESULTS AND DISCUSSION

The analysis of our banking sector was carried out for the period from 2010 to 2017, on the basis of the financial statements, i.e. the reports on the financial position and reports of the total achieved result of the banks collected from the website of the Central Bank of Serbia. It is a known rule that when calculating indicator ratios, the calculation of the average of the items from the balance sheet is done based on the values from the beginning and the end of the year. By using the average value in the analysis of a longer period of time the movement dynamics of the indicator are ironed out. In our analysis, average values were not taken for the indicators that use items from the balance sheet because the analysis was done for 7 years and the basic idea was to make the movement dynamics of the indicator more pronounced. According to Laeven, Ratnovski and Tong (2016), we find strong evidence that systemic risk increases with a bank size. Ljumovic and Knezevic (2011) say for the analysis of the efficiency of a bank's operations, numerous indicators that are classified into two groups are used: indicators of noninterest expenses and indicators of noninterest income.

Natoi and Spulbar (2016) belive that the results show that an increase in the non-interest income or changes in the structure of income will reduce the operating stability of the banking industry.

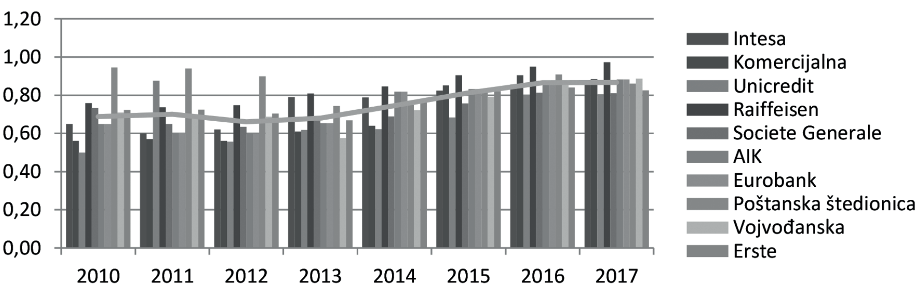
In this part of the paper, a graphical representation of the calculated indicator ratios with comments is given. In order to achieve more clarity, the charts show the values of the indicator ratios for the 10 observed banks. A particular chart is related to the particular indicator ratio and shows a graphical representation of the value of that indicator ratio for those banks within the observed period. In addition to the individual values of the indicator ratios, their average value is also shown, in order to better understand the performance dynamics of banks.

The first indicator of noninterest expenses is shown in Graph 1 and is calculated using the following formula:

$$(\mathrm{I}) = \frac{\text{noninterest expenses}}{\text{total expenses}} \qquad (1)$$

From the graph we see that the share of noninterest expenses in the total operating expenses in the observed period shows a slight increase. Since there are no significant deviations from the average, banks have an increasingly smaller share of expenses based on their business, the collection of deposits. The increase in noninterest expenses is a consequence of the expenses on the basis of modern services provided by the bank to its clients, but these costs are for a good part on the rise, also due to the bank's unsecured loans.

Illustration 1. Share of the noninterest expenses in the total operating expenses



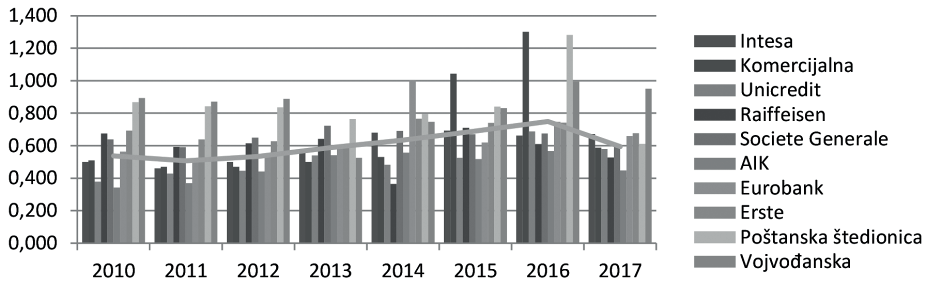
Source: Calculations and presentation by the author based on the data provided by the NBS

The second indicator of noninterest expenses is shown in Graph 2 and is calculated using the following formula:

$$(\mathrm{II}) = \frac{\text{noninterest expenses}}{\text{total income}} \qquad (2)$$

On average, about 60% of the total income is spent on noninterest expenses. Given that noninterest expenses represent the value of all of the expenses of the banks, besides interest expenses, we can conclude that banks are not heavily indebted either to each other or to the Central Bank, but also that they are not able to collect new deposits.

Illustration 2. The share of noninterest expenses in the total income

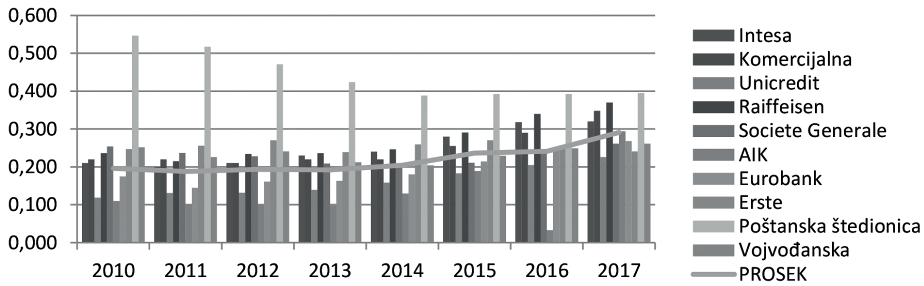


Source: Calculations and presentation by the author based on the data provided by the NBS

Noninterest income indicators are made up by the first ratio as the ratio of noninterest income and the total operating income, and the second ratio as the ratio of noninterest income and average total assets. The first indicator of noninterest income is shown in Graph 3 and shows stable movement, meaning that during the observed period there were no significant changes in the structure of the income of the banks.

In total income, slightly more than 25% is represented by noninterest bearing income, meaning that in most banks, income based on their core activity, loan approval, is dominant. The exception is Postanska stedionica a.d. Belgrade, which in 2010, 2011 and 2017 realized about 45% of the noninterest income.

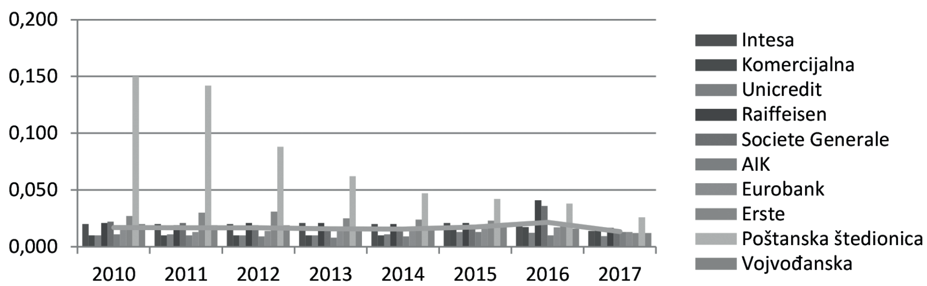
Illustration 3. Share of the noninterest income in total income



Source: Calculations and presentation by the author based on the data provided by the NBS

The second indicator of non-interest income shows the share of noninterest income of the average total assets, and in Graph 4 we see that this share is almost constant during the observed period, with a tendency of growth in 2016, after which it saw a slight decline. A large amount of noninterest bearing income is realized by Postanska stedionica a.d. Belgrade, because the values of this indicator for other banks are far below its values.

Illustration 4. Share of the noninterest income in the total assets



Source: Calculations and presentation by the author based on the data provided by the NBS

CONCLUSION

Roganovic et al. (2017) stated that today, in the conditions of globalization, the economic interdependence of states is greater than ever before. During the transition process, as Serbia opened up towards foreign capital, significant owner transformations and changes in the ownership structure of banks have occurred. Foreign banks became the owners of a portion of state-owned banks, and the number of domestic-owned banks decreased during the observed period. The Central Bank of Serbia has withdrawn its operating licenses, primarily due to the conduct of inefficient and irrational business policies. However, the efficiency of the banking sector has been improved as the foreign banks transferred their paradigm of efficient business along with their capital. Despite the downward trend in the number of the employees and the number of banks, we can see that the banking sector's assets have exhibited a trend of growth, which confirms that, among other things, banks are operating efficiently.

After calculating and graphically representing the indicator ratios, we get an insight into the financial performance of banks in our banking sector. According to Lukic and Trsic (2015), higher efficiency ratios indicate a lower risk, but also lower profitability of the bank, and vice versa. Vukosavljevic et al. (2016) believe that trends in unsecured loans show that banks could have a very big problem, and Kalas and Rakita (2017) consider that although the primary objective of banks is profit, it is necessary for banking organizations to function as economic flows by enabling the availability of cash to business entities and other participants present on the market. The problem in the operation of banks occurs in the collection of their loans because, due to the slowed economic activity, clients are increasingly less able to timely and fully settle their obligations. However, through everyday innovations in the banking sector, banks are attempting to improve their efficiency, the ultimate effect of which is profitability, as the main business motive of banks is the achievement of the greatest profits possible.

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FINANCE, BANKING AND INSURANCE
Professional paper

MONETARY AND TECHNOLOGICAL ASPECTS OF THE EMERGENCE AND THE DEVELOPMENT OF CRYPTOCURRENCIES

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Abstract:

An emergence and a rapid development of cryptocurrencies have its monetary and technological background. From the monetary aspect, cryptocurrencies emerged as one of the solutions to the consequences of the last major World financial and economic crisis. To address the consequences of this crisis, the solution was the expansive monetary policy on the global level. Increasing the quantity of money in circulation leads to the fall of its value, and makes depositors search for the solutions for preserving the value of savings, apart from gold and other precious metals, outside the existing monetary system. In addition to this investment opportunity, the nature of cryptocurrencies as an easily transferable payment method, without an intermediary, further increased their attractiveness. From a technological point of view, the emergence of cryptocurrencies was enabled and supported by the emergence of a blockchain technology as a distributed database. This technology represents a decentralized, publicly available database containing registers of asset and transactions in the so-called peer to peer network run by globally connected computers without the impact of any state institutions or powerful individuals and corporations. Therefore, there is a common belief that transactions with cryptocurrencies are anonymous and, thus, often used on the black market. However, these transactions are only partially anonymous. Governments, as well as other users, may check each and every bitcoin address, the amount of money on these addresses, and the flows of money between those addresses through the Internet. There are also browsers called "blockchainexplorers", on the Internet, where after entering the address, it is possible to obtain information about the cash balance and all incoming and outgoing transactions.

Keywords:

cryptocurrency, blockchain, banking, security, bitcoin

INTRODUCTION

The emergence of cryptocurrencies went relatively unnoticed and in the beginning it was not given special attention. They were considered more as the method of payment in trading illicit goods and services as well as subject of speculative financial activities. There was hardly any comment on this phenomenon in the academic circles. Over time, certain academic works that deal with different aspects of cryptocurrencies have appeared, but their number is still relatively small compared to other academic topics (Jovic, Kunjadic, 2017). The first cryptocurrency, bitcoin, was launched in 2009. Bitcoin is a digital, decentralized cryptocurrency. It is digital because it exists only in a digital form and does not exist as a banknote or in the form of coins. It is not governed by any central bank or any other institution. It is exclusively managed by its users. Therefore, it is characterized as a decentralized cryptocurrency (Jovic, Kunjadic, 2016). The term "crypto" was established because cryptography was used in verifying transactions and creating new currency units. This cryptocurrency is not based on the golden foundation, it has no country of origin and there is not any state or bank organization behind it. Today, the legitimate paper and electronic money does not represent a real value, but a symbol of

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exchange supported by central banks with their authority. Therefore, virtuality does not represent the main difference between conventional and crypto currencies, but the decentralization of cryptocurrencies does. The basic partition of all cryptocurrencies relates to the fact whether they belong to a decentralized or centralized blockchain system. A decentralized system or a peer to peer system functions in such a way that each individual computer is an integral work unit without the authorization by any central point. There is not any individual, bank or government of any country behind these systems. An important feature of these systems is the anonymity of transactions, whereas each transaction is broadcast online and all users have an insight into the validity and execution of the transaction itself, but no one has a personal insight into who sent it to whom and where a certain number of coins is. Counterfeiting is made difficult by the user's digital signature, a private and a public key, and a combination of the transaction message itself. In this way it is achieved that everyone has control, and no one has the power (Jovic, 2014b). Centralized systems function in such a way that behind them there is a group of people who, by their credibility and seriousness, guarantees for the success of the cryptocurrency. In these systems, the identity of the person who holds the currency is known through the KYC procedure - know your customer. In this way, by checking, cryptocurrencies can be introduced into the legal business flows and taxation and avoid the possibility of misuse and concealing the origin of money.

MONETARY ASPECTS OF EMERGENCE AND DEVEOPMENT OF CRYPTOCURRENCIES

From the monetary aspect, cryptocurrencies represent one of the answers to the repercussions of the major world financial and economic crisis. As a resolution of the crisis repercussions, central banks of the developed countries are implementing an expansive monetary policy. This policy aims at increasing the amount of money in circulation which leads to its devaluation. Deposits in the banks are being devaluated and the savings lose their attractiveness. When there is only one country whose currency is being devaluated by its expansive monetary policy, the depositors may find a solution in exchange for savings in another stable currency. However, when such a monetary policy is applied on the global level for a longer time period then, there is no such a solution and the exit must be searched outside the existing monetary system. As always, the solutions to these problems lie in the gold and silver with the aim of preserving value, but, on the other hand, precious metals are complicated for transfers and payment. Moreover, the phenomena of savings confiscations are not unusual in the history, whether in gold or in the national currency. Therefore, there is a real need for easily transferable means of payment which may be used anywhere in the world. Cryptocurrency, by its decentralized nature represents a possible solution to a problem. The state has no monopoly over its supply nor it can use coercion of any kind. Even on the presumption that a state confiscates a cryptocurrency, it can not use it if it does not hold a code which protects an electronic wallet. In a conventional monetary system the government has a monopoly over emission of money which it can use to finance its expenditures through inflation taxation, whereas, the expenses are eventually taken by citizens, primarily by depositors.

On the contrary, all cryptocurrencies have preprogrammed tempo of their construction, so that their amount in circulation is always a known fact, providing greater transparency and predictability comparing to the conventional currencies. Cryptocurrencies simplify transfer of money. The conventional money transfer system involves an intermediary that charges a commission for money transfer, and the amount of the commission increases the risk of a country where the money is sent. By using cryptocurrencies, intermediaries are completely excluded considering the transfer of money. The expenses of sending cryptocurrencies are equal as the expenses of sending any information, actually, the transfer of money becomes accessible as sending an e-mail. The presence of any bank or transfer agent is needless. Internet access from a cell phone or another device is sufficient. Many websites dealing with exchange of cryptocurrencies can be provided with the currency risk protection by exchanging cryptocurrency for the desired conventional currency. As a method of payment, cryptocurrencies are in its initial stage as there are still rare places that accept cryptocurrencies as a regular means of payment, but the tendency of expanding network does exist. Besides, cryptocurrencies are used, today, for long term investments due to their tendency of increasing value, as well as for speculating activities because of expressive volatility of their prices on cryptocurrencies stock exchange (Jovic, 2014). It is assumed that, on a national level, cryptocurrencies will not be able to take primacy over conventional currencies, in the first place, due to a high resistance of central banks. Yet, the faster growth is possible on the global level. Globally, cryptocurrencies could run towards an alternative global currency, but also a better means for calculation and payment than Special pulling rights among countries which would greatly contribute to the future of cryptocurrencies.

Supporters of cryptocurrencies believe that governments might take part in issuing their cryptocurrencies while streaming the monetary policy towards satisfying needs of market participants and not the government. Some countries, like Canada, have already started emission of their version of cryptocurrencies, while certain banks have associated in creating common cryptocurrencies intended for public. However, there will be significant differences in features of suggested currencies. Bitcoin and other cryptocurrencies are featured by anonymity, whereas in the bankers cryptocurrency, anonymity will disappear as by the bank rules, everything will be under control, such as who the currency belongs to, where it comes from, who has bought or sold what, where and for how much.

Designing a banking digital currency should enable the banking system to become more efficient and cheaper. This leads to the conclusion that it is the question of the day when multinational companies and banks themselves will begin to insist on using cryptocurrencies themselves in order to save large amounts of money on the costs of transfer. Real expansion of cryptocurrencies use may occur when they are created by individual states, their central banks or a group of significant commercial banks. Then, the focus of using cryptocurrencies can be shifted from the population sector to the economic and banking sector, which can mark the beginning of a completely new monetary era.

Since cryptocurrencies are based on the blockchain infrastructure with the basic characteristic that once entered, data cannot be deleted, thus, in addition to monetary transactions, a revolutionary application may occur in other spheres of society such as records in the catastre, records in a medical card, exercising copyrights in the music and video industry etc.When considering the future of cryptocurrencies, we should look into their advantages and disadvantages. There are several great advantages compared to conventional currencies. Cryptocurrencies do not require an intermediary, so there are no commission fees, and at the same time transactions are anonymous. On the other hand, the benefits also result in disadvantages because, by the nonexistence of a controlling authority, the return of money in case that the seller does not deliver the goods or services paid cannot be regulated by law. Some statistics say that in the last few years about 45% of the bitcoin transactions ended with such a fraud. Such problems indicated the development of online exchange offices and the first ATMs where a bitcoin can be exchanged for the standard currency. Wallstreet does not doubt the future of cryptocurrencies as they claim that digital money largely replaces gold, already, especially with younger investors. In these circles, there are opinions that it is only a matter of time when and which crypocurrency will appear officially on the world stock exchanges. Despite the optimistic thinking that at some point bitcoin or some other cryptocurrency might replace the dollar in international transactions, many economists warn that cryptocutrencies can represent a new tulip bubble.

TECHNOLOGICAL ASPECTS OF EMERGENCE AND THE DEVELOPMENT OF CRYPTOCURRENCIES

There is a common belief within public that transactions with cryptocurrencies are anonymous and are therefore often used on the black market. However, these transactions are partially anonymous. Through the Internet, governments, as the other users, can check each bitcoin address, the amount of money on these addresses, and the flows of money between these addresses. There are also “blockchainexplorers” browsers on the Internet, where, after entering the address, one can obtain information about the cash balance and all incoming and outgoing transactions.

It is not possible to make any data changes on the transactions, nor their deletion, addition or any other type of forgery. In this way, fraud is prevented. Secret state information, bank accounts and other centralized data may be hacked. However, Blockchain hacking implies hacking the whole chain of blocks, which is, in fact, impossible. Therefore, this way of storing data in the future can be widely used which goes beyond the era of the cryptocurrencies. In addition to its application as means of payment, Blockchain technology can be used in many areas, for example, for the determination of ownership of shares, fair voting in elections, games of chance, registration of property, copyright, health, etc.

In addition to Blockchain technology, there is also a new concept based on the mathematical mod called Directed Acyclic Graph (DAG). The model is derived from graph theory that uses mathematical structures for modeling relationships between objects. In this model there are no blocks, but transactions are linked by a strictly defined scheme. The concept is called Tangle and its operation is based on a network of controllers of devices connected to the Internet or the Internet of Things (IoT).

Nodes in the process are the devices themselves while the transactions are done by exchanging signals between the devices. One of the fundamental differences is that with using the DAG model processes can be branched in all directions as well as towards existing entities, while in Blockchain, this process is one-way and the process cannot be returned to the existing block. The rule of this system is that every new transaction that has been created - A, confirms two old - B and C.

Verification can also be done indirectly. In the above example, if there is a transaction D, which confirmed A, then it simultaneously confirms the conditional transaction E which has been confirmed by B. The number IoT devices has increased from about 6 billion in 2016 to over 10 billion this year, 2018, which illustrates the degree of network expansion. Although the devices themselves have modest processor capabilities, their number allows the execution of a large number of simultaneous transactions.

In the blockchain system as a support to the Bitcoin cryptocurrency, an asymmetric cryptographic system supported by PKI (Public Key Infrastructure) was adopted as the cryptographic solution. The PKI system implies that CA (Certification Authority), as a third party of trust, generates a pair of keys, public and secret. The secret key is delivered to the owner over the secure channels and never leaves the token or other device on which the owner of the private key keeps his private key. At the same time, CA publicly publishes a public key of the user that is available to all other participants in the transaction.

It is very important to note that a couple of keys must be generated in one place due to a certain mathematical interdependence of the public and the secret key. At the point of generating a pair of keys at the time of creation, the entity that generates the keys is familiar with both keys. In this way, CA, as a trusted entity, actually has all the information about the participants in the transactions and it is possible to absolutely authentically create the identity of any participant. Activities of CA are regulated by strict regulations. The basic question that arises in the virtual world is: Who is, actually, CA? Which regulation regulates his work? And in the end: Who is responsible for controlling the work of CA?

CONSEQUENCES OF CURRENCY DIGITALIZATION

Cryptocurrencies provide free transactions through the blockchain technology, which represents a great saving in money transfer costs. Avoiding high fees for money transfers is a tangible material reason for the increasing use of cryptocurrencies. In addition to being a technological innovation, cryptocurrencies become another method in a series of sources of financing that becomes interesting to large investors. Initial Coin Offerings - ICO becomes an alternative but still unregulated method that enables investing in blockchain technology. The number of ICOs is growing steadily, and their revenues have already exceeded hundreds of millions of dollars.

Bitcoin, as the first cryptocurrency, has already become an instrument of hedging for periods of instability and has grown into a legitimate alternative to gold. The main obstacle to the adoption of bitcoin as a significant alternative to gold is the high volatility of its value. The current situation in the global financial markets is characterized by low, even negative interest rates, so there is not much choice for capital investors. This is a situation that is favorable for investments in cryptocurrencies, besides already mentioned ease of trading at the global level, it still misses the tools for investing and keeping cryptocurrencies, all contributing to the fact that investing and trading in cryptocurrencies is still on the margins of the global financial market. Further behavior of institutional investors and hedge funds will determine the direction of the development of cryptocurrencies. The development of new protocols and blockchains and the ease of financing through the ICO give cryptocurrencies the nature and attractiveness of entrepreneurial ventures and the current global lack of innovative entrepreneurial ideas also contribute to this.

The significance of the blockchain technology that lies at the core of the cryptocurrencies significantly exceeds the monetary and financial sphere. It is a kind of revolutionary technology that allows the credibility of a database whose historical data cannot be changed either from inside or from outside. It is a system in which it is known who exactly and when they signed a certain entry into the database, where every entry into the database is verified by all the other participants in the system before the entry permanently becomes part of the database. Because of these facts, this technology can completely reform the financial sector. Depending on the amount sent to various transaction systems, the commissions range from 3 to 12% with the mandatory waiting for the money to appear in the account, and waiting varies depending on where the money is sent from. Economic logic predicts that cheaper and faster transactions via digital money will be inevitable in the future.

This technology could greatly contribute to the improvement of state governance model, as it is based on the immutability of information or the non-bribery of the system. What is applicable are digital contracts, digital signatures, reduction of paperwork, land ownership registers, people identification, driving automation and insurance field, abolition of seals, queuing, unnecessary procedures, etc. These are all the areas in which the application of blockchain technology could make a major contribution to reducing costs in the financial sector, increasing efficiency of government's administration at all levels and in different areas, and contributing to the development of the economy as a whole.

Moreover, we could be aware of the fact that, as technological developments have recently led workers in factories to unemployment, replacing them with machines that could perform different operations better and more efficiently than humans, likewise, the blockchain technology can leave many officers and administrative workers out of work. Finding balance between efficiency and savings of this technology on the one hand and social costs on the other will certainly have to take place, therefore, opening a series of sensitive issues for all countries of the world (Jovic, Kunjadic, 2017).

A legal position of the cryptocurrencies differs considerably from country to country and varies in its field of use from indirect treatment as a currency to the treatment as taxable property. The lack of uniform regulations and rules which regulate transactions in cryptocurrencies has its consequences. On the one hand, their disadvantage, to a certain extent, represents a benefit by providing independence from political and economic centers of power, but on the other hand it opens up a polygon for speculation and illegal criminal activity. Since the transactions in cryptocurrencies are independent of formal banking systems, the realization of profit and taxation system is virtually impossible to track, and anonymity itself makes it a convenient money laundering tool.

CONCLUSION

The analysis of the mathematical apparatus that supports the cryptography of crypocurrencies revealed undisputedly that the generation of cryptographic keys must be done in one place that is CA. From the above, it can be concluded that there is an entity that controls the generation of cryptographic keys, and, therefore, controls the entire cryptographic system.

Starting with such assumptions, two possible theories about the purpose of the cryptocurrencies can be made. On the one hand, it can be assumed that, behind the development of cryptocurrencies, there are powerful countries in the world that enormously increased their state debts and money supply during pre-crisis and crisis times. The emergence and purchase of cryptocurrencies leads to the sterilization of surplus of conventional money, and in time, the debts in conventional currencies can be converted into debts in cryptocurrencies. Since the cryptocurrencies are not regulated in the same way as the conventional currencies are, the various nation states are not in any way prevented, when there is a significant portion of their debt in cryptocurrencies, to proclaim cryptocurrencies an illegal payment method intended for money laundering and criminal activities. In this way, they would solve part of the state debts overnight.

On the other hand, it might be that this is a great monetary war for defense or forming the new standards in international payments. It is known that the BRICS countries are trying to establish their system of mutual payments beyond the world's leading currency and that it is those countries who are taking the lead in the development and use of cryptocurrencies. It is possible that they intend to break the primacy of the world's leading currencies through the cryptocurrencies. However, it is possible that the relevant factors behind the world's leading currency today are also creating a leading global cryptocurrency that could become an accepted standard of payment in the future and therefore retain the primacy in the world monetary market in the new conditions.

The behavior of the Central Banks in the world is important for the future of cryptocurrencies. From their point of view, it is desirable to have only one means of payment in a certain territory, as this gives a stronger effect for the monetary policy. Some of the central banks are considering introducing their own cryptocurrencies, because, essentially, the digital currency of the Central Bank would be like a banknote, only in digital form. For the population and the economy, this can bring significant benefits, as the digital currency does not charge transaction fees and interest rates such as, for example, credit cards, nor there is any greater processing costs as in the case of banknotes. What the Central Banks can offer as an advantage over decentralized cryptocurrencies is the fixed nominal value of the digital currency. Potentially strict regulations of Central Banks would provide additional stability to new cryptocurrencies and reduce the level of sensitivity to market trends, but, on the other hand, they would influence the basic postulates of existing cryptocurrencies, taking away one of their essential characteristics which is the purpose why they were created in the first place.

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FINANCE, BANKING AND INSURANCE
Professional paper

THE IMPORTANCE OF THE FOREIGN CURRENCY CLAUSE IN FOREIGN BUSINESS TRANSACTIONS

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Abstract:

The principal purpose of a foreign currency clause in economic and financial transactions is to preserve a real value of business operations from the moment of contract conclusion until their completion. There are three types of hedging instruments: monetary clause, index clause and sliding scale clause. The issue of foreign currency clause is much more complex when business operations are concluded with foreign partners due to different legal regulations and, in some cases, political systems. It becomes even more complex in case of long term and high value contracts. It could become especially complicated in case of cancelling a contract. Therefore, defining a currency clause as well as the means (and institutions), local and international for hedging is of utmost importance. It is also significant that the parties agree on competent courts and laws according to which disputes shall be settled. In this paper we will give examples from practice.

Keywords:

foreign currency clause, loan credit, change of circumstances, contract cancellation, caselaw

INTRODUCTION

Risk free business operations in an era of globalization and more frequent crises, like the last one in 2008 which is not over yet, are not possible. However, the risk should be reduced to the least possible degree, which requires the individuals with outstanding academic credentials. Stipulation of the ***foreign currency clause*** is one of the possible hedging instruments against the potential business risks in overseas business transactions and in concluding the contracts in Serbia by pegging the monetary amount to foreign currency, which is allowed under Law on Foreign Currency Transactions (LFCT) (Article 2, paragraph 1, subparagraph 24 of the LFCT) and Law on Obligations (LO). Due to exceptional importance of the question of risk in all business fields, the International Organization for Standardization has, in ISO 9001 version for the year 2015, introduced requests for the introduction, application, maintenance and upgrading of the quality management system. Beside the said ISO standard, in the year 2009 a new ***ISO standard 31000:2009- risk management*** was established (***ISO standard 31000:2009).***This was the first international norm of global character in risk management in the world and implies the authority, resources and structure of risk management in an organization which makes possible the efficient risk management. The notion of quality is often linked to sophistication, elegance, sometimes luxury, and is not easily defined, but one thing is certain, quality is not an absolute value, but a relative one. (Ivanchevich, Lorenzi, Skinner and Crosby, 1994). The purpose of this paper is to explain in a nutshell the concept and types of risks, hedge instruments and, further, behaviour in the event of changed circumstances and the cases of rescission

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of contracts. In the end, a caselaw judicial precedent will be cited in relation to housing loans that were approved with currency clause pegged to the Swiss Franc.

HEDGE CLAUSES

Monetary Clause

Starting with the fact that in contemporary conditions the foundation of business comprises four freedoms: the free movement of goods, capital, services and labour, and that the business transactions are almost inconceivable without the line of credit extended to business organizations, banks or private individuals, this implies that the loan agreements must include the ***monetary clause***. By honoring the ***monetary nominalism principle,*** *when* the subject-matter of the obligation is a specific amount of money, the debtor must pay that amount of monetary units in which the obligation is denominated, unless the law provides otherwise. If, however, the pecuniary obligation is denoted for disbursement in foreign currency or gold, its fulfilment may be demanded in home currency according to the exchange rate in force at the moment of performance of the obligation (Article 394-395 LO). This principle is in conformity with the good faith principle and the principle of equivalency of prestations, since in any case, the debtor who delays with performance of monetary obligation shall pay beside the principal amount also the legal rate of interest thereon, in conformity with the law (Article 277 LO) (Antić, 2014).

According to domestic legislation contracting in foreign exchange in the Republic is permitted, but any payments and collections made in relation to such contracts must be made in dinars (Article 34, paragraph 7 of the LFCT).This legal provision is intended to preserve the value of contracted business deals in the event of fundamental change of circumstances in the monetary sphere from the moment of contract formation until its performance.

Besides said, it should be taken into account that the mechanism of foreign currency conversion has been determined by caselaw of the Court of Justice of European Union (CJEU), which is of utmost importance for the global capital flow. From the example which follows it may be seen how the Russian ruble has lost ground in the course of one year in relation to US dollar, due to imposition of the sanctions against the Russian Federation.

Table 1. Fluctuation of the exchange rate of Ruble to US dollar in the period from 5.9.2017 to 5.9.2018.

Source: https://www.x-rates.com/table/?from=USD&amount=1

Highest inflation rate in the Twentieth century was recorded in Germany in the year 1923, when the monthly inflation rate was around 29.500 %, and the money was printed in 150 printing works by 2000 printing presses, while the monthly inflation rate in the Federal Republic of Yugoslavia in September 1993 was 743.2 %.

Beside the foreign currency clause, the fulfilment of pecuniary obligation may be demanded in relation to the value of gold since the ***gold clause*** is legally permitted, and the obligation shall be discharged in domestic currency according to the rate of exchange (price of gold) valid at the moment of fulfilment of the obligation (Article 395 LO).

Indexation Clause

Indexation Clause is classed into special type of commodity risk, the price risk. This risk is most often linked to three possible causes: first, if there are changes in previously established supply and demand ratio on the market for certain type of commodity (services) resulting in the correction of the stipulated price; second, if the price has changed due to new measures of monetary or fiscal authorities, and the third, if the buyer has additional requests not in conformity with contractual stipulations. In regard to the above mentioned occurrences which result in price deviation, it is of material importance to incorporate the legally permitted ***indexation clause*** in the contracts. By inserting the indexation clause a protection is afforded against the potential decline in the value of money (most often inflation or devaluation) , which as a consequence has the correction of the price of goods, services and labour in the period from contract formation until its performance. The seller in such cases, out of conventional kindness in business, endeavours to meet the needs of the buyer, within certain limits. These limits within which the seller, without running the risk for his own business result, may fulfil the needs of the buyer, are set up to the level of common business risk (not-included risks-self-insurance) which as such, has already been included in the very calculation of the subject of the sales and purchase agreement. However, when such limit is reached or surpassed by the subsequent demands of the buyer, which constitutes new debit of commercial calculation, an adequate commercial solution should be found in the form of correction of contractual price for the subject-matter of the sale and purchase agreement (Tešić, 1996).

Indexation clause may be stipulated only if for certain commmodity (services) there are Average Price Indices, that are periodically published by the competent government institutions (national Census Bureaus).

Sliding Scale Clause

As regards long-termy delivery of equipment of large value (plants, machinery, devices, turn-key construction contracts), there is a fully reliable hedge system against decline in value of such business deals, i.e. by inserting the so-called Price Adjustment Clause to the original contractual price stipulated in the sale and purchase agreement (Article 397.CO). The clause has the impact by applying the ***Sliding Scale Method*** (Tešić, 1989)**.**

There are many sliding scale methods, but most often two of them are used in practice: mathematical method which consists of applying certain math formula that includes all the elements of the price structure and the descriptive method of the sliding scale. In the descriptive method one part of the price structure is subject to changes in prices (e.g. 70% of the value of the agreed upon business deal, while the other part is set in fixed prices. In day-to-day business a combination of the descriptive method and mathematical formula is most often applied.

The application of the sliding scale method is based on the following principles:

- It equally protects the interests of both contracting parties;
- At the moment of contract formation, there must be an uncertainty in regard to forthcoming situation in the country where the construction site is located, as regards the price of material and workforce;
- Time of impact of variable factors of mathematical formula of the sliding scale should overlap with the time of actual incurring of the construction costs during the construction period;
- Sliding Scale Method may have an impact only within the agreed-upon period for dischage of assumed obligation;
- Sliding Scale Method, when applied, does not hedge against impediments in fulfilling the contractual obligations if one of the contracting parties, due to its own fault, absent the *force majeure* event beyond its control, has failed to perform in due time certain activity it had been obliged to do under the contract or according to ordinary course of business (Tešić, 1989).

Developed countries have special hedging instruments against commercial and non-commercial risks through specialized institutions which are in credit business of approving credit lines or are in export business insurance (Hermes in France, COFACE in France etc.) and so do the international financial institutions (MIGA, etc.).

CHANGE IN CIRCUMSTANCES

One of the basic tenets in obligation relations is the equality of the parties. This principle refers to all participants in obligatory relations. It has been proclaimed in Article 11 of the LO which reads as follows: „Parties to obligation relations shall be equal in terms of law“. This principle may be called, as it is oftentimes named, the principle of equality of the parties and equality of their wills (Đorđević and Stanković, 1987). The principle that the agreements must be kept is on the same footing with the above said principle, whenever that is possible. This principle known as ***„pacta sunt servanda“*** is still valid today as the foundation of the certainty of legal transactions. It happens, however, that the circumstances under which the contract had been concluded changed in the meantime, so that the performance of the obligation would be too burdensome for one party or expose it to excessive losses. In such situation, it had been pointed out that a contracting party should be permitted to demand a modification of its contractual obligation and even ask for rescission of the contract. A prevailing view in present-day legal thought is that „***Rebus sic stantibus***“ clause (Change in circumstances) should be treated as a legal remedy whose aim is to protect the principle of equivalency when such principle has been broken. (Đorđević and Stanković, 1987). In one judgment rendered in favor of a legal entity, Appellate Commercial Court confirmed the judgment of Belgrade Commercial Court, as the court of first instance, which rescinded the loan agreement with foreign (CHF) currency clause. That court judgment declared that the exchange rate of Swiss franc against dinar under the contract from 2007 until the end of 2016 had increased by 239%, which was deemed to be a material change in circumstances.

RESCISSION OF A CONTRACT

If after the formation of the contract there are new circumstances which make it more burdensome for one contracting party to discharge the obligation or if due to such conditions the purpose of the contract cannot be realized, all of the said in such degree that it is self-evident that the contract no longer suits the contracting parries, a party who has been affected by such circumstances may demand the rescission of the contract. Still, the contract will not be rescinded if the other party offers or agrees that the contract be equitably amended.

In the event of rescission, the court shall, at the request of the other party, impose a duty against the party requesting it, to compensate to the other party an equitable part of the loss sustained due to rescission (Article 133.LO).

An Obligation may be terminated due to impossibility of fulfilment, or performance. This has repercussions, *mutatis mutandis*, on the contract itself. As regards the contractual obligations, one can only speak about the supervening impossibility, after the formation of a valid contract, that is to say of the impossibility which has arosen subsequent to the formation of the contract. If the obligor has assumed an impossible obligation, it means that the other party cannot enforce such obligation, i.e. that between them there is no obligatory relation (Antić, 2014).

CASELAW

The most striking exampe in the application of the above mentioned clauses are the cases of granting the loans to individuals as well as businessmen and entrepreneurs for purchase of real property with the application of the currency clause pegging the domestic currency to Swiss franc. Legal basis for approving the foreign curency loan to residents is contained in Article 25 of the Law on Foreign Currency Transactions which reads as follows:„ *Banks may grant credits in foreign exchange to resident legal entities and entrepreneurs for the payment of imported goods and services from abroad“.* ***„Banks may grant credits in foreign exchange to resident natural persons for the purchase of real estate in the country“.*** This was the first time ever since the year 2006 that the granting of foreign currency loans has been permitted to natural persons for the purchase of real estate in Serbia and though it was legally possible to approve a loan in dinars with foreign currency clause since 2000, the banks did not act accordingly. The reason was very simple since the banks did not have sufficient deposits in Swiss francs to disburse loans in that currency. However, the banks have breached Article 1065 of the LO which reads as follows: *„By a contract of credit the bank shall assume the obligation to place at the disposal of a beneficiary of the credit a specific amount of money, for a definite or indefinite period of time, and for specific purpose or without such purpose, while the beneficiary shall assume an obligation to pay to the bank the stipulated interest and repay the received amount of money, at the time and in the way determined by contract“.* Instead of offering private citizens Swiss francs, the banks have disbursed dinar counter-value according to the exchange rate valid on the date when the loan had been approved (granted), and the instalment plan was made in CHF. This means that contrary to Article 1065 of the LO, citizens are repaying the loan in foreign currency (which they have not received) instead in dinars (which they received). The „bait“ for the borrowers was a lesser rate of interest and slower increase of CHF exchange rate, since the exchange rate of Euro had been increasing faster in the said period, although it did not happen that way in the end. In the course of the proceedings some law courts have determined that from the date of drawing down the loans in CHF, until the date of expert witness testimony, the CHF exchange rate has increased by 129%, and in the same time the exchange rate for euro has increased by 57%. By such conduct of the banks one of the basic principles of the law of obligations has been violated- the principle of equality of contracting parties.

At the same time the Consumer Protection Act was also broken since the bank in pre-contractual phase did not advise the borrowers what would be the consequences of signing such a loan agreement and how much the borrower will have to pay for the purchased real property. At the same time Article 5 paragraph 1 subparagraph 1) of the Consumer Financial Protection Act was violated since one of its basic tenets reads as follows:“ a right to an arms-length contract with provider of financial services.“

After disputes lasting many years between private citizens and banks throughout Europe where also many thousands of Serbian citizens have filed their applications, the European Court of Human Rights (ECtHR) rendered on 20 September 2017 its judgment in favor of the debtor, case file C-186/16, (European Court of Justice 2017) referring to Council Directive 93/13 EEC on unfair terms in consumer contracts of 5 April 1953 (Council Directive 93/13 EEC). The reason to issue the proceedings was an application filed by the Appellate Court in Oradea, Romania. Encouraged by the said judgment of the ECJ, first judgments have also been rendered in the countries of the region (Western Balkans). In the beginning of January 2018, a Slovenian court annulled the loan agreement in Swiss francs for the purchase of real property since the person who took the loan had not been informed regarding the high risk of such foreign currency arrangement. It was one of the first judgments in Slovenia and by that court judgment the loan repayment instalments were decreased by 60% after the loan agreement had been annulled. Decisions in favor of bank clients were passed in France, Spain and other countries, while Hungary was the first country which solved the problem by conversion of Swiss francs into Hungarian forints. Appellate Court in Novi Sad confirmed in mid-april 2018 the judgment of Novi Sad High Court which rescinded a long-term housing loan agreement with indexation clause in Swiss francs. On 5.10.2017. the number of approved loans with foreign currency clause in euros was 87.619, and with curency clause in Swiss francs 17.780 (Ćatić, 2017).

CONCLUSION

Following conclusions may be drawn from the above text:

1. In present-day business conditions, hedging instruments like protective clauses in the contracts entered either for overseas or home transactions are needed and consequently permitted by our legislation. From the international standars aspect, risks are the subject matter of ISO 9001 2015 standard and ISO 31000:2009 – risk management, which is of utmost importance for high quality business transactions of our business organizations;
2. Basic principles of the law of obligations cannot be subverted: the principle of equal value of prestations, principle of equality of contracting parties, principles of prohibition of abuse of dominant position, principle of prohibition of abuse of law etc. It may be concluded on the basis of this article that the banks have not adhered to said principles;
3. Banks in Serbia, when granting the loans in Swiss francs for the purchase of real property, instead of monetary nominalism accepted by Serbia like most of the European countries (France, Italy, Switzerland etc.) have applied the monetary valorism „imported" from Austria and hence the loan was indexed in Swiss francs, disbursed in dinars and instalment plans were made in Swiss currency. This was in contravention of Article 1065 of the LO according to which the borrowers were obligated to pay the banks interest and instalments for granted loan amount in dinars, which they had received, instead to repay the loan in Swiss francs, which they had not received. Thereby the detrimental consequences were transferred to borrowers and in such measure that they could not meet their obligations-to repay timely the loans increased for interest thereon;
4. Since when approving the loans with Swiss francs foreign currency clause the banks have violated the right of the consumers to be informed, it should be expected that the domestic courts will proceed in compliance with the ECJ judgment.

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ACCOUNTING, AUDIT & FORENSIC SCIENCE

Papers in this section examine some current topics in the field of ACCOUNTING, AUDIT & FORENSIC SCIENCE. The aim of the first paper in this section is to assess the areas of financial accounting information used in business management decision making in Lithuanian companies. The second paper is aimed at exploring a way of improving the relationship between "business education" and "accounting", in order to allow students to acquire practical skills by working in a training company. Next paper illustrates the recognition of Bitcoins and other crypto currencies in financial reporting. It applies the existing IAS and IFRS guidelines into this practical issue and contributes to the process by which diversification in practice can be avoided. The fourth paper in this section is devoted to the analysis of the usual reporting practice through the Annual Business Report in the area of the former Yugoslavia. Next paper is focused on the transfer pricing report and the subject of the research is a comparability analysis that has to be done in order to completely apply the arm's length principle and to properly do transfer pricing report by using any of the three methods. The main purpose of the sixth paper is to analyse the level of readability of the Serbian Law on Auditing. The problem of the research is linguistic understandability concerning the comprehension of the text meaning. Next paper will analyze the Audit Report Lag (ARL) for Serbian business entities listed on Belgrade Stock Exchange and the results will be compared to other countries. The final paper shows the results of a research that included 13 Super League sport clubs in the Republic of Serbia, and the aim has been to check if there are any sings of earnings manipulations.

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ACCOUNTING, AUDIT AND FORENSIC SCIENCE
Scientific - original paper

THE IMPORTANCE OF FINANCIAL ACCOUNTING INFORMATION FOR BUSINESS MANAGEMENT

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Abstract:

Financial accounting provides about 50% of effective information data. This information can be used for decision making processes in business. Unfortunately, the existing situation shows the issue of financial reporting quality. This may lead to the situation when owners and employees of the companies do not trust financial accounting data and do not use it often for decision making. Therefore, the aim of the research is to assess the areas of financial accounting information used in business management decision making in Lithuanian companies. To investigate the theoretical aspect of the importance of financial accounting information for business management, systemic analysis and synthesis of the theoretical insights of scientific literature were applied. The empirical results are based on a questionnaire survey among Lithuanian companies.

Keywords:

accounting information, business, financial accounting, management

INTRODUCTION

Scientists have still not sufficiently explored the institutional and social aspects of financial accounting. One of the reasons is financial accounting form harmonization or standardization problems, most countries still use diverse forms of accounting, which depend at national level (Hopwood, 2000). Therefore, it is complicated to make business management decisions at international level. Countries are striving for harmonization and since 2016 Lithuania has been making changes in accounting legislation for standardization of accounting in EU. Unfortunately, these frequent legislative changes can cause stress among accountants who quickly and efficiently accept innovations. Therefore, the quality of financial accounting information becomes worse. The level of quality of financial accounting information in Lithuania is low, as it is revealed in the research of the Authority of Audit, Accounting, Property Valuation and Insolvency Management (2017). The analysis of financial statement of 100 companies of Lithuania has revealed that 59% of good quality financial statements are prepared by the company of accounting service and 50% of good quality financial statements are prepared by the chief accountant of the company.

According to Ovidia (2013, cited Srivastava, Lognathan, 2016), the financial accounting information provides 46-50% of effective information data. This is a large part of the information that is useful for business management decisions. Unfortunately, if the accounting information is accurately presented in the financial statements by only 50% in Lithuania, the effective information data decrease. This can have negative effect on business management decisions. Therefore, ***the problem of the research*** is – what is the impact of financial accounting

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information on business management decisions? ***The aim of the research*** – to assess the quantity of financial accounting information used on business management decisions in the companies of Lithuania.

Tasks to achieve the set aim:

1. to analyze the importance of financial accounting information for business management.
2. to investigate the relationship between the decision of business management and the use of financial information in Lithuania.

THE IMPORTANCE OF FINANCIAL ACCOUNTING INFORMATION FOR BUSINESS MANAGEMENT

Financial accounting has various definitions in practice. Unfortunately, according to Černius (2012) the definitions of the concepts of accounting, bookkeeping, financial accounting are used in different terms for describing the same phenomenon and this causes quite a lot of confusion. Therefore, it is necessary to disclose correctly the definition of financial accounting before analyzing its importance.

Various authors and scientists, such as Boudreau, Ramstad (1997), Zabielavičienė (2009), Černius (2012), Gliaubicas (2012), Akhmetshin, Osadchy (2015), Salako, Yusuf (2016) and others discussed the concept of financial accounting. The majority of definitions reveal the same criteria of financial accounting, just a few show different meanings of financial accounting. Financial accounting definition discloses that financial accounting is not only a system of transaction classification and recording, but it is also important for business decision making process.

The analysis of financial accounting definitions allowed to disclose the fact that the main goals of financial accounting is financial information collecting and transforming process (IASC, 1992, cited Krisement, 1997), monetary transactions' classification and recording process (Salako, Yusuf, 2016), application system of accounting rule (Boudreau, Ramstad, 1997), information presented in the annual account (IASC, 1992, cited Krisement, 1997), preparation system of financial statements (Černius, 2012), financial information provision for a user (Spiceland, Sepe, Tomassini, 2001, cited Young, 2006; Samuel, 2013, cited Herath, Melvin, 2017; Akhmetshin, Osadchy, 2015; Sevilengül, 2016, cited Adalı, Kızıl, 2017), information about the material and financial standing of a company (Akhmetshin, Osadchy, 2015), source for management accounting (Zabielavičienė; 2009), information for business decision making (Akhmetshin, Osadchy, 2015; Sevilengül, 2016, cited Adalı, Kızıl, 2017).

To sum up, the majority of authors and scientists admit that financial accounting is important for a user, unfortunately just some mention the business decision making process. However, it needs to be specified what financial accounting information for a user is necessary for a decision making process. Accordingly, financial accounting information could disclose the information regarding the economic viability of the company, the performance of the company, the development stage of the company, as well as the risks the company is facing (Florin, 2014). Therefore, traditional financial accounting must assure true and fair view of the company's performance (Zambon, Del Bello, 2005; Yadav, Kumar, Bhatia, 2014). This is necessary for users of financial reporting, as well as for the investors to reduce the risk (Yadav, Kumar, Bhatia, 2014) or "as a management tool for strategic decision making" (Zambon, Del Bello, 2005).

Munteanu, Berechet, Scarlat (2016) explained the importance of financial accounting information for users. The scientists admit the importance of cash flows, because the managerial decisions depend on different activities of cash flows in company. Financial accounting information discloses the size of resources of main activities or investing. Cash flow is acting as a self-financing margin. The financial accounting information could be transformed into financial indicators, which are one of the company's analysis methods for managerial decision. Therefore, financial accounting information contributes to the measurement of company's financial indicators, developing of financial and economic processes, evaluating of self-financing and generating cash capacity. Following B. Gibson (1992), financial accounting plays the role in the business management decision making of small companies, therefore the access to financial accounting information must be ensured for owners. The author admits that the use of financial accounting information for decisions of financial data planning can be regarded as rational decision making.

The authors of the article admit that the main aspect of financial information is quality. To ensure this, what is needed is that financial accounting has rules and the system users can make rational decisions. According to Achim and Chis (2014), the quality of financial information is not easily quantified, and it cannot be observed directly. A user of financial information has different expectations and perceptions regarding what information is useful and has good quality. It is important to add, that financial accounting quality depends on accounting sustainability. G. Lamberton (2005) admits, that "business decision makers require a balanced information set, including economic, social and environmental information if decisions are to achieve the multidimensional goal of sustainability". S. Schaltegger, R. L. Burritt (2010) debate about two lines of accounting sustainability, one illustrates philosophical accountabilities and the other one the management perspective. Therefore, according to G. Lamberton (2005), "the provision of sustainability accounting information to internal users would focus on the provision of relevant and decision useful information to management."

Financial accounting information, which is stored in financial accounting systems, directs us to control mechanisms of company (Bushman, Smith, 2001). One of control mechanisms is a right decision of business management. According to A. Látečková (2014), accounting is a valuable source of data for "financial planning, economic analysis, cost controlling, strategic controlling, liabilities controlling, controlling of sales, marketing analysis and planning, profit managing, cash flow and others".

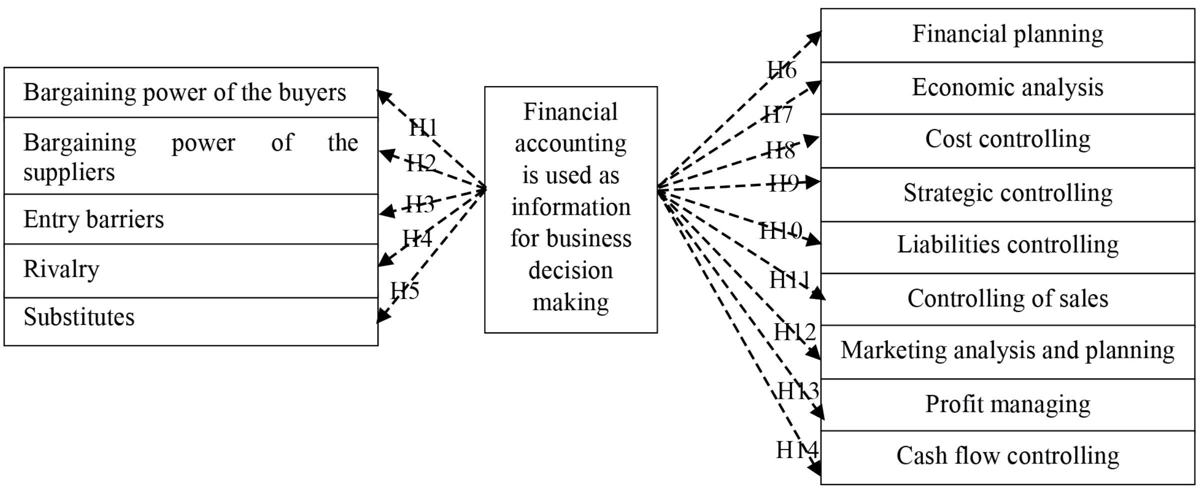
Every business unit competes in a specific environment of market. In order to adapt and succeed in the market changes, companies use various business strategies. Business firms that are more familiar with the external environment, know their shortcomings and benefits, and have more opportunities to make effective changes to their strategies, and are much more flexible (Valentavičius, 2009). Therefore, business process management requires holistic management understanding, involvement, process-aware information systems, well-defined accountability and a culture that is receptive to business processes (De Bruin, M. Rosemann, 2005). It is important to admit, that accounting processes are part of business processes (Spathis, Constantinides, 2004). Therefore, to control business processes and make necessary decisions, business owners and employees have to follow financial accounting data.

Business decision making depends on companies' strategy forces. Many researchers explained different types of theoretical models of strategies which could be used by enterprises. One of them is Porter's five forces model (Porter, 1989). According to S. Valentavičius (2009), the main purpose of combination of Porter's five forces is to explain the level of competition in the market; also, it helps to find a niche in the market where the organization could best defend itself against these forces. Competitive environment is also created by those market players who have nothing in common with the competition, e.g. consumers.

This business strategy model is designed by analyzing literature on micro-economics through five forces which are the bargaining power of the buyers, entry barriers, rivalry, substitutes and the bargaining power of the suppliers (Grundy, 2006). Following these five forces and ensuring business viability can help to financial accounting data analysis. For example, the bargaining powers of the buyers are one of the most important criteria in the process of planning companies' revenue. To ensure that sales companies can work with sales controller. T. Hyvonen, J. Jarvinen, J. Pellinen (2015) admit that sales controller job should focus on financial reporting and data combining accounting, as well as managerial roles. Buyers monitoring is also an important process in business management. Here – it is important to analyze a buyer's debt. Z. Ramly (2013) admits that financial reporting is also the process of assessing the extent of debt risk the oversight mechanism.

After summing up literature analysis about the importance of financial accounting information, it can be concluded that financial accounting has various goals. The most important goal is financial accounting information use for business decisions. Depending on various information, users' purpose can be different, but they expect true and fair image of a company. Nowadays, sustainable accounting, which plays the main role in the decision making, can ensure true and fair image of a company.

Figure 1. Research model and hypotheses



METHODOLOGY

Today, in terms of accounting reliability, it could be said that users do not trust financial accounting data. Therefore, the purpose of this research is to reveal business confidence in accounting data and the understanding of the use of financial accounting information. The aim of the research was to examine the importance of financial accounting information for business management in Lithuania. Summarizing the theoretical aspects and the results of scientific research, the research hypotheses are formed (see, figure 1).

As we can see in Figure 1, the research model has 14 hypotheses. H1-H5: Positive relationship existing between companies that believe that financial accounting is used as information for business decision making and opinion that financial information can solve problems of the bargaining power of the buyers, the bargaining power of the suppliers, entry barriers, rivalry and substitutes. H6-H14: Positive relationship existing between companies that believe that financial accounting is used as information for business decision making and financial information for Financial planning, Economic analysis, Cost controlling, Strategic controlling, Liabilities controlling, Controlling of sales, Marketing analysis and planning, Profit managing, Cash flow controlling.

In order to confirm or deny these hypotheses, an empirical investigation was made using a quantitative research method - a questionnaire survey. The questionnaire consists of two parts: in the first part, respondents were exposed to demographic questions aimed at identifying the respondent's duties, the type of company, the size of the company, the activities of the company and the number of years of the company's activity on the market; the second part formulates the statements evaluated by the five-point *Likert* scale (5 - strongly agree, 4 - agree, 3 - have no opinion, 2 - disagree, 1 - strongly disagree).

At the beginning of 2018, according to the data of the Department of Statistics of the Republic of Lithuania, there were 83 439 companies operating in Lithuania. According to Yamane (1967, cit. Izra, 1992), a simplified sample calculation formula is used to get 395 respondents to gain 95 percent of credibility. A survey of 398 respondents requires significant time and financial costs, therefore 38 respondents were interviewed. In this case, the error rate is 16%. The survey was conducted in July-August of 2018 and it was conducted using an online survey.

38 respondents participated in a survey: 3 company managers, 7 middle managers, 16 sales managers, 12 other employees. The research involved 15 small, 11 small, 4 medium and 8 large enterprises. 19 respondents represented enterprises operating in the market of up to 2 years, 9 respondents operating in the market from 3 to 5 years, 5 respondents - companies operating from 6 to 10 years, and 5 respondents - companies operating from 10 to 15 years. This distribution of respondents is believed to be sufficient to obtain reliable results.

Table 1. Interpreting the Size of a Correlation Coefficient

Size of Correlation	Interpretation	Size of Correlation	Interpretation
0.90 to 1.00	Very high positive correlation	**-0.90 to -1.00**	Very high negative correlation
0.70 to 0.90	High positive correlation	**-0.70 to -0.90**	High negative correlation
0.50 to 0.70	Moderate positive correlation	**-0.50 to -0.70**	Moderate negative correlation
0.30 to 0.50	Low positive correlation	**-0.30 to -0.50**	Low negative correlation
0.00 to 0.30	Negligible correlation	**0.00 to -0.30**	Negligible correlation

Source: M. M. Mukaka (2012)

In order to find out more about the use of financial accounting for business decisions, the statistical relationship between various factors was determined by using the Spearman correlation coefficient. The obtained results are estimated on the basis of the interpretations of correlation coefficients presented by M. M. Mukaka (2012) (see Table 1). The calculations are performed using the package of statistical analysis SPSS.

THE RESULTS OF THE RESEARCH

Table 2 reports the value of the Spearman rank correlation coefficient between financial accounting perception that financial accounting is used as information for business decision making and each of the issues (the bargaining power of the buyers, the bargaining power of the suppliers, entry barriers, rivalry and substitutes).

Table 2. Spearman Rank Correlation Coefficient

Financial accounting information can help to address the following issues:	Financial accounting is used as information for business decision making
of the bargaining power of the buyers	0.104
of the bargaining power of the suppliers	0.283
of entry barriers	0.400*
of rivalry	0.365*
of substitutes	0.341*

*. Correlation is significant at the 0.05 level (2-tailed).

In regression, a significant low positive relation is found between financial accounting perception that financial accounting is used as information for business decision making and decision of entry barriers (value = 0.400), rivalry (value = 0.365) and substitutes (value = 0.365). Regression shows a negligible correlation between financial accounting perception that financial accounting is used as information for business decision making and decision of the bargaining power of the buyers, of the bargaining power of the suppliers.

In conclusion, business agrees that financial accounting information is used to make business decisions, considers financial accounting information to be useful in assessing barriers to entry and restricts the ability of the market to evaluate existing substitutes. At the same time, the results have shown that business question the benefits of combining financial accounting information with buyers and suppliers. Such results may have appeared due to the fact that business does not trust financial accounting data and does not expect buyers or suppliers to receive fair financial statements. However, an additional study should be undertaken to assess this.

Table 3 reports the value of the Spearman rank correlation coefficient between financial accounting perception that financial accounting is used as information for business decision making and each of the cases using accounting information.

Table 3. Spearman Rank Correlation Coefficient

Financial information using for:	Financial accounting is used as information for business decision making
Financial planning	0.158
Economic analysis	0.428**
Cost controlling	0.152
Strategic controlling	0.502**
Liabilities controlling	0.631**
Controlling of sales	0.461**
Marketing analysis and planning	0.441**
Profit managing	0.341*
Cash flow controlling	0.262

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

In regression, a significant moderate positive relation is found between financial accounting perception that financial accounting is used as information for business decision making and financial accounting application for strategic controlling (value = 0.502) and liabilities controlling (value = 0.631). Regression shows a significant low positive relation between financial accounting perception that financial accounting is used as information for business decision making and the application of financial accounting for economic analysis (value = 0.428), controlling of sales (value = 0.461), marketing analysis and planning (value = 0.441) and profit managing (value = 0.341). Negligible correlation exists between financial accounting perception that financial accounting is used as information for business decision making and the application financial accounting for financial planning, cost controlling and cash flow controlling.

In conclusion, business uses financial information to make decisions related to sales (controlling of sales, marketing analysis and planning, profit management), and the control of goods and materials (liabilities control). When assessing business viability, business uses financial accounting data only to control strategies, while financial planning, cost control and cash flow control are not evaluated by using financial accounting data. An additional study should be made to evaluate the causes.

CONCLUSION

1. Information regarding financial accounting is important for its users in the process of making various decisions. As regards small or large companies – the advantages of financial accounting information are different. Literature analysis showed that the importance of financial accounting information could be revealed through Porter's five forces. Financial accounting information can be used for buyers monitoring and debt risk controlling. Also, it disclosed the size of resources of main activities or investing, finance planning, ensuring cash flow and strategic planning. Depending on the

company's size, the list of financial accounting information could be different. Surely, financial accounting information must assure true and fair image of the company. Therefore, today it is necessary to discuss sustainable accounting. Sustainable accounting can have a positive impact on business decisions.

2. The empirical research revealed that Lithuanian companies mostly use financial accounting information to make decisions related to sales (controlling of sales, marketing analysis and planning, profit management). Following Porter's five forces, Lithuanian companies apply financial accounting information for making decisions related to entry barriers, rivalry and substitutes. It looks strangely, but Lithuanian companies do not tend to apply financial accounting information to financial planning, cost control and cash flow controlling.

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ACCOUNTING, AUDIT AND FORENSIC SCIENCE
Professional paper

USING “TRAINING ENTERPRISES” IN ACCOUNTING EDUCATION AT THE UNWE – SOFIA

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Abstract:

The Faculty of Finance and Accounting (FFA) and the Department of Accounting and Analysis at UNWE initiated the use of “training enterprises” in the training of accounting students. This project was aimed at exploring a way of improving the relationship between “business education” and “accounting” in order to allow students to acquire practical skills by working in a training company. For this purpose a training company was created by following all national economic regulations and legislation that are applicable to real business. The “training enterprise” is a practical tool for training and a place to work and learn through the use of all documentation, all procedures and programs applied in the real business, but without real money and goods. As a result, skills develop which make students trained in the training enterprise competitive on the labor market.

Keywords:

training company, university, accounting, education

INTRODUCTION

This report focuses on a project that was initiated by the Faculty of Finance and Accounting (FFA) and the Department of Accounting and Analysis at the University of National and World Economy (UNWE) which consisted of the creation of a training company (FAF) for the students of UNWE. The motivation was to provide the students from the sub-branch “Finance, Accounting and Control” with the opportunity to acquire skills necessary for their future successful integration in the workforce.

BACKGROUND INFORMATION ON TRAINING ENTERPRISES

A training company (TC) or training enterprise (TE) is a model of a real company. TE employees learn and accumulate skills by working in the TE. They buy and sell products, connect with other TEs and people from other countries and take part in national and international events known as TEs trade fairs. In this way, TE is an ideal means of providing appropriate entrepreneurship training, which means supporting students’ economic creativity, responsibility and autonomy. The teaching method through TE provides one of the best opportunities for young people to become entrepreneurs. “Learning by doing” is a method that is validated for the development of key competencies needed in real business. Trainees benefit from the accumulation of work experience and have the opportunity to discover new interests and develop new strengths. This makes it easier for them to plan their further professional development. TEs improve teamwork and self-evaluation. Partnership and know-how between training firms and real-world businesses is

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common. As a result some of the trainees in the training companies can find work in the partner company during or after their education.

The origin of training companies (formerly referred to as "fictitious companies") can be traced back to the 17th century. In 1660, Mr. Leris, a resident of Danzig, Germany, described the fictitious commercial transactions of his literary protagonist trader Peter Vinst in his book "Trade and Production." Another source explaining the philosophy of the training company, is Carl F. Bart, who in 1776 wrote: "The teacher allows them to choose what to do and where to trade., everyone gets fictitious capital, goods or securities ... " (*Paștiu, 2014). Developing marketing and management skills using simulated enterprises and facilitating the transition from theory to practice.*). Training companies were initially set up for large companies to recruit and train staff by creating a copy of the company's administration. The aim was to teach a learner about the main processes in a workplace with the most practical approach. Gradually, they entered educational institutions or became independent vocational training centers. This activity was usually short-lived activity - two to six weeks, and was confined within the educational institution or training center. Links and business contacts with training companies outside of the city or the country were incidental.

With the increase of the number of training enterprises in different countries, national centers were established to organize the links between the training companies in the country and gradually links between countries were established. The first national center was established in 1960 in Heidelberg, Germany. Today, in all countries where the "training enterprise" model is applied, training enterprises are organized and networked under the guidance of the National Training Centers. These national centers are now methodological, organizational and coordination units and determine the rules of work of the training enterprises in a given country.

The Center simulates for the network of training enterprises the functions of the administrative state structures and institutions necessary for the work of the real companies in the country. Each training company, therefore, has to register with the National Training Center. The Center collects and disseminates information about the number, the subject matter, the working time and the coordinates of the training companies. The center provides payment options in the country and abroad through a bank simulation. The National Center develops country-specific methodology and provides advice and information.

The establishment of regular contacts between the national centers of a number of European countries gave rise to the idea of creating an international network of training enterprises. The first countries involved were Germany, Great Britain, Austria, Netherlands, Sweden, Finland, Canada, Spain, Switzerland, Italy, France and Denmark. The idea was initially realized as a European project funded by the European Social Fund (45%) and North Rhine Westphalia, Germany (55%) in November 1993. The organization of training enterprises called EUROPEN-PEN INTERNATIONAL- was established on 27 October 1997 and is based in Essen, Germany. Founding members of EUROPEN-PEN INTERNATIONAL (2018) are Germany, Great Britain, Austria, Netherlands, Sweden, Finland, Canada, Spain, Switzerland, Italy, France and Denmark. Consequently, Argentina, Australia, Belgium, Bulgaria (2002), Brazil, Croatia, the Czech Republic, Hungary, Japan, Latvia, Lithuania, Norway, Poland, Romania, Slovak Republic, Slovenia, South Africa, USA. At present, China, Hong Kong, Vietnam, United Arab Emirates, Senegal, Tunisia, Greece, Ireland, Portugal, Russia, Serbia, Albania, Singapore and Malaysia are also participating in the organization's activities. Now the World Network brings together over 5,500 training companies and it has 42 countries from all continents. EUROPEN-PEN International's mission is to support, coordinate and develop activities that broaden the capabilities of national training networks in member countries; to present and enrich the idea of learning in and through a simulated work environment and to expand the number of regional and national TCs networks. The vision of EUROPEN-PEN International is: "Learning the boundaries of reality - an experience of global business simulation that reproduces all the functions of a real company and connects education and reality" (EUROPEN-PEN International (2018*)*. EUROPEN-PEN International aims to work in the field of training, continuing education and retraining, providing consulting services, methodological development, standardization of qualifications, technology, software development, exchange of experience and professional and technical projects.

Membership of EUROPEN-PEN International (2018) and work in the World Wide Web allows:

- Access to the global database of training companies;
- Facilitated access to the global market with the ability to reach out to thousands of potential customers in different countries;
- transfer and processing of international payments automatically with the help of general banking software;
- Technology development and transfer;
- Utilizing the potential of highly qualified staff and the latest business technology;
- Partnership and cooperation in implementing different projects and other joint activities
- Ability for international exchanges of learners and trainers;

- Participation in the information flow within the World Network of Training Companies.
- Advertising of the products and services of the real mentoring companies;

Every year many international fairs of training companies are held, where the participants of the EUROPEN-PEN International network (2018) can meet their colleagues, create contacts and exchange experience and knowledge in international trade. EUROPEN-PEN International creates working groups for developing the theory and practice of training companies for different target groups, development in products and services of EUROPEN-PEN International and at the central offices maintaining high standards of practice and professional behavior by all members. The basic principles of the organization are to preserve the unity and independence of its members and to create effective partnerships between members and organizations and communities around the world to ensure the highest technical, professional and ethical standards in training.

TRAINING ENTERPRISES IN BULGARIA

In Bulgaria, the training enterprises are known as "training companies", but in the literature and in the programs of the Ministry of Education the terms "trainers an in-house firm", "a training company" and "a training establishment" are used. The training companies in Bulgaria are under the leadership of the Bulgarian Center of Training Firms, which is an independent unit of the Ministry of Education and Science and is officially called the Center for Training Companies /CTC/ in Secondary Vocational Schools. The Network of training enterprises in Bulgaria has been an associated member of the World Network of Training Enterprises since October 2002. This provides opportunities for collaboration and business contacts with training companies around the world, cross-border exchange of methodology, lecturers and trainees.

The Bulgarian Center of Training Firms (2018) provides all the macroeconomic functions and activities to create a complete economic simulation for training companies in their country to resemble as closely as possible the economic conditions in which real businesses work. It supports training companies by offering the main commercial services that are expected to be available in the real world. The Bulgarian Center of Training Firms handles the commercial registration of the companies and administrates the Bank of Training Companies, the tax office, the Personal Data Protection Commission, the Patent Office, and is the supplier of all other country-specific services provided to the business by the state and its institutions.

The training companies in our country are mostly in secondary schools (98%). Periodically, training establishments for the unemployed, re-qualification and supplementary qualification are created for people with special needs, but they are created within projects and are short-lived. The methodology and training programs for the work of training companies in universities in our country have already been developed.

The Bulgarian Center of Training Firms (2018) creates effective partnerships with organizations and companies in Bulgaria and around the world in order to guarantee the highest technical, professional and ethical standards in the work of the training companies. The partnership between the Bulgarian Center of Training Firms and the higher education institutions is carried out through the conclusion of contracts for servicing training companies and the participation of teachers in commissions for the evaluation of training companies during the fairs of the training enterprises, signing of framework agreements and bilateral cooperation agreements.

In 2012, DG Enterprise and DG Education and Culture organized two international events aimed at teacher training for entrepreneurship education. The events were held in May 2012 (in Dublin, Ireland) and in September 2012 (in Brdo, Slovenia). They aim to bring together specialists in the training and training of entrepreneurship teachers to present good practices, share ideas and get to know the experience of others. In 2013, the European Commission, DG Enterprise and Industry, chose and included, as an example of good practice, the project of the Bulgarian Center for Training Firms "Teacher Training for the Guidance of Training Companies in Their School" in the Teacher Training Handbook "TRAINING IN ENTREPRENEURSHIP" publication is funded by the Competitiveness and Innovation Framework Program, which aims to promote the competitiveness of European enterprises the Bulgarian Center of Training Firms (2018) .

The Bulgarian Center of Training Firms (2018) most significant annual event is International fair of the training companies TF FEST - Young Entrepreneur Fair. Participation in TF FEST develops the creativity, initiative, competitiveness and entrepreneurship of young people. There they meet "colleagues" at other training companies from Bulgaria and the other participating countries, compare their achievements, establish contacts, carry out business transactions and settlements; practise their IT skills and foreign languages. The committees that evaluate students' performance are formed by representatives of businesses, universities, state institutions and NGOs. The fair was included by the EC in the European Small Business Week initiatives. In 2014, the Directorate-General for Enterprise and Industry included the TF FEST fair organized by the Bulgarian Center of Training Firms as a good practice in the European Commission's Guide to How to Support SME Policy with the Structural Funds.

BACKGROUND OF THE PROJECT IDEA

Europe faces very great challenges and no country can afford to stop criticizing the problems that the economic and financial crisis has uncovered. One of the main problems - unemployment, requires joint and concentrated efforts by Member States that need to be integrated into a common strategy with different applications depending on the characteristics and peculiarities of each country. In this context, the European Commission has proposed the Entrepreneurship Action Plan 2020 as a form of promoting entrepreneurship and innovation culture that will enable the revival of the economies and the creation of a truly "European entrepreneurial spirit" capable of mobilizing a society for the implementation of objectives recognized by all. With regard to the sustainable creation of a trade and entrepreneurial spirit in Europe, three areas of immediate intervention are being developed.:

a) Development of education and training in the field of entrepreneurship to support growth and enterprise creation.

b) Creating general terms and conditions suitable for entrepreneurs, removing the current structural barriers and seeking support in the key phases of the business life cycle, without forgetting the importance of financial collateral.

c) Promoting entrepreneurship / trade culture in Europe and helping the emergence of a new generation of entrepreneurs.

The training company is a good opportunity for enterprising students. It makes it possible to start a business closest to the real one. The relationship between the training company and entrepreneurship should be considered inextricably linked as any business idea could be tested. Moreover, in practice this could lead to:

- Creating jobs
- developing skills
- enabling unemployed and disadvantaged people to participate fully in public and economic life.

The creation of training firms in universities is gaining increasing popularity as the need for practical knowledge and skills on the part of students and business grows. Moreover, linking the theoretical knowledge has proven to be difficult and most questions are left unanswered. In this respect, the curriculum is in need of alternative solutions. The logical manifestation is the creation of training enterprises with an aim to simulate the real working atmosphere. Creating a simulated environment in which both theoretical and practical knowledge can be developed favours the development of entrepreneurship. It is not by chance that entrepreneurship and self-employment are recognized as a key element in the achievement of smart, sustainable and inclusive growth in the Europe 2020 strategy.

AIM AND SUBJECT OF THE PROJECT

The aim of the idea was to develop and run a model for work in a "training enterprise" by adapting accounting curricula of the Faculty of Finance and Accounting (FFA) and the Department of Accounting and Analysis at UNWE so that students participating in the work of the "training enterprise" acquire practical skills and additional qualification. Students would have the opportunity to apply for an internationally recognized certificate to certify acquired technical, professional and social skills. The certificate would be issued by the worldwide organization of training companies EUROPEN-PEN International (EUROPEN-PEN International, 2018) which has developed and adopted quality standards for work in a "training enterprise".

In the realization of the idea, a review was made of the training programs in place in specialized disciplines which are taught to the students from the sub-divisions "Finance, Accounting and Control" at the University of National and World Economy. A training curriculum for the work of a "training enterprise" was established based on the review, evaluation and adaptation of curricula for secondary vocational schools which were upgraded for the needs of university education. The subject of the idea was set as "Exploring the opportunities for improving the relationship between "business education" and "accounting" in order to allow students to acquire practical skills through the development of a training enterprise". The goal of the project was therefore "Creation of a training enterprise virtual company that is managed as a real business, performing the procedures, offering the products and services of a real company in accordance with national economic regulations and legislation."

BACKGROUND RESEARCH FOR THE PROJECT

To achieve the project goal, the following more specific research tasks were carried out:

- exploring the experience of member countries of the worldwide network of training companies EUROPEN-PEN International in applying the model" training enterprise" for training of different target groups and specifically in universities;
- studying the experience of the Bulgarian network of training enterprises in applying the model for "training enterprise" training of different target groups;

- study of official publications and the European Commission database on entrepreneurship education in vocational education and universities in Bulgaria;
- developing a proposal for a work program in a "training enterprise" that will enable the FAF (the practice enterprise) students during the training at UNWE to achieve higher learning ability and additional qualification as well as technical, professional and social skills necessary for their professional realization;
- providing students that work in FAF with the opportunity to apply for an internationally recognized certificate for certification of acquired technical, professional and social skills.

For the realization of the project, support was obtained from the Bulgaria Center of Training Firms, namely methodological assistance, fictional government and service sector support for the "training enterprise" and materials.

RESEARCH METHODS

Specific research methods were selected for the successful implementation of the objectives and tasks of the project. These methods were:

1) "Des-analysis" covering the study of the following sources:
   - databases, programs and practice of the member countries of EUROPEN-PEN International on the conditions, methodology and target groups trained in training enterprises;
   - European Commission official publications and database on entrepreneurship education;
   - national regulations on the application of the training enterprise model;
   - official publications and database of the Bulgaria Center of Training Firms regarding regulations for training in a training company;
   - UNWE databases on active curricula;
   - academic publications and consultancy analysis on curricula and their complementarity with practical experience within the framework of university education;
2) Statistical methods for the analysis of surveys (static analysis). Survey carried out among:
   - students trained in training companies;
   - students from universities in Bulgaria and other countries trained in training companies;
   - FFA students at the university

PROJECT IMPLEMENTATION

The first steps in creating a training company at the University of National and World Economy started with the training of the professors who would lead the training company. Four lecturers were sent to a specialized training organized by the Bulgarian Center for Training Firms. The training took place within 60 hours, after which certificates were obtained that enabled the lecturers to work as training managers of a training company.

The next step was making an official announcement to the students from the Financial Accounting Faculty at the beginning of the academic year that a training company was being created and that recruitment of associates and staff was open. All applicants were asked to submit a Request for Participation and a Cover Letter.

After the review of all the collected documents a selection was made and the first founding meeting of the company was carried out. This meeting was essential because all the documents necessary for the registration of the company in the commercial register of the Bulgarian Center for Training Firms were prepared. This included, among others, drafting a memorandum, setting up a company name, drafting, discussing and accepting a company contract and opening a bank account at BUCTBANK (the bank of the Bulgarian Center for Training Firms).

After receiving a communication from the Bulgarian Center for Training Firms that the registration of the company was successful, an internal organizational structure for the new training company was established. This included the selection of a manager and the creation of the departments of the company, such as sales and accounting. The next step was the official appointment of the company staff, the creation of employment records and registration of labor contracts with the institutions of the Bulgarian Center for Training Firms. After that the company set about was ready to commence commercial activity with the preparation and signing of contracts with customers.

PROJECT RESULTS AND ESSENTIAL EVALUATION INDICATORS

The results were:

- establishment of a training center at UNWE.
- creation by the Department of Accounting and Analysis of a curriculum for the training of students in a "training enterprise"
- establishment and operation of "training enterprise" – FAF (one during the project).
- creating a website for the "training enterprise";

- presenting the results of the project with the participation of representatives of the academic community (lecturers and students), the Ministry of Finance, professional institutions and employers' organizations;
- participation of students and lecturers in national and international events within the network of the training enterprises;
- participation in committees evaluating the activity of student training enterprises;
- successful suggestions for the creation of competitions specifically for student training enterprises in Bulgaria;
- publications in the paper publications and on the websites of the Bulgarian Center of Training Firms and the worldwide network of training companies EUROPEN-PEN International, publications in specialized publications.

Students who received the training gained a real sense of work in an accounting firm by performing the activities of the accountant and the registered auditor; they learned to work with state institutions, communicating with the services of the Bulgarian Center of Training Firms; they created lasting contacts with other companies and institutions in the network of training companies in the country and abroad.

CONCLUSION

The project for the development of a training enterprise for the students of FFA and the Department of Accounting and Analysis at the University of National and World Economy was an immense success. Although new in the world of training companies in Bulgaria, universities are already showing a strong interest in this form of entrepreneurship education. There is an increased participation at the International Fair of the Training Firms "TF FEST - Young Entrepreneur".

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ACCOUNTING, AUDIT AND FORENSIC SCIENCE
Professional paper

CRYPTOCURRENCIES (BITCOINS) IN FINANCIAL REPORTING - NEW CHALLENGE FOR ACCOUNTANTS

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Abstract:

As the exchange and trade with cryptocurrencies is steadily rising, consequently, they become subject to financial reporting. The essence of financial reporting derives from the objective to provide stakeholders of an enterprise with sustainable information about the financial well-being of the business. Accountants might face complications meeting the objective of financial reporting considering cryptocurrencies such as Bitcoins due to the absence of guidelines in both, IFRS and US GAAP. In the first part, this paper applies the existing IAS and IFRS guidelines to this practical issue and contributes to the process by which diversification in practice can be avoided. Broadly speaking, the problem can be addressed by classifying Bitcoins as intangible assets. Whereas, Bitcoins fail the definition of cash, cash equivalents, financial instruments, as well as the definition of inventory. In the second part, a discussion concerning non-financial reporting of Bitcoins can be found.

Keywords:

cryptocurrency, classification, financial reporting, intangible assets, non-financial reporting

INTRODUCTION

Bitcoin is a digital currency and is often referred to as cryptocurrency. It is the "world's first completely decentralized cryptocurrency" (J. Brito, & A. Castillo, 2018). Recognizing the special aspect of Bitcoins takes an in-depth look at the founding principle, which is the usage of cryptography to control the transfer of money without depending on central authorities (Bitcoin Wiki, 2018). Corresponding to the official website of Bitcoin, one of the first steps in acquiring Bitcoins is to set up a digital wallet, on your smartphone or computer. After setting up your digital wallet you automatically receive an individual private and public key to maintain a secure exchange within the market of Bitcoins, as these keys function as a signature. After completing these steps, the mining of Bitcoins can begin, which is simply the process of updating the public ledger (Bitcoin, 2018). Bitcoins can also be purchased for a certain amount of money. The Bitcoin system is built as a peer-to-peer network. Expressed in other words, this means that there is no central authority issuing new money or tracking transactions, since this is achieved by the means of the network collectively. As a Bitcoin is transferred from user A to user B, user A adds the public key of user B to the Bitcoin. Now user B is the owner of the Bitcoin and can either keep it or transfer it to another user. At the same time, user A is not able to send the already issued Bitcoin to another user because a public ledger of all previous transactions is collectively maintained by the network. Prior to each transaction, the validity of a Bitcoin is checked (Mahr, 2013). The reason that prevents the Bitcoin from being spent twice is called blockchain. Each transaction bears a small fee that is credited to the user that is maintaining records in the general ledger on the network (Mahr, 2013). It could also be said that the blockchain is a public registry that stores transactions in a network and is replicated on every computer that uses it, which makes the transactions forgery-proof.

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The amount of Bitcoins that can exist is limited to 21 million; as a result, their value can be increased due to the fact that Bitcoins are scarce resources. Supply will run out at one moment, it is estimated that this will happen in the year 2140 (Bitcoin Wiki, 2018). At the beginning of the first paper as of 22 February 2018 “the total number of bitcoins that have already been mined (…)” (Blockchain, 2018) was 16,878,938, close to the end of the second paper as of 6 July 2018 the number increased to 17,133,013. This indicates a growing market.

Due to the fact that there are no guidelines in neither IAS nor IFRS until this point, this paper is a result of a systematic review of the existing IAS and IFRS guidelines compared to the essence of Bitcoins. This review paper furthermore represents an extension of a previous article of the author written together with Ph.D Marina Protić (M. Protić, & M. Groeblacher, 2018). Also, further literature was used from other papers focusing on Bitcoins, as well as a few reliable online sources from well-known companies such as E&Y. Additionally, a study from Citrix on Bitcoins (2018) and the EU Directive (2014/95/EU) on non-financial reporting have been examined. However, Bitcoins have rarely been studied directly in terms of financial reporting. In accordance with (Citrix, 2018), it can be noted that a great number of German companies is in the possession of Bitcoins. 500 IT- decision makers participated in this study, all from companies with more than 250 employees. Still, it was not possible to find out which companies are in concern. Several publications released in recent years documented the rise and fall of Bitcoin in terms of exchange rates and market capitalization. To this date, Bitcoins remain the cryptocurrency with the largest market capitalization next to more than one hundred other cryptocurrencies (Coin Ranking, 2018).

CERTAIN ISSUES OF BITCOIN CLASSIFICATION IN ACCOUNTING

Now that the critical building blocks concerning the Bitcoin are settled, the next question is what Bitcoins represent in terms of accounting and how accountants can classify Bitcoins that are held by an enterprise.

Bitcoin ≠ Cash

“Cash comprises cash on hand and demand deposits” (IAS 7 (6), 2018). Both terms are not applicable to Bitcoins. As cryptocurrencies are not issued or backed by any government or state, the value of it completely underlies the demand and the supply of the market. And due to its new concept, there are huge fluctuations in the value of Bitcoins, as it is illustrated in the chart below (Bit/€) we can notice huge fluctuations, especially from the beginning of the year 2012 until the year 2014, an increase from 10€ up to 500€+ can be arbitrated. Additionally, compared to its starting value of a few euros and today’s value of 10,000€, which is an additional indicator for its great fluctuations.

Figure 1. This figure represents the value of Bitcoins expressed in € for the time period from the end of the year 2011 to the beginning of 2018(Ariva, 2018)

Bearing this in mind, we can conclude that in this case the cryptocurrency cannot be valued as cash or demand deposits since it does not meet the definition prescribed in IAS 7.

Bitcoin ≠ cash equivalent

As defined in IAS 7: "Cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value" (IAS 7 (6), 2018). Due to its new concept as a medium of exchange, there are huge fluctuations in the value of Bitcoins. In order to address comprehensively the significant fluctuations in its value, some dates have been extracted and illustrated in table 1 below.

Table 1. FX rates Bitcoun/€

FX rate as of	Bitcoin	€
1.11.2011	1	2,44676€
1.11.2017	1	5.358,09€

Source: (Oanda, 2018)

As illustrated in table 1 above the exchange rate as of 1st November 2011 (1 Bitcoin = 2,44676€) and the exchange rate as of 1st November 2017 (1 Bitcoin = 5.358,09€), this demonstrates a great percentage change with an increase of 218887.15 %.

Another vivid example that stresses the enormous fluctuations that Bitcoins underlie is given next: FX as of 8th January 2018 (1 Bitcoin = 13.878,9€) and the FX as of 8th February 2018 (1 Bitcoin = 6.397,87€) (Oanda, 2018). This represents a decrease of 53.9 % in just one month. This makes it nearly impossible to exchange Bitcoins for a known amount of cash.

With reference to, the above-given table and the previous example we can clearly determine that the changes in the value of Bitcoins are *significantly high*, construed accordingly we can clearly identify that Bitcoins hold a significant risk of changes in value within them and hence, the market of Bitcoins is a volatile market.

If one looks at the way Bitcoins acquire their value, we find that they obtain their intrinsic value due to its users, that exchange Bitcoins for goods or services. An important implication of these findings is that this market is growing, but is at the same time volatile, which contributes to the opinion that the Bitcoin is rather a speculation tool than a currency.

Bitcoin ≠ financial instrument

In Germany, Bitcoins have been classified as financial instruments in 2013. Meanwhile, this classification has been abolished again. Therefore, in the next step, the definition of a financial instrument is discussed and why it does not fit into the definition of Bitcoins. A definition for financial instruments is given by IAS 32 in which they are equal to "any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity" (IAS 32: Financial Instruments Presentation, (11)). Bitcoins itself do not bear any contractual right to receive a good, service, cash or anything else. Although this is self-explanatory, it must be pinpointed that a Bitcoin can be in neither case a liability or equity instrument. Another counter-argument preventing the classification of Bitcoins as a financial instrument is the fact that in the first place they fail the definition of financial assets (IAS 32 (11), 2018). As indicated in the previous section 2.1 Bitcoins cannot be classified as cash. Neither, are they an equity instrument of another party nor do they represent a contract. Hence, the conclusion here is that it is impossible to classify Bitcoins as a financial asset. As they do fail this definition they cannot be taken further into consideration of representing a financial instrument since one of the pre-defined requirements is the classification as a financial asset.

Bitcoin ≠ inventory

According to the scope section of IAS 2: Inventories do not exclude intangible assets (IAS 2 (2-5), 2018). But the assets that fall into the definition of inventory must be: „(a) held for sale in the ordinary course of business; (..)" (IAS 2 (6)). The reason why Bitcoins are most likely to fail the definition of inventory is that it is very improbable that Bitcoins represent the ordinary course of a business as they might not be traded consistently enough. Moreover, soon the process of trading and acquisition of Bitcoins will be affected due to new laws on money laundering where the scope will also include cryptocurrencies. This would then aggravate specific entities in performing their ordinary course of business.

Bitcoin = intangible asset

IAS 38 prescribes that "an intangible asset is an identifiable non-monetary asset without physical substance. "(IAS 38 (8), 2018). The previous conclusion that Bitcoins do not meet the definition of cash, and even less possible is the obtaining of a fixed or determinable amount for it (see figure 1 and table 1). By taking into consideration the previous statement, as well as the fact that Bitcoins cannot be defined as financial assets nor have a physical substance, it can be said that the above definition of IAS 38 matches to Bitcoins. To justify this conclusion, the requirements that must be fulfilled for a non-monetary asset to be identifiable will be analyzed. In accordance with IAS 38 (12) "An asset is identifiable if it is either:

(a) is separable, i.e. is capable of being separated or divided from the entity and sold (…) regardless of whether the entity intends to do so;

(b) arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations." (IAS 38 (12), 2018).

It is possible to separate Bitcoins from the entity and to sell them or to exchange them individually. In a word, the first part of this definition is applicable to Bitcoins. Point (b) is not applicable to Bitcoins. Considering that, only one point of the two has to be applicable it can be said that Bitcoins also fulfill this area of the definition. Back to the roots of accounting and the framework of financial reporting, an entity has to have future economic benefits from an asset, as well as control over it (IAS 38 (8), 2018). Pursuant to IAS 38 (13), it is possible for an entity to have control over an asset and future economic benefits arising from it even in the absence of legal enforceability, as an alternative the entity may be able to find another way to control the future economic benefits (IAS 38 (13), 2018).

Concerning the determination of the useful life of an intangible asset E&Y gives a greater insight, stating that in if there no law, regulation or contract and further factors constrain the useful life of an intangible asset it shall be treated as indefinite (E&Y, 2018).

According to IAS 38, assets with indefinite useful life are not subject to depreciation (IAS 38 (107), 2018).

Having outlined the main arguments, the conclusion is that in terms of accounting Bitcoins are no currency, but *intangible assets with indefinite useful life and hence, are not subject to depreciation*.

There is also, however, a further point to be considered the recognition of an intangible asset which is that it can *only* be recognized as an intangible asset if the entity can expect future economic benefits from it and that the costs can be measured reliably (IAS 38 (21), 2018).

In this case, the entity's management is responsible for the best possible estimation of the probability of future economic benefits by using reasonable and acceptable assumptions and evidence based on the overall economic conditions at the time of initial recognition.

IAS 38 (24) prescribes that an intangible asset shall be measured initially at cost (IAS 38 (24), 2018). As previously stated there are two ways of acquiring Bitcoins, buying and mining. When buying Bitcoins on a virtual market we exchange it for a certain amount of money, which represents the purchase value. When it comes down to acquirement through the mining process, the Bitcoin represents an internally generated intangible asset.

According to IAS 38 (51-53) difficulties arise in the process of recognition due to the question if and when the asset will constitute to the economic benefits, also sometimes it is not possible to distinguish the expenditures for the internal generation from the cost of maintaining. In this case the framework for the phase of research and development must be applied (IAS 38 (51-52), 2018). To determine whether such an asset can be recognized depends on whether the generation is categorized as research or development phase.

If the two phases cannot be distinguished from each other, the entity treats the incurred costs as if they emerged in the research phase. Intangible assets that originate from a research phase shall not be recognized. Conversely, intangible assets that arise from development can be recognized as assets if they meet the specific criteria prescribed by IAS 38 (53) - (57).

If we assume that the mining process does not imply the development phase, but only the research phase according to IAS 38, Bitcoins acquired through mining cannot be recognized as an asset, but all expenditures made for the purpose of its acquisition are recognized as the expense of the period.

However, if the mining process can meet the requirements of the development phase as required by IAS 38 (57), then their value is recognized as one of the intangible assets.

Concerning the measurement as prescribed by IAS 38 (74-75) after initial recognition, an intangible asset shall be measured either with the cost model or revaluation value (IAS 38 (74-75), 2018).

NON- FINANCIAL REPORTING AND BITCOINS – BRIEF DIGRESSION

In the past century, not only the financial sustainability of an entity became crucial but also the reputation in terms of the following examples such as human rights and appropriate taxation.

The recently issued EU Directive, which was published in 2014, on non-financial reporting aims to improve transparency by providing stakeholders with relevant, useful as well as comparable non-financial information about social impacts and risks related to environmental matters, social and employee aspects, respect of human rights, anti-corruption and anti-bribery issues as well as diversity in their board of directors. This EU Directive is applicable since 2017 throughout the EU.

Entities within European Union member states that have more than 500 employees, 20€ million balance sheet total or 40€ million revenue are required to disclose information on non-financial performances from 2018 onward. Besides, entities not incorporated within this scope may issue these reports (European Commission, 2018).

Even though Bitcoins are making the headlines in recent times due to their wide fluctuations in value, they also make it to the headlines of the press due to criminal misuses, such as money laundering, tax evasion, and illicit trade. As Bitcoins become more and more popular the hacker attacks are also increasing.

This becomes a very critical issue, especially for people who have been mining Bitcoins from the beginning on, the effect of that is that millions of dollars in Bitcoins can be stolen using only phone numbers, without any chance for reimbursement (Forbes, 2018).

Such weaknesses in the Bitcoin network, respectively in its security may have an impact on the overall reputation of companies holding Bitcoins. For this reason, it is advisable to implement the disclosure of non-financial reports as a practice to inform the stakeholders about reasons for holding cryptocurrency and its use, as well as policies regarding risk management. It can be seen from the previous analysis that, the market of Bitcoins is volatile and hence, could result in a huge loss in profit for the entity itself and consequently its stakeholders, concerning this matter the risk management policies are of crucial importance for stakeholders.

Currently, large companies that accept Bitcoins as a means of payment such as Microsoft (Microsoft Support, 2018) do not disclose any information about this event nor the accounting and taxation treatment of these in their notes to the financial statements.

Apart from the above mentioned, as the now applicable EU Directive is also concerned with environmental matters and many mining entities are establishing their business in countries where the costs of electricity are relatively low, the environmental impact that the mining of Bitcoins is causing must be scrutinized.

A very recent study evaluates the environmental impact more specifically with possible solutions such as fiscal policy instruments, environmental taxes and regulations that can constrain certain countries from mining more Bitcoins depending on whether the source of energy that is used is renewable or not, as well as the devices used for it (Truby, 2018).

Whilst the discussion in the preceding paragraph, a recent study, reveals that German companies do not hold digital currency anymore just for the case of a hacker attack with possible ransom in form of the virtual currency, but also because a lot of them are planning to use the cryptocurrency to pay providers, employees or trade them and use the smart contract function of the blockchain. The study was already conducted in August 2017 once. Anyhow, the reserve in average slightly increased from 24 to 27 Bitcoins. (Citrix, 2018).

As mentioned in the previous section, the companies are planning to expand the use of their digital currencies in form of payment for employees or providers. This approach seems to lead in the right direction since the use of Bitcoins is limited compared to other assets, which can be rented or leased, when an entity is not able or willing to use it in their course of business.

CONCLUSION

Considering, the basic functions of currency Bitcoins are exempted from this definition. As Bitcoins, cannot create price stability, nor serve as a unit of account or as a legal mean of payment, they cannot be defined as currency.

All things considered, the conclusion is that in terms of accounting Bitcoins are no currency, but *intangible assets with indefinite useful life and hence, are not subject to depreciation*.

In order to rectify the problem of the measurement, purchase value is applicable if the Bitcoin was acquired on a virtual market and fair value for the subsequent measurement also in case of mining.

As the exchange and trade with cryptocurrencies are steadily rising another accounting guidance in IFRS or US GAAP will be needed to avoid diversification in practice. This new standard should also allocate essential information to prevent wrong interpretation. In the meantime, accountants should disclose precisely how they classify and measure the cryptocurrency in the notes to the financial statements.

Considering the findings from the above sections, non-financial reporting especially in terms of the risk management for companies that hold Bitcoins and the environmental impact that Bitcoin mining companies are causing, it will most likely become of crucial importance to disclose non-financial information in behalf of the overall reputation and in the interest of investors, as well as other stakeholders.

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ACCOUNTING, AUDIT AND FORENSIC SCIENCE
Scientific - review paper

ANNUAL BUSINESS REPORT AS A SOURCE OF INFORMATION TO USERS OF FINANCIAL STATEMENTS

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Abstract:

The Annual Business Report is an obligatory component in the external reporting process played by business entities, usually those who are considered to have public accountability (quoting companies, public companies, banks, insurance companies, investment funds, etc.). Although in accordance with the relevant international accounting regulations they do not form an integral part of the Annual Financial Report (general purpose), bonds of its preparation are mainly presented exactly by information that, by their very nature, belongs to the financial statement, including notes ti financial statements. This paper is devoted to the analysis of the usual reporting practice through the Annual Business Report in the area of the former Yugoslavia. The aim is to point out possible improvements to the existing legal and reporting practices so that, especially external users of information on the operations of publicly-accountable reporting entities, get the highest quality information they need to make various business decisions.

Keywords:

Annual Business Report, Annual Financial Report, external users, public accountability

INTRODUCTION

Financial reporting in the countries of the former Yugoslavia has long been based on the application of the International standard of financial reporting (IFRS). The most common reporting formats are those in which the users of financial statements get presentation of information about financial position of the reporting entity, adequacy of cash flows and cash equivalents generated in the reporting period, changes in personal equity and the like. Even though the application of international standards, unlike principles of traditional financial reporting, made it possible to focus reporting significantly shifted from the past to the present or even the future, making the information in the financial statements made especially more relevant for users, such as investors the fact is that the usual way of reporting does not provide a sufficient amount and quality of information necessary in making business and other decisions by the various categories of users. Eventually, it turned out that for users of financial statements, other than purely financial, it is necessary to present the various non-financial information that belong to the primary area of business reporting. The system which is in a way the boundaries between the financial and the business, and external and internal reporting, commonly referred to as an integrated reporting system through which customers, through a report presented information on social, environmental and economic aspects of business reporting entity. Although, it is not a direct result of listed companies as intend other entities important to introduce a system of integrated reporting, annual business report presents an essential component of that system. Depending on the applied legislation, through this report, among other

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things, present information on the risks to which the reporting entity is exposed, assessing the expected future development, the events that occurred between the date of the financial statements and the date of their adoption and publication, applied the rules of corporate management and others. The aim of this study was to identify the rules of reporting through the annual reports of the former Yugoslavia, assess the extent to which it essentially as such can contribute to an appropriate level of satisfaction more or less complex information needs of stakeholders information on the operations of the reporting entity, and to provide specific recommendations whose implementation would be supported by the transition from the current activities to the concept of integrated reporting.

LITERATURE REVIEW

The initial develeopment of the international framework for integrated reporting under the auspices of the International Integrated Reporting Council (IIRC) asted nearly 4 years and ended in late 2013. According to this Framework (International Integrated Reporting Council - IIRC, 2013), an integrated report is a concise communication on how the organization's strategy, governance, performance and prospects in the context of its external environment can lead to the creation of value in the short, medium and long term (Integrated Reporting, 2018) he main purpose of integrated reporting is that providers of financial capital (own and borrowed, op. aut.) Through a variety of financial and nonfinancial information to explain the organization over time creates some (added) value.

International Federation of Accountants (IFAC) also strongly supports the establishment of the concept of integrated reporting. According to the organization, integrated reporting is the way to achieve a more coherent system of corporate reporting, by fulfilling the need for a report through which provides a more complete picture of the organization's ability to create value. Integrated Report can be used as a ''roof report'' for a wide range of other reports, including financial, providing greater interconnectivity between them and a better understanding of all aspects of the reporting entity by different groups of stakeholders. IFAC also strongly supports the action of IIRC and the application of the International framework for integrated reporting.

The paper entitled *Integrated reporting and investors* (Seraphim, 2014) presented the results of research that analyzes the relationship between the integrated reporting and the quality of the structure of a base of investors who are interested in investing in certain companies. The author concluded that the investments in companies that have a system of integrated reporting long-term oriented investors have shown a significantly higher interest as compared to provisional, that is, investors are willing to invest from predominantly speculative reasons. In his view, this statement is truer for companies that have ta potential for strong growth and are not considered family-owned companies. The paper *Research program on integrated reporting - a new theory and practice in the emerging* (Dragu and Tiron, 2014), a work in which the authors present the essence of the basic theory relating to the implementation of a new concept of reporting the results of the review of the previous literature in the field of publishing information on the operations and sustainability of corporations, non-financial reporting, etc., in order to understand the diffusion of information and preparation of integrated reports. In addition to these, and many other foreign authors in recent years have devoted special attention to the importance of this concept of reporting on what data can be found on the relevant web pages. In Malinić and Savić' view (2011), the overall responsibility of enterprises by stakeholders can be classified as a financial and strategic dimension. Survival of the business on going concern basis assumes that the company fulfills the two types of liability, or to create a satisfactory level of value for all stakeholders which is why, according to the author, the general public should be informed about all aspects of business. The paper *Accounting non-financial reporting - in response to the challenges of modern enterprise management* (Malinić, 2015) by, among other things, represents the characteristics of the dominant concepts of financial reporting, with a particular focus placed on the concept of the accounting non-financial reporting, its substance and the necessary present, time, space, the user and organizational and functional basis. It is considered as one of the most important areas of non-financial reporting, the relationship of this concept as a segment accounting information system and modern enterprise management. In the authors' paper *Integrated Reporting - a new approach to corporate reporting and governance* (Prošić, 2015), integrated reporting is an opportunity to present a comprehensive picture of the business in a clear, concise, coherent and comparable way. The idea of an integrated reporting and integration with non-financial data in the annual report brings many advantages and benefits compared to the existing model of corporate reporting. This approach to the reporting entity and the community as a whole makes it possible to consider the substantive issues facing the business and shows how to create value for shareholders and society as a whole. Integrated reporting in recent years becomes a theme-represented in other relatively numerous scientific papers prepared by local authors.

RESEARCH METHODOLOGY

Our research question ios: "Did the preparation and presentation of the annual business reports by companies on the territory of the former Yugoslavia contribute to the development of the concept of an integrated report to the higher awareness of stakeholders on the economic as well as social and environmental aspects of the business entity reporting"? For the purpose of research, publicly available data on the business of companies in Bosnia and Herzegovina, Serbia, Montenegro, Croatia and Macedonia were used. Those are mostly companies whose securities are quoted on the stock exchange. The aim of this study was to analyze the existing practice in this regard and indicate the possible improvement in the structure and quality of the annual report on operations which, in accordance with the relevant legal regulations, present in the countries of the former Yugoslavia, and answer the question whether the perspective was justified and realistic as possible to carry out the integration of the report of the comprehensive report produced in the integrated reporting system. In this regard, we formulated the main working hypothesis that reads "Further development of the standard system of corporate financial reporting can ensure better information for stakeholders on all aspects of the reporting entity". Auxiliary hypothesis is defined in order to prove that the Annual Business Report can be an integral part of a comprehensive report on operations generated in the integrated reporting system.

Methodology The research undertaken for the purpose of proving hypotheses includes methods of *analyzing* the relevant legislation in this area and existing reporting practices in order to present non-financial information and indicators, with a particular focus on reporting through annual performance reports, *comparisons* statutory provisions with practices prevalent in the country in the former Yugoslavia, *the logical conclusion* of the results of our research, *inductive-deductive conclusion* in order to assess the extent to which information is presented through the annual reports on the operations correspond to information which is expected to generate an integrated reporting system, and whether and to what extent the development of an integrated system of reporting on local areas could contribute to the process of decision making, *descriptions* of the purpose of describing the results obtained, and others. The research was carried out on selected non-statistical sample of companies whose financial and other reports are available publicly on stock exchanges in the former Yugoslavia or on their own websites. The authors believe that this method of selection of a company under observation does not diminish the relevance of results because it is a relatively significant number of listed and other companies in this particular case make the key research population, or companies that have a direct or constructive legal obligation to present annual reports on the operations and one of which is really possible to expect the application of the integrated reporting concept.

RESULTS OF RESEARCH AND DISCUSSION

According to the results of the research, issues relating to the obligation to prepare annual or other similar statements of operations are mostly regulated through three types of material regulations, in almost all cases directly through a law that applies to the area of accounting (and audit) and the standards of corporate management, and indirectly, by determining the obligations and responsibilities of management or supervisory bodies, the regulations governing issues of importance for the establishment and operation of business / trade companies, public enterprises and the like. All surveyed countries, naturally, have adopted regulations governing the various issues in the field of accounting, provided that the laws in force in Slovenia and Macedonia cannot find the provisions relating to the obligation to prepare annual reports on the operations. Similarly, all countries have adopted standards of corporate governance, noting that there are no significant differences in their content, which is a result of the fact that it is generally accepted standards developed by the Organization for Economic Cooperation and Development (OECD), incorporated into local business practices.

According to the provisions of the law regulating the sphere of accounting (and audit), the annual business report should necessarily include all significant events occurred in the period since the end of the financial year to the date of the financial statements, assessing the expected future development of society, the most important activities related to research and development, information on the repurchase of own shares and share information on business segments, used financial instruments, provided this is important for the assessment of the financial position and performance of the company's operations, objectives and policy of the company regarding the management of financial risks, along with policies to protect against the risk of each planned transaction for which protection is required and information on the exposure to price, credit, market and currency risk, liquidity risk and other risks inherent in the business. Annual Report on the operations of companies whose securities are listed on an organized securities market must contain and display the applied corporate governance rules. Defined in this manner, the annual business report objectively contains a significant portion of non-financial information. Alongside with the information from the annual financial statements those non-financial information could represent important parts of the report that would be generated in the system of integrated reporting.

More important content (non-financial) report was certainly the one whose preparation is expected of companies, primarily among those listed above, which are obliged to apply the standards of corporate governance. According to the standard of corporate governance 13 - Disclosure and transparency of information, the company should provide timely publication and release of material information related to it, including the financial situation, business ownership and are managed by the company. Public disclosure of financial reports and other information society should enable the assessment of its value from the standpoint of legal status, financial position, business opportunities and rights in connection with securities, a report must contain comprehensible comments and analysis of business by the company management. All interested parties to make available relevant information on the operation and activities of the company, as well as all information about facts and circumstances that could have a significant impact on the share price of the company and to ensure the disclosure of information on development plans and their impact on the economic and social position of employees, trends and changes in salaries, protection and safety at work and measures to improve working conditions, the company's objectives, majority of owners, members of management and supervisory board members and their incomes, the reasons for the eventual resignation or termination of the contract and information about the auditor, the manner of distribution of profits, statutory changes, changes in company form and the establishment of the company, the policy of managing the company, transactions with related parties, foreseeable material risk factors and mechanisms for managing those risks (not in the field of trade secrets), issues related to employees and other stakeholders to work society, structure and management policy and the rights granted to the management to buy company's shares at lower prices than the market price (as the variable component payment for their work), published the takeover bid, changes in the portfolio of shares of individual members administrative/supervisory board and the like.

According to the results of the research, the official websites of all regulated markets of capital (stock exchange) which are organized in each of the surveyed countries in the former Yugoslavia, as a rule, are regularly published periodical and annual financial and audit reports of issuers of securities, information about significant events, statement on application of corporate governance standards and the like. In the annual reports on the business cannot be found on the websites of all the observed stock exchanges, but a significant number of listed and other, mainly large companies to publish on their own Web pages. A significant fact is that well positioned and the other companies are not publicly disclosed Notes to the annual financial report as part of a prescribed set of annual financial statements, but is incorporated into the audit report. However, it s not sufficiently clear whether it is the notes prepared independently by the management of the reporting entity or with some support by the engaged external auditors. Notes represent the additional source of financial and non-financial information whose purpose is to facilitate the understanding of the financial information included in other components of the financial statements (balance sheet, income statement, etc.). The advantage lies in the fact that it is prepared in relatively pure form, which may include an objective and (financial and non-financial) information that they have their place in the report, which is produced in the integrated reporting system.

Analysis leads to an conclusion that it is a fairly uniform formats and ways of reporting on different aspects of the business that are natural information cannot be presented through the financial statements. This results from the fact that the structure of the annual report on the degree of detail prescribed by the authorized regulatory bodies. However, previous years saw many examples in which t annual reports on the operations substantially equated with the annual financial statements (including the Notes to the financial statements), as well as by publishing practically duplicate procedure of financial reporting, and interested users are deprived of the other primarily non-financial information about the business and other relevant aspects (social, environmental, etc.).

Studies have shown that a standard structure of the correctly prepared (posted) yearly financial report includes basic information on the reporting entity, property and bodies, information on the basic indicators of the operations (including the performance indicators), realized on the base that is identified market segments, the extent, structure and the method of acquiring their own and others' effects, the activities on research and development, investments made in the reporting period, the method of quality management and business risks, environmental protection, business plans activities for the next period and the like. Comparing this with the expected structure, it is concluded that it is mainly adapted to the requirements of legislation in the field of accounting (and audit) and, to a lesser extent, the requirements contained in the standards of corporate governance. In other words, the degree of fulfillment of legislation directly stipulated requirements in terms of transparency of operations is higher in relation to the requirements included in the standards (the so-called "Soft law standards"), and in particular in relation to the requirements that could be considered part of customary norms and rules of business (commercial usages).

CONCLUSION

The obligation of preparation and presentation of the annual report on operations in the former Yugoslavia is still generally regarded as a mandatory part of the process of annual external financial reporting by businesses, especially those that have been found to have a public responsibility. This is the main reason that a number of reporting entities in the past did not make a particularly significant difference between the annual financial statements and annual report on operations. Information of stakeholders on various aspects of the business (economic, social and environmental) with annual reports on the operations carried out mainly in the extent required by the direct legal provisions. This concept of reporting is still not considered to be a concept of integrated reporting neither it is laid down in the relevant international framework. However, it could be a good start in the process and also a necessary transition to integrated reporting in the future. Bearing in mind that from domestic entities reporting can hardly expect to publicly present the reports whose preparation and publication of the law are not required, one of the main ways of improving the existing reporting practices implies necessary changes to the current legislation in order to create a clear legal prerequisites for, to the extent that the justified, be sure to establish an integrated reporting system.

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ACCOUNTING, AUDIT AND FORENSIC SCIENCE
Professional paper

SIGNIFICANCE OF THE COMPARABILITY ANALYSIS IN THE TRANSFER PRICING REPORT

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Abstract:
The subject of the research is a comparability analysis that has to be done in order to completely apply the arm's length principle and to properly do transfer pricing report by any of three methods (standard - transactional - methods, profit methods or other methods). The aim of the study is to underline the significance of a comparability analysis, especially from the aspect of answering numerous questions that arise during the preparation of the transfer pricing report. Some of the relevant answers are: the consistency of the comparability between controlled and uncontrolled transactions, correlation of the result obtained with the company strategy or contractual terms, use of the comparative analysis in the best way to complete transfer pricing report. The main hypothesis, which has been proven through the work, is that part of the comparability analysis (analysis of comparative conditions) can become the method for checking transfer prices.

Keywords:
transfer pricing report, comparability analysis, transactions, arm's length principle

INTRODUCTION

In all countries, tax authorities devote a lot of attention and time to business transactions that take place between related legal entities. The creation of a transfer pricing report is necessary to be attached to the tax balance. This report primarily refers to taxpayers who had transactions with the related legal entities.

If we want to apply arm's length principle and to compare a certain value, price or margin from a transaction with an unrelated legal entity to a transfer price, the transactions we compare (controlled and uncontrolled) are mutually comparable. All factors that may affect the price or profit must be included in the comparability analysis.

According to the Rules on transfer pricing and arm's length principle (2014), when determining the price of transactions between the related legal entities, the most important comparability factors of the application of the method of a comparable price on the market are:

1. The similarity of the transaction subject
2. Contractual terms
3. Economic or market conditions

In our tax practice, two methods (standard methods and methods based on winning) are most commonly used to check the transfer pricing of an enterprise. However, the third method for checking transfer pricing is increasingly present. According to the Corporate Income Tax Law (2001), in addition to these two methods for using the determination of the existence of transfer pricing according to the arm's length principle, the obligor can use any other method based on which it is possible to determine the price of the transaction by using the arm's length principle.

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The aim of the study is to underline the significance of a comparability analysis, especially from the aspect of answering numerous questions that arise during the preparation of the report. In accordance with the above, the subject of the research is a comparability analysis that must be done in order to completely apply the arm's length principle, and for properly done transfer pricing report by any of three methods (standard - transactional - methods, profit methods or other methods). The main hypothesis is that part of the comparability analysis (analysis of comparative conditions) can become the method for checking transfer prices, which has been tested and proven in the work through a practical example accompanied with relevant literature.

In accordance with the defined hypothesis, aim and subject, the research contains five chapters including introduction and conclusion. The next chapter shows relevant literature review for the research; methodology is presented in the third part of the paper, and the results and discussion are presented in the fourth chapter. The conclusion is shown at the end of the paper.

LITERATURE REVIEW

A comparative analysis of development of transfer pricing reports is well explained and illustrated through a handbook for transfer prices by Negovanovic M. et. al (2015). The same handbook cites generally observed characteristics of particular importance: physical characteristics, quality and reliability, technical and technological characteristics, quality of embedded material, availability, offer... This observation helps us find the characteristics of the product for the comparison in the observed case. Negovanovic et. al (2015) confirmed that functional analysis was primarily important because in the context of the transfer pricing analysis it took responsibility for identifying the economically significant activities and responsibilities that were being undertaken and taken over by businesses in the business relationship, the significant assets they used and the significant risks they were exposed to. This analysis is in fact the process which identifies certain functions that each of the companies from the established business relationship performs.

Since transfer prices are of an international character and relate to all related parties, regardless of where the seat of the parent legal entity is located, and where the seat of the dependent legal entity is, the conclusions of the Informal Meeting on practical transfer pricing issues for developing countries (2011). On the same UN meeting on practical transfer pricing issues for developing countries chapter 7, the relevant information on the industry can be broadly classified in analysis of branch should be:

1. Global economic trends and developments related to the industry to which the enterprise belongs;
2. Economic trends in the taxpayer's resident country for the same industry;
3. Market position of the enterprise and surrounding economic conditions.

Also, according to the UN Meeting on practical transfer pricing issues for developing countries chapter 7, the important rule is that the return earned by entities involved in a transaction varies directly with the importance of the performed functions, the degree of risk undertaken, and the nature and value of the deployed assets in this way it is explained the complexity of functional analysis, which is applied, as well as what all aspects have to be considered in the functional analysis itself.

This study also relies on the OECD Guidelines for the Implementation of Transfer Pricing Rules for Multinational Enterprises and Tax Administrations (2010), most of the concerns and parts of the Regulation itself derive strength from these guidelines. The full explanation of the shortening of the time, shown through this work, spent on the creation of the transfer pricing report itself lies in transfer pricing rules - Article 2, paragraph 2 (2014), that says that the taxpayer is obliged to show in his transfer pricing report, among other things, well-made functional analysis.

The work relies mostly on the Rulebook on transfer pricing and methods that are arm's length principle (2014) when determining the price of transactions between related parties, primarily because the transfer pricing report is necessary to be attached to the tax balance, and therefore it must be in accordance with regulations and laws.

METHODOLOGY

In order to successfully carry out a comparative analysis, it is necessary to thoroughly analyze all five factors of the comparative analysis.

The OECD Transfer Pricing Guidelines organization has defined the five comparability factors that are most important in transfer prices in 2010. Those are:

1. The characteristic of the goods or services transferred.
2. The functions performed by the parties (taking into account the assets used and the assumed risks), in relation to the controlled transaction. An examination is often referred to as "functional analysis",
3. The contractual terms of the controlled transaction.
4. The economic circumstances of the parties.
5. The business strategies pursued by the parties in relation to the controlled transaction.

The method used through the work is the case study method. This method of work is based primarily on regulations, legal regulations, professional scientific papers and thoughts from the relevant field published in the period from 2010 to the present. The entire literature, analysis and conclusions drawn in the paper are linked with a practical example of a company. The company which is in the focus of the analysis is in the field of wholesale of pharmaceutical products Lekovit d. o. o. from Šabac in the further work is labeled Company L. The main sales range of this company consists of medicine, shortage and parafarmation from domestic and foreign suppliers. The company sells its assortment on the territory of the Republic of Serbia. The related legal entity of this company is its buyer, a company that also operates on the territory of the Republic of Serbia in the field of trade in medicines and pharmaceutical products - a pharmacy in further work designated as Company ZU. The analysis was made on the basis of the data obtained from the financial report with opinion of the auditors available on the website of the Business Register Agency of the Republic of Serbia for the observed weekly period of one year, more precisely for the tax year 2016.

RESULTS AND DISCUSSION

The first among the factors of comparability to be considered are the characteristics of the goods and services, as it was explained in Negovanovic (2015), that are the subject of the transactions. This factor is particularly important because the differences in goods and services directly reflect the price level in the open market, or in our case. In our case, we will look at (7 drugs in the product group of Company L that participate in sales revenues with more than 50%) generic names of drugs and their protected name, dose of the drug and the exact name of the manufacturer, e.g. Bromazepam 3mg, Hemofarm. If the entire group of customers (15 of them participating in more than 50% of the company's turnover) during the entire tax period for which the tax balance is sent out by these seven products, we can consider that the characteristics of the goods and services that are the subject of the transactions are well done and can be used in further analysis.

The obtained results are based on the factors that need to be analyzed in a comparative analysis, explaining each factor and the result obtained by the analysis.

For the analysis of these factors in functional analysis, we will use the following tags (-) - the company does not perform the function, does not hire assets and is not exposed to risk, x - smaller amount of engaged funds, risk exposure and performance, xx - moderate amount of assets, risk exposure and performance, xxx - significant amount of engaged funds, risk exposure and performance.

Table 1 represents analysis of the distribution of functions for Lekovit d. o. o. (Company L) and its related party (ZU Company):

According to the Negovanovic et. al (2015) through the presented functional analysis it was established that the functions that are of great importance and which show the highest level of responsibility for price differentiation for the Company L are quality control, market development, purchase goods, administrative support, the company also has significant material assets and the risks with which they face customer lending risk, risk payment and country risk. What needs to be pointed out is that the related party Company ZU has the same functions and assumes responsibility for the same property and similar risks. Company L applied its functions, assets and risks in transactions with other unrelated legal entities, and that other unrelated legal entities from the same branch as a related legal entity, it can be concluded that it is impossible to differentiate the price only with the related party (Company ZU) based on these functions.

The methods for conducting transactions between related and unrelated legal entities are determined in contracts, where each contractual requirement is precisely defined. What is important to note is that frequent cases where wholesale (as in our case) in their offer have more than 15,000 items, it is unlikely that there are defined terms of sale for each item. In any case, for a good comparability analysis, it is necessary to check each contract of each selected business entity for the analysis. Appendix 1 represents table which cover in the transfer pricing report, for this company, was made for each of the seven mentioned products. Also, from this analysis, it can be seen whether a related legal entity is in a privileged position in relation to other customers of Company L.

Like the functional analysis and the economic circumstances in which the observed companies are located, they must be specifically reflected in the transfer pricing report. For the observed companies in accordance with classification in analysis of branch UN meeting (2011), Appendix (2-4) presents the economic circumstances. Based on the presented analysis of the economic circumstances, we can say that the market in which Company L operates, operates a related party too, but also other independent legal entities, and that there are no differences that can have a significant impact on the price and which concern the economic circumstances.

The observed company identified a strategy of expansion on the market. Since in our case the state prescribes prices, we can conclude that the formation of the price of business strategies applied by the company cannot have an impact on the price of the case, but it has an impact on price differentiation.

Table 1. Example of functional analysis

	Functional analysis		
	Name of the company	Company L	Company ZU
	The country in which the observed company is located	Republic of Serbia	Republic of Serbia
	Relationship between companies (parent / dependent / associated / joint venture / other type of relationship)	Motherly	Dependant
	Classification of Entities (Manufacturer, Distributor, etc.)	Distributor	Seller
A	Description of functions		
	Manufacturer	-	-
	Product development	-	-
	Purchase of goods	Yes***	Yes***
	Storage	***	***
	Quality control	***	***
	Market development	***	***
	Sales and marketing activities	Yes***	Yes***
	Post-sales activities	***	***
	Administrative support	***	***
	◆ Determine corporate strategy ◆ Human resources management ◆ Information technology ◆ Finance, accounting and payment transactions ◆ Law jobs	***	**
B	Property	***	**
	Material	Not***	Not**
	Intangible	***	**
C	Risk analysis		
	Market risk	* *	**
	Risk of stock supply	**	**
	Costumer lending risk	***	**
	Risk of stagnation in stock	**	**
	Risk of exchange rate	**	**
	Technological risk	**	-
	Risk of research and development	*	*
	Funding risk	*	**
	Risk payment	***	*
	General risk	**	**
	Country risk	***	* * *

Source: Table prepared by author

By comparing the characteristics of the goods from the analysis, we come to the conclusion that the goods that we used in the analysis are comparable to each other by the fact that all 15 largest customers ordered from Company L all of the 7 most frequent products from the assortment that were subject of analysis (for example Bromazepam 3mg, Hemofarm was ordered by each of 15 customers from the analysis), so we can go through the next steps of analysis.

Functional analysis has shown that the most important functions of Company L, that influence the price differentiation of used articles, are storage function, marketing control, quality control, etc. While the risks to be highlighted are risk payment and customer lending risk. Also, this functional analysis has been used to complete the transfer pricing report, as a mandatory element of each transfer pricing report, which shortened the time of making transfer pricing report.

The analysis of the contractual conditions showed that the contractual terms for each of the items and for each buyer are mutually comparable, and that the Company L sells goods related to a related party (Company ZU) in approximately the same quantities on the same market and under similar conditions as to other unrelated legal entities for the same goods. In addition, this analysis of the contractual conditions has been used as a method for determining transfer prices within the Other methods - an internal comparable price method combined with an externally comparable price. This way we confirmed the main hypothesis and part of a comparative analysis (contractual terms analysis) can become a method for checking transfer prices. This method is also relevant form the point of view of OECD Guidelines Article 2, paragraph 2 (2014).

Although both legal entities (Company L and Company ZU) operate on the same market under the same conditions with other competitors and unrelated legal entities, the conclusion of the analysis of economic circumstances for the purpose of comparative analysis is that economic circumstances have no impact on the formation of the price of medicines with Company L, but the prices of all the registered medicines for human use are regulated by the Serbian government, and on the agreed proposal of the Ministry of Health and the Ministry of Trade. In particular, the Law on Medicines and Medical Devices has determined that the government of the Republic of Serbia determines the prices of medicines for human use. In order to realize this competence, the government adopted the Regulation on the criteria for the formation of the price of medicinal products in accordance with this Regulation and the Decision on prices of medicines for human use, which specifies the specific prices for all registered medicines.

Since the Company L is based on the expansion of the existing market (by expanding cooperation with new customers), the conclusion is that the more favorable conditions that occur in transactions with unrelated legal entities are explained by this fact.

Going through these clues, we see that each element of comparative analysis has its own significant place.

CONCLUSION

The paper emphasizes the significance of the comparability analysis on the example of a large legal entity that is wholesale (Company L) and its related retail legal entity or healthcare institution pharmacy (Company ZU). The paper has proven that there is a comparability between the transactions of the observed company (Company L) with its related legal entity (Company ZU) and the unrelated real persons with whom it operates, i.e. that there is a connection between controlled and uncontrolled transactions. Thanks to this action we proceed to further creation of transfer it has been shown through the paper that the Company L strategy does not affect the price of products, but also that the result in terms of the existence of a transfer price is directly related to contractual terms. Of particular importance to the study are two items functional analysis and analysis of economic circumstances. The presented functional analysis for Company L and Company ZU and the analysis of economic circumstances were used in the transfer pricing report itself as a mandatory part of the report, which significantly shortened the time for the preparation of reports, and then it was determined by functional analysis that functions that influence the differentiation of prices Company L has storage, marketing control and quality control and risks of risk payment and customer lending risk it has been concluded inability to differentiate the price only in favor of the related party, and that economic conditions have no impact on the price in our case.

The main conclusion that has been made is that the main hypothesis is confirmed through the analysis of the contractual conditions itself by the fact that the tax base for Company L is not corrected, that is, the contractual conditions have become the method for checking the transfer prices, which belongs to the group of other methods for determining transfer prices through work.

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APPENDIX

Appendix 1. Contractual terms by invoices for medicine Bromazepam tbl 30x30

Bromazepam tbl 30x3mg	No Invoice	Invoice date	Quantity	Price	Rebate	Sum	Maturity date	Actually date of payment	Delay	% Cash discount	The way of distribution
ZU Related party	112313	23.04.2016	20	96		1.920	23.05.2016	30.06.2016	37	3.00%	Lekovits vehicle
Customer 1	193072	16.06.2016	20	96		1.920	16.07.2016	01.11.2016	76	13.00%	Lekovits vehicle
Customer 2	80785-plac	29.03.2016	8.000	96	11.6	678.912	13.04.2016	13.04.2016			Lekovits vehicle
Customer 3	96651	12.04.2016	20	96		1.920	12.05.2016	16.06.2016	30	12.00%	Lekovits vehicle
Customer 4	124914	25.04.2016	20	96		1.920	25.04.2016	04.05.2016	9	14.00%	Lekovits vehicle
Customer 5	129732	26.04.2016	40	96		3.840	26.05.2016	23.06.2016	28	11.00%	Lekovits vehicle
Customer 6	85672	01.04.2016	20	96		1.920	01.05.2016	04.05.2016	3	10.00%	Lekovits vehicle
Customer 7	91191	07.04.2016	12	96		1.152	14.04.2016	18.04.2016	4	9.00%	Lekovits vehicle
Customer 8	79013	28.03.2016	30	96		2.880	27.04.2016	11.05.2016	14	10.00%	Lekovits vehicle
Customer 9	84376	31.03.2016	200	96		19.200	30.04.2016				Lekovits vehicle
Customer 10	8960	15.01.2016	2	96		192	14.02.2016	23.03.2016	37	10.00%	Lekovits vehicle
Customer 11	176255	02.06.2016	1.200	96		115.200	17.06.2016	15.07.2016	31	13.00%	Lekovits vehicle
Customer 12	7612	13.01.2016	8	96		768	27.02.2016	01.03.2016	1	10.00%	Lekovits vehicle
Customer 13	181557	07.06.2016	60	96		5.760	07.07.2016	07.07.2016		11.00%	Lekovits vehicle
Customer 14	182921	08.06.2016	10	96		960	07.08.2016	08.08.2016		10.00%	Lekovits vehicle

Source: Table prepared by author

Appendix 2. Drug market in Serbia

Broj pakovanja					
	2012	**2013**	**2014**	**2015**	**2016**
TOTAL MARKET	243.900.725	250.183.141	245.525.489	268.885.508	274.766.319
ORIGINATOR Rx	35.243.760	39.120.466	38.618.649	40.881.366	44.420.969
GENERIC Rx	140.489.064	139.071.669	131.485.836	148.114.184	148.347.263
FS	27.794.440	29.324.769	31.088.725	34.104.964	36.519.166
OTC	40.373.461	42.666.237	44.332.279	45.784.994	45.478.921
Finansijski (EUR)					
	2012	**2013**	**2014**	**2015**	**2016**
TOTAL MARKET	669.167.659	748.290.614	718.182.547	729.139.587	782.443.462
ORIGINATOR Rx	250.692.949	286.729.434	279.886.505	277.039.648	303.215.733
GENERIC Rx	252.156.612	273.117.807	243.904.636	242.316.120	253.944.675
FS	91.023.147	104.565.859	108.515.450	118.613.135	129.917.897
OTC	75.294.951	83.877.514	85.875.956	91.170.684	95.365.158

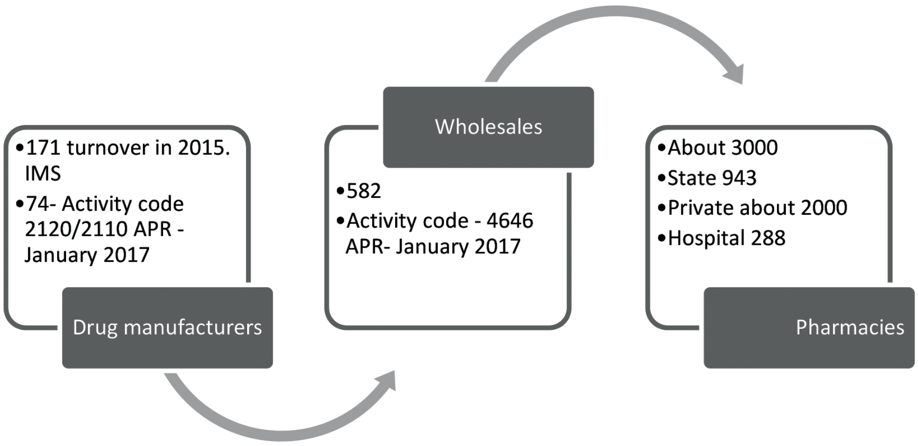
Source: Chamber of Commerce and industry of Serbia (2012-2016)

Appendix. 3 Sales channels on Serbian market

Number of packing					
	2012	**2013**	**2014**	**2015**	**2016**
Total	243.900.725	250.183.141	245.525.489	268.885.508	274.766.319
Hospitals	27.893.934	28.297.153	24.951.222	23.803.071	22.575.853
Pharmacies	216.006.791	221.885.988	220.574.267	245.082.437	252.190.466
Private pharmacies	96.488.679	111.521.651	129.061.937	153.661.944	176.230.355
Public pharmacies	119.518.112	110.364.337	91.512.330	91.420.493	75.960.111
Financial (EUR)					
	2012	**2013**	**2014**	**2015**	**2016**
Total	669.167.659	748.290.614	718.182.547	729.139.587	782.443.462
Hospitals	135.562.144	147.968.954	135.201.218	133.392.759	144.469.503
Pharmacies	533.605.515	600.321.660	582.981.330	595.746.828	637.973.959
Private pharmacies	220.294.001	277.604.081	320.599.972	367.041.530	437.168.875
Public pharmacies	313.311.514	322.717.579	262.381.358	228.705.298	200.805.084

Source: Chamber of Commerce and industry of Serbia (2012-2016)

Appendix 4. Drug market in Serbia from manufacturer to end consumer



Source: Chamber of Commerce and industry of Serbia (2016)

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ACCOUNTING, AUDIT AND FORENSIC SCIENCE
Scientific - original paper

READABILITY OF SERBIAN LAW ON AUDITING

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Abstract:
The main purpose of this paper is to analyse the level of readability of Serbian Law on Auditing. The problem of the research is linguistic understandability concerning comprehension of the text meaning. The readability tests are used as tools in order to get indicators of the readability level. Those tests are Flesch-Kincaid readability tests (The Flesch Reading Ease and Flesch-Kincaid Grade Level), Gunning fog index and SMOG grade. This field is, in most part, unexplored in domestic literature, especially in the domain of texts readability within accounting and auditing. The official translation of national Law on auditing (2013) in the English language has been used in this research. The research results show that Law on Auditing is considered as difficult text to read for average readers. Probably only higher educated readers will be able to grasp the meaning of the text and that limits its use for the wider public.

Keywords:
comprehensibility, language, readability index

INTRODUCTION

Utilization of readability tests can show, in different ways, the easiness or difficulties which may appear in reading and understanding the text. It is usually expressed as a grade level (Hyeoneui, et al., 2007). Readability will be observed from the aspect of comprehensibility of Law on Auditing by potential readers. They can be employees from business entities, banks, insurance companies, audit and accounting companies, government institutions, researchers, professors, students and other parties that are interested in this field. Those users play an active role in maintaining the contemporary economy, education and research. Various methods are applied in assessing the text readability level. Those methods come from psycholinguistics, cognitive linguistics or statistical linguistics. In indicating the readability level, there are a lot of signs which can affect the understanding of the theme. Those signs can be really simple, like sentence length or really complicated, which may lead the reader to the deeper analysis of the sentence and its parts. If complexity of a sentence is higher, there are some time consuming tasks, like calculating all parts of sentences in the texts. (Broda, Ogrodniczuk, Nito`n, & Gruszczy`nski, 2014). In all those cases, tests' utilization can improve various analyses, which is a great time saver.

Global use of these formulas started when researchers tested all the formulas in different texts and demonstrated the advantages of analyzing the texts this way. First of all, they can contribute in making the most of the text quality on the level of words and sentences, which can result in reading difficulties. The readability tests can be used for different types of texts in order to provide information about "language style" (is it or is it not difficult for reading). In addition, they can

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help to avoid unnecessary use of scientific jargon, which can easily confuse readers, make the essence of the text difficult to understand or convey the wrong message. In general, we can use readability scores as an objective instrument against confusing writing and incomprehensible texts or assessment tool for determination of the required level of education or age for text comprehension (Woods, Moscardo, & Greenwood, 1998). The reading level of a text is connected with its usage. If the text is used for „resting" the brain, the reading grade level will be higher than the text whose parts are for classroom use and learning efforts. In other words, the same text will be much easier to understand for the ones with advanced reading skills (with a higher-grade level) and harder for those with average reading skills (lower grade level) (Dubay, 2004).

The audit of financial reports is considered to be a complex process of activities. The main contribution of the audit is an increase of confidence level of financial statements users. Therefore, it can be concluded that audit is a public service. Legal regulation in the field of audit should be easily understandable for all possible stakeholders, who are not necessarily economists. Authors are not familiar with any research in the field of readability assessment of audit text in the Republic of Serbia. This paper contributes to the existing literature in that way. Research conducted for this paper aims to provide the answers regarding the difficulty level of reading the Serbian Law on Auditing. This paper contains the following: after the introduction, through the literature review, we get on to scientific and statistical approaches in this field. Then, we present an overview of the Law on auditing of the Republic of Serbia, which is followed by the evaluation section. In the end, we summarize all the presented options and pay attention to the directions for future researches in this field.

LITERATURE REVIEW

Readability principals have character which is specified in writing techniques and communication theories. It's the indicator which shows how text can be read and understood. It can be argued that the most important element of written communication, besides the readers' reading skills, is the text readability. That is a text trait that allows certain text to be easier to read, compared to the others. It's often mixed up with "legibility" which refers to layout and typeface (Dubay, 2004). One of the key observations in the oldest researches in this field is that the vocabulary used in the text largely determines its readability. Well-written and readable text heavily depends on the intended audience, which means that personal skills have effect on the quality and length of sentences. Readability researches gave this world the possibility to analyze the texts using readability formulas. Most of those formulas stress education level and age as main factors of readability level (Benjamin, 2011).

Readability formulas help us to avoid factors that cause difficulty in reading. Improving the text or the words used in the sentences means exceeding reading difficulties. Joann Hackos and Dawn Stephens in *Standards for Online Communication (1997)* have explained that the best way to avoid reading difficulties is to "conform the accepted style standard" (Dubay, 2004).

Excluding the critics that refer to the validity of traditional readability formulas, they are still used for reading researches. In the past twenty years, technological progress has made way for automation of traditional readability formulas and caused the development of more complex methods for measuring the text difficulty (Benjamin, 2011). Readability formulas are often criticized for their simple formulation and the fact that they do not take into consideration many other variables, which can decrease the readability level or text comprehension. For example, those tests do not have a feedback called "interesting level" which means that material is, or is not, interesting for target audience. Likewise, positive readability score does not necessarily mean that text, in fact, can be well read and understood. One more criticism refers to additional advice and explanations of the way in which we can improve text comprehensibility.

In addition, readability formulas are usually not calculated by hand, instead software programs are used. That raises the question of their consistency in calculation and comparability of the same text reading level. In one of the researches (Mailloux, 1995), four software programs are assessed: Corporate Voice, Grammatix IV, Microsoft Word for Windows and RightWriter. Programs were used on educational text within medical sciences. The same readability formulas that are used in this text were calculated (Flesch-Kincald, Flesch Reading Ease and Gunning Fog index). The results showed that formulas provided significantly different grade equivalent scores; in Microsoft Word program the lowest grade was the most inconsistent (Mailloux, 1995). The same authors found that the average variation equaled 1.3 grade levels between the assessed programs.

On the other hand, numerous studies (Woods, Moscardo, & Greenwood, 1998) have confirmed positive impact of these tools on text comprehension check. Readability scores are related to:

1. Expecting that readers will read the entire text;
2. The amount of information which readers will remember;
3. The needed time for reading the text and
4. Readers' approaches to difficult texts and their consideration of what is difficult

All readability formulas consider the word length (which means counting the number of characters and number of syllables) and sentence length (counting the number of words). The word contains the row of graphic characters that form a semantic unit. The number of characters is a reliable measure of the word length. Words classification (short level words, medium level words, long level words) is specified by readability statistics that show the average length. The word length reflects the degree of reading difficulty. Therefore, words with four or fewer characters are considered as short words and their reading difficulty is low. Medium words will usually have between five and nine characters and their reading difficulty will be moderate. Beyond 9 letters, words will be judged as illegible, or their reading difficulty will be extreme.

The amount of syllables is also an indicator of word length. Namely, short words usually have one syllable and their reading difficulty is considered as low. Medium level words have two syllables and their difficulty is moderate. Beyond three syllables, the word is considered to be complicated and that word is considered as a long word (Fakhfakh, 2015). Readability is certainly connected with sentence length. That length shows the syntactic and semantic difficulty of the text. Most readability formulas are based on the sentence length which can be measured by the number of words. It can predict the degree of reading difficulty.

Table 1. Sentence Length Measured by the Number of Words

Linguistic units	Number of words	Level of difficulty
Short level sentence	Less than 15 words	Low
Medium level sentence	15 to 20 words	Moderate
Long level sentence	More than 20 words	Extreme

Source: (Fakhfakh, 2015)

Sentence length and several factors (grammatical and lexical cohesion, complexity of vocabulary, syntactic difficulty) have influence on text understandability. According to linguistic principals, a sentence should not contain more than 15 words. When the number of words in a sentence is increased, the clarity of the sentence is decreased (Fakhfakh, 2015).

Besides vocabulary and sentence structure, some of the main contributors for text comprehension are reader's motivation, prior knowledge and his/hers reading ability. Prior knowledge, as well as text elements, has an effect on retention and documents acceptability. This is the conclusion made in the series of studies in the military (Dubay, 2004). In addition, those studies have found that, while style difficulty seems to have influence on the attention of readers who are inventive regarding material, readers who have wide knowledge of the material may profit a little, if at all, from an easier style of material. These studies have shown difficulties in revealing and measuring the effects of a sentence and other text elements on comprehension, as well. In this regard, it is argued that readability formulas help in overcoming the mentioned problems (Dubay, 2004).

Some researchers concluded that text readability is also related to colors. Comparing the text written on the screen with the text written on paper, authors (Hall & Hanna, 2003) argued that the text in black and white is hard to read on the computer screen. Human eyes recognize much more easily colored letters on colored background. Taking into account the speed of reading and the number of errors, the optimal screen color will be a little different. Advantage should be given to the next combinations: blue letters on a yellow background, yellow letters on a blue background and red signs on the green background.

To conclude this part of the paper, most authors claim that high text readability will be achieved if the following seven golden rules of writing are followed through (Dubay, 2004):

1. Use short and accustomed words;
2. Avoid the vocabulary specific for a particular profession, for example: computer jargon;
3. Use neutral language regarding culture and gender;
4. Correct use of spelling, grammar and punctuation;
5. Use simple sentences, present tense and avoid the passive voice;
6. It's recommended that a sentence begins with an action verb in imperative mode;
7. Bulleted lists and numbered steps make all information easier to understand.

RESEARCH METHODOLOGY AND RESULTS

Readability tests and readability formulas are tools that result in an indicator used to evaluate the readability of the text. This estimation is done most often by counting syllables, words and sentences, and the obtained data are included in the appropriate formulas. Several formulas will be used in this text and they will be explained in the text that follows.

The most common formulas used to estimate readability are Flesch – Kincaid grade level and the Flesch Reading Ease. Those proved to be the most trustworthy, and Flesch Reading Ease is the most commonly tested formula. It is incorporated in the Microsoft Word software because of its ease of use. Using more than one test allows greater access into the text essence. Any measurement is error-sensitive field. Flesch – Kincaid grade level is the most reliable when used with texts for elementary and secondary schools. The Flesch Reading Ease, as well. Some of the formulas can predict higher scores than others, like the SMOG grade (Simple Measure of Gobbledygook) and Gunning Fog index. The SMOG grade predicts the grade level required for 100% text comprehension. Gunning Fog is widely used in the health care, the Navy and in business publications (Kouame, 2010).

Each of these tests show, in a different way, the required level of education or the age of life for understanding a particular text. They use a few simple factors that are designed to be easily calculated and they are rough approximation of the linguistic factors that determine readability (Pitler & Nenkova, 2008). First, the results of numerical analysis of Law on auditing on English language are presented in the table that follows.

Table 2. Numerical Analysis of the Text

Total number of words	18.900
Total number of characters	116.829
Total number of syllables	34.817
Total number of sentences	1.227
Average length of the sentence	15.4 words
Estimated reading time[1]	95 min
Estimated speaking time[2]	152 min

Source: Authors' data

In the next step, previously explained readability indexes are calculated. Flesh-Kincaid Readability Test has two formulas, the Flesh Reading Ease (FRES) and, the Flesh-Kincaid Grade Level (FKGL), both of these formulas take into account the necessary level of education. FRES is calculated according to the following formula:

$$\mathrm{FRES} = 206.835 - 1.015\left(\frac{\mathrm{N_{word}}}{\mathrm{N_{sent}}}\right) - 84.6\left(\frac{\mathrm{N_{syll}}}{\mathrm{N_{word}}}\right)^{3} \qquad (1)$$

The higher the value, the material is easier to read, and vice versa. Previous researches have shown that, for example, the texts with the result between 100 and 90 are very easy to read and easily understood by an average 11-year-old reader. Texts with the result between 70 and 60 seem like plain English texts and they are intended for the public. If the text has a result between 50 and 30 that means that the text is difficult for reading, as well as for understanding. Moreover, the most difficult texts are in the group with results between 30 and 0. In the case of Law on auditing, the result is 35.4. Therefore, the text is difficult to read and only higher educated users will understand it.

Flesch-Kincaid grade level (FKGL) is the second type of Flesh-Kincaid readability test and has a wide range of use in the field of education. The result, derived from the following formula, helps professors, teachers, librarians to assess the readability level of various books and texts (Readability formulas, 2017). Values of index between 80 and 100 indicate very easy to easy text to read. Medium readability texts have values of index between 60 and 80. If the value of index is lower than 30, it means that the text is very complicated to read, and that university graduates will best understand it. The index value is calculated according to the formula: [4] [5]

$$\mathrm{FKGL} = 0.39\left(\frac{N_{word}}{N_{sent}}\right) + 11.8\left(\frac{N_{syll}}{N_{word}}\right) - 15.59^{4} \qquad (2)$$

The value of this indicator, in the case of Law on Auditing, is 12.2. It means that a highly educated person understands the essence of the text much better than those who do not have a University degree.

The next index used is Gunning Fog Index (GFI). This index can estimate the years of formal education needed for understanding the text after the first reading. The index is used by the writers of the text to check whether it will be comprehensible to the readers it is intended for. Texts for wider public should have an index value of less than 12, while texts that require a comprehensive understanding have an index value higher than 15. The value of this index is calculated using the formula:

$$\mathrm{GFI} = 0.4\left[\frac{N_{word}}{N_{sent}} + 100\frac{N_{cmplxword}}{N_{word}}\right]^{5} \qquad (3)$$

In the case of Law on Auditing, the result is 17.5. High value means that this text is intended for highly educated users or at least college graduates.

1 Estimated reading time is based on average reading time of 200 words per minute
2 Estimated speaking time is based on an average reading time of 125 words per minute.
3 *Nword* - the total number of words in the text, *Nsent* - the total number of sentences in the text, and *Nsyll* - the total number of syllables in the text

4 The same as previous formula.
5 *Ncmplxword* is the number of complicated words where the word is considered as complicated if it contains three or more syllables.

Simple Measure of Gobbledygook grade (SMOG) also measures the document readability based on the level of user education. It is most commonly used in the interpretation of materials related to health care that, as is commonly known, are very complicated for understanding (Ley & Florio, 2007). Results from the SMOG formula point to the following interpretation: grade from 17 to 18 indicates that some text requires higher education for its comprehension. All grades from 19 and more show that a reader must have higher professional qualification for understanding the text essence (MC Laughlin, 1969).

This index is calculated based on the following formula:

$$SMOG = 1.0430\, x \sqrt{N_{cmplxword}\; x \frac{30}{N_{sent}}} + 3.1291 \tag{4}$$

The result is 22.4, which supports the previous results of other formulas. The table number three presents the summary of the calculated formulas.

Table 3. Results of the main readability formulas

Reading formula	Results	Readability level
FRES	35.4	Difficult text
FKGL	12.2	Very difficult text / Highly educated readers
Gunning Fog Index	17.5	Very difficult text / Highly educated readers
SMOG	22.4	Very difficult text / Highly educated readers

Source: Authors' data

Taking into account the results obtained in the analysis of the data, it is necessary to understand the fact that, most often, highly educated users have the ability to reasonably understand the essence of the Law. It is assumed that this is due to the manner of formulating articles of the law, using professional terminology and necessary experience in Law, Economy or similar professions.

CONCLUSION

In this paper the level of readability of Serbian Law on Auditing has been assessed. This text has been selected for the analysis because any employee, student or researcher in the field can read it. Therefore, it is important to maintain high level of understandability in order to provide its implementation. The official translation of the Law on Auditing of the Republic of Serbia has been used. Serbian version of the text has not been used because that prevents the use of readability indexes which are modeled on the text in the English language. Nowadays, the readability formulas are used more than ever. The literacy researches made the writers aware of the limited abilities of their readers and at the same time helped them in writing texts of higher quality. Many factors can affect the reader's comprehension of the text. When used properly, readability formulas can help in increasing chances of successfully transmitting the writer's message in terms of the correct-text-understanding (Dubay, 2004). That is the main reason why these formulas are used in this paper. The results of the analysis show that the text consists of over one thousand sentences and it takes an average reader about an hour and a half to read it. Most commonly used readability indices have been used and the results show that readability level of national Law on Auditing is low. The reader has to be an older, highly educated person in order to fully comprehend the whole text and its sense. The future research will focus on the comparison of the readability indices values for different types of texts (scientific papers, books, newspapers, etc.).

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ACCOUNTING, AUDIT AND FORENSIC SCIENCE
Scientific - original paper

ANALYSIS OF AUDIT REPORT LAG ON SERBIAN STOCK EXCHANGE

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Abstract:

In this paper, the audit report lag for Serbian business entities listed on Belgrade Stock Exchange will be analysed andthe results will be compared with other countries. Auditors perform the control of financial statements, and methods and documentation used for financial reporting preparation, which ultimately increases their reliability. Having that in mind, keeping track of the audit reports delivery dates has become a matter of interest in everyday business and investors' decision-making process. In this paper a random sample of 196 public companies from the Republic of Serbia has been used to provide a descriptive statistic on Audit Report Lag (ARL). Also, a comparative analysis of related research from other countries has been done. Results show that minimum number of ARL in Serbia was 30 and a maximum number of days is 355. Also, the results show that ARL values for the audits performed by Big 4 auditors are higher than for the audits performed by the other audit companies.

Keywords:

audit reports, comparative analysis, Big Four, public companies

INTRODUCTION

Auditing is used to verify the faithfulness of the financial reports and to raise the level of their reliability. This is an instrument to reduce the risk of using incorrect or unreliable information by main stakeholders. The aim of audit reports for the auditor is to disclose the opinion if the financial reports are prepared in accordance with the professional legislation, i.e. the adequate financial reporting framework. By conducting audit services, the auditor provides a high level of assurance that the information contained in the financial reports does not contain materially significant unreliable amounts. In most cases, when the users are forming their own opinion, they rely on the auditor opinion. The audit opinion is very important additional information for investors, which they use when they make about future investments. Investors generally expect ARL to be as short as possible so that they can make investment decisions in time.

Financial reporting for public companies is very important for a healthy growth of financial markets. Therefore, it is crucial that their financial reports are of high quality. Also, investors should base their business decision-making process on an independent auditor opinion, which is provided in accordance with the Code of ethics for professional accountants. Large and medium business entities, public companies, parent companies for consolidated financial reports, as well as all legal entities and entrepreneurs whose revenues in the previous financial reports exceeded 4,400,000 euros have the legal obligation of performing mandatory audit (Knezevic, Stanisic & Mizdrakovic, 2017).

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Entities mentioned above have an obligation to perform an audit and deliver the audit report to the Serbian Business Registers Agency. Those opinions, together with the audited financial reports are available to the public. The remaining entities (micro and small-sized entities) can perform an audit on a voluntary basis. According to the Law on Accounting, audits are obligatory for public companies whose stocks are sold on the domestic market, foreign market or OTC (Over the Counter) market. It is important to mention that neither the Law on Accounting, nor the Law on Capital Market does not pose the minimal request regarding the type of auditor opinion that public companies must have. However, in developed countries and financial markets, it is required for public companies to have an unqualified opinion in order to remain on the stock exchange.

An audit represents a significant part of the financial reports analysis and the assessment of company's success. One of the aspects that are relevant are the days of delivering the audit reports (Audit Report Lag), which will be analysed in this paper. An increase in the number of days that pass between the date of the end of financial reporting period and the delivery date of the audit report can lead to a decrease in investors' trust. It is expected that the investors will wait for the audit reports to be disclosed before they decide whether to invest in a company. Therefore, it can be said that ARL represents a significant factor in the economy of a country. Also, higher ARL can suggest that audit company had to perform more audit activities which in turn means that quality of financial reports is probably lower. Audit report lag, as it has been stated, has a great impact on the investors' trust and it helps in the growth of the financial markets and the economy as a whole. This has been the subject of many papers and research in the previous thirty years. Usually, authors conclude that late delivery of audit reports did in fact have an impact on their credibility.

As already mentioned, audit reports are delivered to the Business Registers Agency together with the financial reports. The deadline for the delivery of the report is June 30th of the current year for the financial statements of the previous reporting period. For consolidated reports the deadline is July 31st. According to the Law on Accounting, Article 24, the company chooses the audit company until September 30th of the current business year for which the audit is to be performed. When it comes to the consolidated financial reports the time limit may vary and it could be longer. If the calendar year does not match the business year, the deadline is three months before the end of that business year. Audit report lag is calculated by comparing financial reporting date, December 31th, and theaudit report date. The difference shows the number of days known as ARL.

LITERATURE REVIEW

According to (Geiger & Raghunandan, 2002) the audit report is the final outcome of the audit process, and is the only external communication of what the auditor has done and concluded during the audit. In addition to the analysis of the number of days of the ARL, it is important to look out for the possible causes that affect it. Previous research shows that there are different determinants which effect ARL:

- audit tenure,
- auditor opinion type,
- Big 4/non-Big 4 auditor,
- auditor change,
- business industry,
- auditors' industry specialization,
- auditor client's net income,
- auditor client's size,
- listed or over the counter auditor client,
- auditor client's age, and
- the probability of bankruptcy of auditor client.

Audit tenure shows the number of years an auditor is engaged by the client-firm (Lee, Mande & Son, 2009). According to the same authors, auditors with long tenure are able to audit their clients more efficiently. Previous research shows that companies with an unqualified audit opinion have shorter ARL than companies with other types of audit opinion (Walker & Hay, 2013). Also, there are differences in audit report lag depending on which audit company performed the audit – companies which belong to Big Four and non-Big Four audit companies. Previous research shows that the ARL for Big Four clients was shorter than ARL for clients of other audit companies (Schwartz & Soo, 1996).

Past research shows that an auditor change can affect ARL. When an auditor has a client for several years, he/she becomes familiar with clients business and structure of their assets. However, when a different auditor is appointed, that change could result in an increase of audit costs for the client company and affect the length of the ARL (Schwartz & Soo, 1996). Namely, it takes more time for the newly appointed auditor to complete audit, therefore ARL should be longer.

When it comes to business industry, according to Ashton, Willingham & Elliot (1987)financial companies have shorter audit delays than companies in other industries.That can be explained by the fact that financial companies have a low level of fixed assets and highly centralized and automated accounting systems (Schwartz & Soo, 1996). Non-financial companies like Oil and gas industry, Transportation and Real estate and construction have longer ARL in comparison to the financial companies for almost a month(Ashton, Graul & Newton, 1989).Auditors' industry specialization has an impact on the ARL, as well. According to Habiba & Bhuiyanb (2011), industry specialist auditors have specific knowledge as an advantage and they will be able to resolve complex accounting issues and transactions in a less number of days than non-specialist auditors. This leads to the conclusion that ARL will be shorter when the audit is being performed by industry specialist auditors, because of their strong industry-focused knowledge.

The profitability of an audit client calculated as net income or the net result could have an influence on ARL, as well. Auditor clients with negative net income have longer ARL than companies reporting zero or positive net income. Results show that there is a difference in a range of one week up to a month between these entities (Ashton, Graul & Newton, 1989). This comes as no surprise, as business entities that have unprofitable business will more likely engage in false financial reporting, or white and black creative accounting. Therefore, auditing risk will be higher and the auditor will have to perform more auditing operations in order to decrease the risk to acceptable level in order to provide an opinion.

There is a connection between the ARL and the risk of audit work, if certain events are to happen and it is necessary for the auditor to do some extra work in certain areas (Bamber, Bamber & Schoderbek, 1993). Also, some of the authors set the hypotheses about the possible causes of the ARL on an examined sample. One of their assumptions, based on the previous research, was that the size of audit client affects the ARL. The results have shown that there is a connection between these two variables. The same conclusions were drawn from the analysis of the impact an audit company has on performing the audit itself. Here a categorization has been made – whether the audit company belongs to the Big Four[1] or not (Walker & Hay, 2013). In the mentioned paper, this variable affects the ARL.

On the other hand, there is an opinion that the ARL depends precisely on the audit-specific issues, as well as the audit fees or audit hours, type of auditors, the uncertainty of opinion in the audit report (Leventis, Weetman & Caramanis, 2005). Results of conducted research (Bamber, Bamber & Schoderbek, 1993) provided the evidence that the structured audit approach is associated with a longer ARL.

The financial position has an impact on longer audit delay, as well. Past research results point out that in regard to the impact of the company's financial condition on audit delays, financially weak companies can be expected to be associated with longer audit delays (Bamber, Bamber & Schoderbek, 1993). Also, companies that had a longer period of the ARL had bigger losses at that time (Courtis, 1976), (Carslaw & Kaplan, 1991). When it comes to the type of auditor opinion there is a connection between them and ARL. Whittred's study found that companies receiving qualified audit opinions were associated with longer audit delays (Whittred, 1980).

In the research by Mohamed-Nor, Shafie & Wan-Hussein (2010), the sample included 856 companies which stocks were listed on the Malaysian market in 2002. A certain number of companies did not fulfill the conditions in terms of availability of the necessary reports, and 628 companies have been selected as the sample for research. Past research about subjects on the Malaysian market shows that the number of days was longer, just like it was mentioned. When compared, the ARL was shorter for approximately two weeks. The complete sample has been divided into four categories based on the length of the ARL. Two-thirds of the sample have submitted the audit reports in the fourth month after the end of the fiscal year (Mohamed-Nor, Shafie & Wan-Hussein, 2010).

When it comes to companies that perform business operations on the Hong Kong market and their audit report lag, the sample included 393 companies, after dismissing the inadequate samples based on the necessary variables, for the period from 1991 till 1993 (Jaggi & Tsui, 2012). The sample for New Zealand contains a two-year analysis of the ARL (Walker & Hay, 2013). The final sample included 130 companies, which would be 260 samples of audit reports in a two-year period. The relevance was put on the number of days from the end of the fiscal year until the date on the audit report.

According to the research from 1993, it is stated that the average audit report lag in Malaysia was 116, whereas in 2002, author's sample showeda reduction to only 100 days (Mohamed-Nor, Shafie & Wan-Hussein, 2010). By applying the statistical models, the variables and the degree of their influence on the ARL have been examined.

RESEARCH METHODOLOGY AND RESULTS

For the purpose of this paper (research) 196 companies whose stocks are listed on the Belgrade stock exchange were randomly chosen. There were 375 public companies at the moment when the research has been conducted. Therefore, the sample represents 52% of all public entities. Their audit reports for financial statements from 2015 reporting period have been collected from the Serbian Business Register Agency. The ARL has been calculated for each report and it has been noted if the audit has been performed by one of the Big 4 audit companies.

It has been noticed that the median is 118 days, and that the average audit lag is close to this number, which indicates a possible normal range of values within this set. Research results show that the Big 4 performed audits for

1 Refers to Deloitte, KPMG, Ernst & Young, PricewaterhouseCoopers

43 out of 196 sampled entities (22%). The average ARL for those entities was 122.51 days, the median was 166 days, a minimum number of days was 54, and 355 the maximum number of days. For 153 companies, the audit reports were done by audit companies which do not belong to the Big 4. For this part of the sample, the average number of days was 116.04, the median was 107 days, the minimum number of days was 31, and the maximum number of days was the same as for the companies examined in the first part.

The results mentioned above show a few findings. First, the audit which was performed by one of the Big 4 audit companies has a much lowerminimum number of days of ARL than the audits performed by other audit companies. It can be presumed that the reason for these results could be the thoroughness of the procedures performed by Big 4 companies. The second reason could be the size of the client entities, since probably larger sized companies would hire these auditors. However, the maximum number of ARL days was the same.

It should be taken into account that comparative analysis, which was presented in this paper, includes different periods. In comparison to the other countries that were analysed, Serbia has the biggest deviation in a maximum number of days of ARL. According to the Table number one, maximum number of days for Serbia was 355 while Egypt had 115 days as the lowest maximum number of ARL days (Afify, 2009). The maximum number of days of ARL in Serbia resulted in an increase in the average number of days of ARL. Namely, the average number of ARL in Serbia is the highest in comparison to the other countries and equals to 117.46 days. The lowest average number of ARL is in New Zealand, close to two months.

Table 1. Comparative analysis of audit report lag

	Serbia	Greece	Malayasia	Egypt	New Zealand	Hong Kong	Bahrain
Year:	*2015*	*2000*	*2002*	*2009*	*2005*	*1993*	*2006*
Sample:	*196*	*171*	*628*	*85*	*260*	*393*	*231*
Minimum number of days:	30	30	13	19	21	40	7
Maximum number of days:	355	158	332	115	151	190	154
Average number of days:	117.46	98	100.3	67	55	105	48

When it comes to a minimum number of ARL, it takes only one week in Bahrain to report and almost two weeks for auditors in Malaysia (Jasim, 2008). In Serbia, the shortest period of time in which auditor clients could expect to receive auditor report is one month. The same minimum number of ARL has Greece, as the only country analysed from Europe. In this country, all audit companies have to prepare audit reports within 160 days (Leventis, Weetman & Caramanis, 2005). As it can be noticed, all auditors comply with this regulation. On the other hand, in Serbia all auditors and audit companies have to prepare audit reports within 180 days. A significant number of sampled auditors breached this regulation and disclosed audit report after that period, in some cases a year after.

CONCLUSION

Instability in the terms of business conditioned by external factors has brought to the re-examining of financial reports and audit reports. There was a need for controlling and increasing the audit report credibility. As it has been noted in this paper, one of the most significant factors of contemporary financial markets is the ARL. The conducted research that has been presented in this paper included a comparison of five markets, together with the market of the Republic of Serbia. The results of the research have shown differences in time periods and the factors that affect the ARL. By comparing the results, it is perceivable that the Republic of Serbia, based on all three criteria, has the longest ARL. Speaking of a minimum number of days, it can be said that it is not far from the average of other countries. The maximum number of days seems to be the problem. In addition to that, an important criterion is the sample collecting time. It could be conducted that there is a connection between the length of ARL and audit company which performed an audit. Results show that companies which audit was performed by Big Four audit companies have longer ARL in Serbia, comparing to the audit performed by non-Big four companies. The research results for other markets have been done in the previous ten to twenty years, whereas for the market of the Republic of Serbia the research has been conducted in 2015. The expectations and assumptions are that significant changes occurred in other markets in view of the shortening the ARL period. The limiting factor of the research is also the one-year period for the market of the Republic of Serbia, and in view of that, further analysis should be based on a longer time period, as well as on the establishing variables of great impact on the ARL period. Establishing a shorter ARL should provide greater reliability of audit reports and more confidence from the stakeholders.

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ACCOUNTING, AUDIT AND FORENSIC SCIENCE
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USE OF BENEISH MODEL ON SERBIAN SUPER LEAGUE FOOTBALL CLUBS

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Abstract:

The objective of financial reporting is primarily to protect the interests of investors and creditors by disclosing objective and fair information. The importance of financial reporting quality has increased significantly as a result of various accounting manipulations and numerous corporate scandals. Financial scandals stressed the limitation of the audit in the process of fraud detection, and hence the necessity of forensic accounting. The financial statements are the source of information used in the analysis of companies' business performance. Research sample consists of 13 Super League sport clubs in the Republic of Serbia, and the aim is to check if they manipulate with their earnings. The results show that significant number of clubs disclose some misstatements in the financial reports.

Keywords:

financial analysis, financial statements, sport clubs, Beneish M-score model

INTRODUCTION

Beneish (1999) pointed out that earnings manipulations have taken considerable attention of analysts, regulators and researchers. According to this author, manipulation of earnings is the most commonly used method of creative accounting or misuse in application of accounting standards (IFRS/GAAP). The goal of manipulation of profit is a false presentation of the company's financial statements, which misleads the users of financial statements, since they do not reflect the real situation of the business. In addition to the items of revenues and expenses that are most often subject of manipulation in financial statements, Beneish also observed certain items of property, as well as, sales growth as possible areas that are subject to manipulation (Bhavani & Amponsah, 2017). Using the COMPUSTAT database, on a sample of 74 companies, Beneish found that the most common manipulations in the financial statements are the result of incorrect capitalization of purchase costs, as well as, the disclosure of fictitious revenues. Moreover, it was proven that new and developing companies are more exposed to manipulations than companies operating for many years (Rajković, 2016). Based on the research, Beneish created the mathematical formula and defined several indicators that can be calculated using the data from the financial statements, in order to identify possible financial fraud or the tendency reflect the better earning capacity of the company (Repousis, 2016). Beneish model has found its wide application in detection of earnings manipulations in various industries, and we found it suitable to be applied in specific area of sports industry, such as football clubs.

The research has been divided into three sections. First, literature review regarding Beneish model and its implementation. This is followed by research methodology and presentation and discussion of results.

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LITERATURE REVIEW

In this section the most contemporary research regarding Beneish model is presented. Since 2014 there are many different applications of this model. One of its applications refers to banking industry and stock exchange. One research found that there are many earnings management techniques applied at Iraqi banks listed at stock exchange and they consider that audit can increase quality of financial statements (Talab, Hammood, & Ali, 2017).

Herawati (2015) found that Beneish model was able to detect financial fraud and the sample was taken from the Database of Sanctions of Issuer Cases Public Companies that was released by the Financial Services Authority in the period of 2001-2014. This researcher found that Gross margin index, depreciation index, index of sales and general administrative index were quite inadequate, and their behavior raised suspicions in this research.

Beneish model has also been used to predict cross sectional returns (Beneish , Lee, & Nichols, 2012). According to this group of authors, the predictive power of M-score is related to its ability to forecast the persistence of current-year accruals, and is most pronounced among low-accrual (ostensibly high earnings-quality) stocks.

Spyridon Repousis (2016) has analyzed 25,468 Greece companies over two years' period (2011-2012). According to the results, 33% of the whole sample (8,486 companies) has a greater than - 2.2 Beneish M-score, which can be a signal that those companies have positions in the financial statements that may indicate manipulation.

Özcan (2018) applied Beneish model on 174 Turkish companies, and found that Beneish model aids effectively in falsified financial statements analysis.

Ganga and Amoinsah (2017) applied both models, M-score and Z-score, for detection of accounting fraud in published financial statements of Toshiba company. According to the results, Beneish model was not able to detect any manipulations in statements, unlike Altman Z–score model that provided some indication that financial statements had misstatements.

METHODOLOGY

The Beneish model consists of eight variables that may indicate inadequate accounting treatment and manipulation of earnings (DSR, AKI, DEPI, and TATA) or may indicate potential manipulation of earnings (GMI, SGI, SGAI, LEVI) (Lotfi & Chadegani, 2017).

The paper presents the methodology of this model through 5 variables on the sample of the sports clubs of the Super League, including the following indicators (Kokić, 2018):

1. **Days' Sales in Receivables Index**- shows how many days it takes to collect the receivables, or how much the share of average receivables arising from sales in net sales revenues is. If the value of customer receivables is significantly higher in the current year compared to the previous year, Beneish believes that this value can serve as a red flag that revenues and profits are overestimated or that their manipulations have occurred (Mirković, 2014), (Özcan, 2018).
2. **Gross Margin Index** - this index is obtained as the difference between the sales revenue and the variable costs (costs of goods sold) from current year in relation to the previous year. If the current gross profit index is more than one in relation to the previous year, in that case the index value has deteriorated. Consequently, with companies with lower profitability, there is a greater likelihood of manipulation of earnings.
3. **Asset Quality Index** - represents the ratio of fixed assets and total assets in two consecutive years. If AQI is greater than one, this means that the company has increased the share of deferred costs, which leads to an increase in the risk of realizing assets and indicates an increased tendency to capitalize costs (Shabnam, Zakiah, & Mohd, 2016).
4. **Sales Growth Index** - represents a change in sales revenue in observing a series of time periods. The limitation of this index is that the increase in sales revenue does not represent an adequate indicator of manipulation, but it can indicate that the growing companies have a higher tendency to manipulate in order to maintain the market share (Grove, Clouse, & Greiner, 2017).
5. **Depreciation Index** - represents a change in the depreciation rate in two consecutive years. If the amount of this indicator is greater than one, the stated value may indicate that the company consciously reduced the write-off rate of the property, plant and equipment, increased the useful life of the use of the said assets, thereby contributing to the increase in profit (MacCarthy, 2017).

Each of these indicators can individually indicate the manipulations in the financial statements. The following formula was used for application of the model:

$$\begin{aligned} M\text{-}score &= -6{,}065 + 0{,}823\, DSRI + 0{,}906\, GMI + \\ &0{,}593\, AQI + 0{,}717\, SGI + 0{,}107\, DEPI \end{aligned} \tag{1}$$

If the M-score value is greater than -2.22, there is a high likelihood that the financial statements were manipulated (Petrik, 2016).

Furthermore, the application of the Beneish model on the sample of the sport clubs of the Super League will be illustrated. The survey included 16 clubs of the Super League, of which 3 clubs were excluded due to the lack of data. Football clubs excluded from the sample are: Mladost, OFK Bačka and Javor (Fudbalski savez Srbije, 2017). Financial statements for the sample clubs have been obtained from the official web site of Serbian Business Registry Agency for the following reporting periods: 2009 – 2016.

RESEARCH RESULTS

In the following table the results of calculated M-score are presented.

If we analyze the results for the period from 2009 to 2016, we can notice that 4 out of 13 sport clubs have median higher than the standard M-score value of -2.22.

Based on the applied Beneish model, we can assume that 31% of football clubs of the Super League manipulate with their earnings disclosed in the financial statements.

Table 1. Beneish M-score model for the sampled sport clubs for the period from 2009 to 2016

Football clubs	Median of Beneish M-score	2009	2010	2011	2012	2013	2014	2015	2016
RAD	-3,154161485	-	-1,045173	-3,400645	-3,227732	10,923839	-3,0805909	-3,4438916	-
Crvena Zvezda	-4,034943507	-	0	0	0	-4,034944	-	0	0
Partizan	-2,159250917	-	-1,555283	-1,329963	-2,763219	-3,897365	0	-	-
Vojvodina	-2,417346722	-	-2,168798	-2,417347	-3,151321	-3,43694	-1,5427439	-	-
Čukarički	-3,218780814	-	-3,218781	-	-	-	0	0	-
Zemun	32,89382246	-	32,893822	0	0	0	-	-	-
Spartak - Ždrepčeva krv	-2,091919625	-	-1,412138	-2,771701	4,0036768	-4,113498	-	0	0
Borac	-3,080267502	-	-3,965048	0	-	-3,080268	367,203515	-	0
Radnički N.	-	-	0	0	0	-	-	-	-
Radnik	-2,866466427	-	-2,445841	0	-3,287092	-	-	-	-
Mladost	-	-	-	-	-	-	-	-	-
Javor	-3,532350854	-	-	-	0	0	0	-3,5323509	-
Mačva	-3,768284054	-	-3,858635	-	-	-3,677933	-	-	-
Napredak	-2,7521628	-	-1,971975	-	-	-	-	-3,5323509	-
Voždovac	0,226646747	-	1,1940892	-	-	-	-	-	-0,740796
OFK Bačka	-	-	-	-	-	-	-	-	-

Source: (Kokić, 2018)

DISCUSSION

In the following text, we will analyze each variable used in the calculation of M-score model.

Those values may point to the problematic areas in the business of the company or misstatements in the financial reports (Ines, 2017). We will first address the results for football club RAD. The club does not register significant oscillations in the Days' Sales in Receivables Index (DSRI). The exception is 2013, in which customer receivables were significantly increased in comparison to 2012 by almost 18 times. The problematic years of the Asset Quality Index (AQI) are: 2011, 2013, 2014. In these years the index is higher than 1, which may indicate an increased share of deferred costs. The Sales Growth Index (SGI) had the growth in 2010 and 2012.

For the football club Crvena Zvezda, the most problematic indicator is the ratio of Days' Sales in Receivables Index given that in four periods that indicator has increased. Then, the gross profit index, in which the current account differential over the previous year is greater than 1, indicates a deterioration in the value of gross profit (Kokić, 2018).

Partizan football club has a problematic value of the Days' Sales in Receivables Index. There is a noticeable growth from year to year, which can indicate an overestimated amount of income and profit of the sport club. Regarding the gross profit index, a significant growth compared to the observed periods occurred in 2014 by more than 13 times. In the period from 2010 to 2013, the asset quality index was higher than 1. The indicated value may indicate a potential red flag that the football club did not perform adequate valuation of assets. The value of the income marked slight growth from year to year. The depreciation index is problematic given that in all observed years the stated value is greater than 1, which can indicate an increase in profit through manipulation with the amount of the depreciation rate and the useful life of the asset.

Sport club Vojvodina, from the observed 5 variables of the Beneish M-score model, does not show problematic values in the following indicators: DSRI, GPI, GMI. However, the asset quality index and the depreciation index exceed the prescribed standard values. The football club Čukarički with GMI, DI, AQI and SGI recorded a significant increase in the value of current indicators in relation to the previous year. Spartak – Ždrepčeva krv football club has a problem with decreased gross profit, overstated income, inadequate depreciation rate, write off value of fixed assets, and a useful life of the asset. Borac football club's DSRI records significant oscillations in 2014, where the value of this indicator is on average 20 times higher than the value in other years. SGI reflects growth in 2010 and 2013. In other years, this amount is within the limits of standard values. DEPI in 2014 recorded and increase by more than 3 times for the observed periods, which can indicate an increase in profit through manipulation with fixed assets. Mačva football club recorded a significant increase in the ratio of trade receivables from customers in 2012, as the stated value is 39 times higher than the values from other years. Football club Napredak with the indices ratio of DSRI recorded a significant increase in 2010 and 2011, where the value of the indicator is 2 times higher than the value in other years. The depreciation index in 2012 recorded up to 5 times higher growth compared to the other observed years, which can indicate an increase in gain through constant asset manipulation.

From the above presented results we can conclude that there are significant differences between football clubs in terms of DSRI, GMI, DEPI. Their behaviors during this period show great oscillations.

CONCLUSION

The goal of the conducted research is to identify the areas of possible manipulation in the financial statements. Beneish M-score model has been used for the estimation of probability that sampled sport clubs manipulated with their earnings. The model pointed out to the deviations in the disclosure of liquidity, profitability, turnover of business assets, income, write-off of assets and value of net earnings. The consequences of such actions are due to poor quality of financial reporting and application of IFRS and other accounting related legislation in the Republic of Serbia. In order to reduce the number of manipulations, it is necessary to improve the quality of financial reporting, to implement a consistent application of legislation and to improve the quality of audit procedures.

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