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ARTICLES

Sustainable Development of Information Systems for Logistics as a Tool to Strengthen the Competitive Ability on Global Markets

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Abstract

The main purpose of the article is to motivate experts and researchers in the field of business informatics and logistics to interdisciplinary integration in order to develop a new concept of an information system that will help to strengthen a company's competitive ability. The article analyzes the research carried out between top managers, strategic managers and managers of logistics in the largest Slovenian companies. Two hundred companies were included in the primary survey; 60 managers were selected in a representative sample and at the end 30 leaders in statistical analysis. We sent questionnaires to our managers via e-mail. The data were processed with the statistical program IBM SPSS Statistics 19, as a method we used linear regression and multiple correlation. With the primary survey, we measured satisfaction of the managers with existing information support for logistics and found that logistical, strategic information professionals need to be even more connected, so that management decisions can then be developed and sustained. On the basis of the obtained data, it can be concluded that sufficient investment of funds in the creation of an appropriate information system fosters the development of business logistics. The originality and value of the article are reflected in the interdisciplinary view of the concept of information support of logistics in the development of new products, in the original connections of various business functions, in the possibility of designing new information solutions and in the sustainable development of new services for the market.

Keywords: sustainable development, information system, logistic process, global supply chains, strengthen the competitiveness ability, strategic development of company

Introduction

The article presents thoughts and theoretical insights, and it is also a sort of challenge to combine its experience in the economy and services with scientific thinking and approach. The work offers a provocative note that encourages use of systematic and complex thinking, which will be increasingly present in business logistics, IT, the development of new products and the strategic and sustainable development of companies. Logistics is becoming a knowledge management, with the right product / service at the right time and space and with the right price to create added value for a company.

On the basis of many years of experience we see an urgent problem in regard to how to launch the right information at the right time, the right place and with the right decision-makers. Globalization and strengthening the competitive capabilities of companies places new challenges ahead of management, capital, professions and science, which continue to produce more and more new products, which require appropriate logistics and information support. Obviously, there are slightly different views on the same subject matter. We want to do business as efficiently as possible, which means that we want to use the available resources efficiently, to effectively implement procedures, and to manage relations with suppliers and customers well. The harsh borders of the aforementioned views on the company's business are difficult to figure it, all depends primarily on the look of at the company and on the nature of the business.

An interdisciplinary approach enables to conclude that the areas of strategic and development management, logistics and IT are those that are not yet used, too often ignored, and hide important potentials for maintaining and increasing a company's competitive ability. As the market demands ever-improved products and services, after careful consideration, it can be found that among the most important generators of strengthening the competitive ability of companies in the future, the modern concept of logistics development in new products is supported by state-of-the-art information technology.

The subjects of the research will be strategic management and product development, links between the process of product development and logistics processes as well as information systems in companies, research and study of good practices and analysis of them and the creation of guidelines for the compilation of logistics optimization models in connection with the development of products using qualitative mathematical methods or using computer simulations. The subject area is highly interdisciplinary, and the foreseeable concept of the information system model for supporting logistics in the development of new products has many assumptions that are constantly changing via the turbulent modern business world. The relevance of this article is thus illustrated by the fact that the problem is considered interdisciplinary, because in addition to logistics and the development of new products, we also touch upon other areas, such as: strategical, marketing and product management, business economics, accounting and finance, business informatics, etc. The connection between these areas represents the uniqueness of the theme. The results will be interesting both for science and for companies, because we all want personal sustainable development and wider social well-being.

Strengthening the competitiveness of individual companies in terms of strategical development also affects strengthening of competitiveness of the global economy. According to Porter, the competitiveness of a country depends on the productivity of its enterprises, as they are intertwined with the quality of the national economic environment. The basic competitiveness therefore lies in the productivity of production of high-quality products and the services of recognized brands, which enables the creation of a strong currency and high wages, resulting in a high standard and prosperity in the country (Kregar-Brus, 2009, p. 25).

The development of management should take into account the advanced technologies of the new industrial revolution, the digitization of the world, the changing habits and the form of consumption, which is aimed at finding technical, technological and professional solutions that will meet the needs of people (Zelenika & Pupovac, 2008). Certainly, the characteristics of modern sustainable development have sought in the development of Industry 4.0, in which a great leap in thinking has been made. Industry 4.0 refers to the intelligent networking of industrial machines and processes with the use of ICT technology, which has made it possible to directly connect subjects (Plattformi 4.0, 2018).

Regarding the correlation between logistics processes and the development of new products, no significant results are yet to be found; thus we can examine only part of the thinking, which has a basis in the sense of managing new products separately from logistics management. It is common to both areas to be overwhelmed with the elements of project management, where there is a high level of risk. A new product can thus be a completely "missed" project if it does not work systematically, decisively and persistently; it is exactly the same with logistics, where it is necessary to move goods along the planned transport route. In any case, in the future, more synergy effects will be needed between product development and logistics (e.g., strengthening competitiveness and increasing profits) in order to identify and eliminate "hidden reserves" in companies, institutions, organizations, technology and the workforce. The synergy effects between the management of new products and logistics are undoubtedly influenced by factors such as, specificity of the industry, sales markets, purchasing markets, competition, etc. (Andersson, 2007, p. 27).

The introduction of new logistics services in the development of new products or services will have to be absolutely supported by modern management and owners in modern companies. Managers and business owners can forget about congestion and excitement by including executors of set business strategies into the phase of strategy formation, which can also be called the missing elements of strategy design (Dandira, 2011, p. 30). Problems arising in the development of new products or services, therefore, begin to arise in the event of a strategy without intelligence or that when using intelligence one does not have a clear strategy (Gilad, 2011, p. 4). In order to avoid such problems, it will be necessary to globalize research on strategies, maintain continuous pluralism in this area, create a new synthesis of the current research, support cooperation between scientists and experts in companies regarding the implementation of business strategies and determine the criteria for measuring their effects (Lampel, 2010, p. 4, Antonacopoulou, 2010, p. 391). It is also worthwhile to monitor the competitive ability of the company, which is reflected in the market results (market share, share of sales to foreign markets, coverage level), through the market characteristics of products (competition prices, product quality) and through the quality of business functions (marketing, logistics, HRM, technology and development), which together constitute a company's strategic position (Kovač, 2010, p. 71) and the need for the creation of an information system for supporting logistics in the development of new products.

Managers are increasingly aware of reliable and effective decision-making processes, thus the emergence of demand for information support for processes and decision-making has prompted developers of information systems to begin to develop managerial information systems. Most of these systems are based on artificial intelligence methods and a simple user interface and open possibilities for using different data operations (Kovač, 2010, p. 84). Through the full spectrum of the logistics chain from the manufacturer to the final consumer, companies want to improve their services and reduce costs; in short, they want to optimize their production. For effective control and optimization of logistics chains, SCM solutions have proved to be the most important ones, which means Supply Chain Management, which is among today's popular shortcuts, e.g., ERP, CRM and the like.

Methods

The key weaknesses of information systems in logistics, which are most often mentioned in research (e.g., Andersson (2007), Bobek&Sternad (2007), Dandira (2011), Gillad (2011), Grover, Berghel&Cobb (2011), Klasing, Markue&Pelc (2008), Kovač (2010), Manuj et al (2010), Zelenika&Pupovac (2008), Wong (2009) and others), were the long response times from the receipt of the order to the delivery of the ordered goods, which usually resulted in errors in the supply, insufficient traceability of the goods according to the chosen criteria, and problems with the marking of goods upon shipment. Often the causes for the goods reclamation were multiple manual entries, which increased the likelihood of errors. In any case, there may be problematic time delays during the implementation of physical manipulation and entry into the information system.

This article investigates the means of sustainable development, logistics process and business information systems, which are the most widespread in business logistics. We present the results of a study whose purpose was to examine the basic information for sustainable development of business logistics. In exploring these issues, we have sought the following goals:

- to find good concepts for sustainable development for a modern economy;
- to examine new ideas, solutions and innovations in the field of information system for logistics in Slovenia and abroad;
- to find good concepts for logistics management in companies;
- to connect good practices in the economy with the findings of the profession

Using the deductive method derived from general observation, defined by the theory or the study of secondary sources and practical conclusions on the dependence between the analyzed phenomena, we want to evaluate the following hypothesis:

> H1: *IT support positively influences corporate management including logistic processes.*

The observed variables will thus be appropriate IT support, key elements of the logistics process, and strategic, corporate management because on the basis of literature review and many years of our own experience, we have concluded that these are the main building blocks of sustainable development and a tool for strengthening the competitiveness of companies.

Research

For the needs of primary research, we involved major companies in Slovenia, which have formed departments of information technology and logistics and their leader. The research sample consisted of 60 managers from the automotive cluster of Slovenia. The companies of the Slovenian Automotive Cluster (ACS) have been selected because they are among the most developed enterprises of the Slovenian economy with a high competitive advantage, and for smooth operation and development, information support of logistics in the development of new products is important. Most enterprises in this group of companies are in the majority of cases, large and medium-sized (from 100 to over 3,000 employees) thus representing an appropriate sample of companies, as they need to work hard on the development of new products in order to strengthen their competitive ability. A sample of quantitative research consists of representatives of the top and strategic management of ACS members, representing 95 managers, 30 replied. This is a random sample. Individual units were not previously selected according to predefined criteria, and the structure of the sample reflects the structure of the entire population.

First, we surveyed top management by e-mail and then, if necessary, strategic management by phone. A questionnaire was first tested on a small sample of companies in cooperation with experts and scientists. Primary data obtained in the quantitative survey were analyzed by methods of descriptive statistics. In the empirical analysis we included 30 managers, where logistics is a part of the strategic development of a company and, together with the development of information systems, strengthens its competitiveness. After the execution of the survey, we appropriately analyzed the collected data using statistical methods (multiple linear regression) and statistical software tool, IBM SPSS Statistics 19.

Analysis

In the questionnaire we checked this hypothesis with the question:

- Are employees of the company aware of the importance of information support in the development of logistic processes and corporate management?

The response rate was as follows: 50% of responses were affirmative, 25% negative and 25% undefined.

Due to the fact that processes in information technology and logistics are also important in corporate management, we have to define the status of the variables for statistical processing purposes. Multiple regression analysis helped us to determine how much appropriate information support and key elements of logistics (independent variables) contribute to clarifying the variability of corporate management (dependent variables). The results are presented in tables 1-3.

Table 1. Summary of the model

Model	R	R^2	Estimated R^2	Standard error rating
1	0.489[a]	0.239	0.183	0.886

a. Variables: (independent), key elements of logistics, appropriate information support

Table 2. ANOVA

Model[a,b]		Sum of Squares	Number of Units	Square squares	F	Sig.
1	Regression	6.663	2	3.332	4.242	0.025[a]
	The rest	21.203	28	0.785		
	Together	27.867	30			

a. Independent variables: Key elements of logistics, Appropriate information support

b. Dependent variable: Corporate management

The influence of relevant information support and key elements of logistics to corporate management was verified by the following regression model:

- Corporate management = f (relevant IT support, key elements of logistics);
- R (multiple correlation coefficient) is 0.489, and we can speak of a medium strong link between variables (relevant information support, key elements of logistics and corporate governance);
- R^2 (multiple determination coefficient) is 0.239 and testifies that 23.9% of corporate governance depends on adequate information support and key elements of logistics, while 76.1% on other factors;
- The F statistic of 4.242 is statistically significant, which confirms the overall significance of our model.

Table 3. Multiple Linear Regression

Model[a]	Non-standardized Coefficients		Standardized Coefficients	t	Sig.
	b	Stand. error	Beta		
Constant	1.174	1.152		1.020	0.317
Appropriate information support	0.556	0.211	0.458	2.639	0.014
Key elements of logistics	0.130	0.255	0.089	0.512	0.613

Dependent variable: Corporate management

The results in Table 3 can be interpreted as follows. The multiple linear regression equation can be written as:

$$Y = b_0 + b_1X_1 + b_2X_2$$

$$Y = 1.174 + 0.556X_1 + 0{,}130X_2$$

Corporate management = 1.174 + 0.556 * (relevant information support) + 0.130 * (key logistics elements)

The estimated t-statistics indicate that the estimated coefficient of relevant information support is statistically significantly different from 0 at 5% significance level. This result applies that the relevant information support influence the corporate management of observed companies. Thus, on the basis of the estimated regression model (corporate governance = f (relevant information support, key elements of logistics)), we can claim that each EUR invested in appropriate information support on average improves corporate management by 0.556 EUR.

We can also argue that insofar as management and company owners invest funds in modern information support including logistics; on the other hand, they reduce operating costs and increase the efficiency of corporate management. At the right time, management typically has the right information at the right place, on the basis of which it makes the right business decisions for the realization of strategic goals, business strategies, goals, mission and company policies. Finally, on the basis of testing and argumentation, we can confirm the H1 hypothesis, which means that the relevant information support has a positive influence on corporate governance including logistics. In the end, we should mention that managers will be able to evaluate the positive impact of adequate information support on logistic processes in the future, once we carry out this type of research again.

Discussion

The particularity of the sustainable development of logistics management in the industry is in its continuous technological and organizational development. With the help of appropriate management, it is about introducing completely autonomous processes of preparation of production, of the production itself and especially of production processes, which should enable better preparation of goods for the buyer (Seitza & Nyhuisa, 2015). It is the sustainable logistic development, which is reflected through the introduction of autonomous packaging, palletizing, storage, supply, etc., consistently applying industry guidelines 4.0 (Mayer et al., 2018). The goal of sustainable development of IT support in logistics is to provide a completely autonomous system for data processing, orders, preparation of a production plan and implementation of the production itself. This enables us to combine mathematical optimization with data intelligence, which is the basis for the development of IT tools for planning and operation in industrial production systems, taking into account the achievements of lean production. It is a set of tools, skills and knowledge of logistics management for the detection and on-going elimination of unwanted waste of production, improvement of product quality, reduction of production times and reduction of the costs of business operations (BMWi, 2018).

At the global level, industry and the whole economy are striving to introduce the latest smart technology. This need is especially evident in the automotive industry, which has introduced a virtual world in which a new, modern and technologically improved mode of production is based. With the help of digitalization and computer equipment and simulation programs, the development departments now enable, for example, the construction of individual tools for the manufacture of motor vehicle parts. We have found that the task of sustainable development is to transform the industry, to transform human beings and to establish production, which will be oriented toward the protection of the human environment: further in the production of those products, devices will assist a person in development. The introduction of smart technology is the main module of sustainable development; therefore any modernization of production and logistics processes is a systemic improvement. The field of research goes back to the development of Industry 4.0 and using automated equipment and intelligent systems goes beyond the limits of current development, which tells us that the development guidelines for Industry 5.0 are already in development, which will fully digitize the world. Today, it is impossible to compete in the market competitively if there is no adequate information support for a company's business, as it is impossible to manage business logistics without the use of bar codes, RFID and GPS navigation systems. Concrete support is reflected in the development of robotized and intelligent transport of complete traceability of goods on the road, in the introduction of new ways of identifying even with several dimensional bar codes, in RFID and more widely in GPS navigation systems (Mehami et al., 2018).

Many authors (Dandira, 2011, p. 31, Grover et al., 2011, p. 5, Shanuanu et al., 2010, p. 268) find that the paradigm of supply chain management extends to the field of enterprise resource planning (ERP) systems and costumer relationship management (CRM) systems. The fact is that IT support must be treated integrally; otherwise, we would only transfer costs from non-optimal operating procedures to nonoptimal information procedures. In manufacturing organizations, the core of the business mostly based in production, which is why integrated information support is usually based around the ERP system. These systems are traditionally based on a combination of material planning (MRP) and capacity. Today, it is a modern term for combined Advanced Planning Systems (APS), integrated into supply chain management (Bobek & Sternad, 2007, p. 3, Klasing et al., 2008, p. 27).

Information logistics support will be required in the entire information system of a modern enterprise based on the study of secondary sources (Wong, 2009, p. 148, Manuj, 2010, p. 53, Grover et al., 2011, p. 2) and our own thinking on at least three conditions:

- the planned IT system should cover the points of contact among the three main areas (logistics, IT and corporate governance);
- the planned information system of this kind must be robust to the extent that sufficient flexibility and adaptation according to the life cycle of the product;
- the planned IT system must enable the implementation of theoretical models, which can be applied to the business environment with minimal changes.

In empirical research, we focused on the development of information support for logistics and corporate governance, which demonstrated how it is possible to detect bottlenecks in the goods flow (lack of attention is devoted to managing inventory of goods, optimizing the costs of logistics and development, further mistrust is typical among employees, along with non-transparent and inefficient processes that lack the proper knowledge and human resources, etc.), where it is necessary to establish certain mechanisms (appropriate logistics management that sets the right goals and strategy of logistics, which is possible with appropriate information support), which must be harmonized so that a logistics infrastructure becomes the subject of strategic development of the company and logistics profession.

Conclusion

We presented various approaches and concepts of logistics support for the development of new products that relate to a sample of companies from a highly developed and competitive industry in Slovenia, which, according to other available research, are the most suitable for comparison. According to our survey for the identification of information needs in the development of logistics and corporate governance, which are important for the design of the concept of information support logistics, we found:

- modern enterprises interconnect creativity and innovation of all employees;
- that in the observed companies logistics has been developed in the past unsystematically;
- that logistics and development are not sufficiently complementary;
- that employees' awareness of the importance of information support in the processes of logistics development is insufficient;
- bottlenecks in the links among logistics, development and informatics (all these areas are too low in the hierarchy of decision-making, lack of information flow, etc.);
- that key personnel in the logistic profession are important in the development of new products;
- the main obstacles to cooperation among logistics and development are insufficient knowledge of these areas of top management and strategic management;
- important links between logistics, development, information technology and competitiveness of the company;
- there is still insufficient awareness of the overall organization of business logistics and the development of new products;
- that the influence of modern entrepreneurial approaches and strategic management on the management of logistics, development and IT costs are significant and
- significant influence of strategic management on the optimization of the observed business functions: business logistics, development and informatics on the profit of the company.

The results of quantitative research have shown that management of the observed companies is aware of the connection among logistic, development and informatics, but there are obstacles such as:

- too-late integration of logistics into development;
- insufficient awareness of the intertwining of logistics, development and informatics;
- lack of staff with specific technical skills;
- lack of professionals with interdisciplinary skills;
- lack of developers;
- absence of strategic management;
- presence of functional silos and
- lack of ideas, approaches and concepts for strengthening competitive capabilities of companies, etc.

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Trajnostni razvoj informacijskega sistema za logistiko kot orodje za krepitev konkurenčnosti na globalnih trgih

Izvleček

Glavni namen članka je motiviranje strokovnjakov in raziskovalcev na področju poslovne informatike ter logistike k interdisciplinarnemu povezovanju, da bi razvili nov koncept informacijskega sistema, ki bi pomagal okrepiti konkurenčno sposobnost podjetja. Članek analizira raziskavo, ki smo jo izvedli med top in strateškimi menedžerji ter vodji logistike v največjih slovenskih podjetjih. V primarno raziskavo je bilo vključenih dvesto podjetij, v reprezentativni vzorec jih je bilo izbranih šestdeset menedžerjev in na koncu trideset vodij v statistično analizo. Menedžerjem smo poslali vprašalnike po elektronski pošti. Podatke smo obdelali s statističnim programom IBM SPSS Statistics 19, kot metodi pa smo uporabili linearno regresijo in multiplo korelacijo. S primarno raziskavo smo pri vodstvenih delavcih izmerili zadovoljstvo z obstoječo informacijsko podporo za logistiko in ugotovili, da morajo biti logistični, strateški informacijski strokovnjaki še bolj povezani, da so potem vodstvene odločitve lahko tudi razvojne ter trajnostne. Na podlagi pridobljenih podatkov lahko sklepamo, da zadostno vlaganje finančnih sredstev v oblikovanje ustreznega informacijskega sistema pospešuje razvoj poslovne logistike. Izvirnost in vrednost članka se kaže v interdisciplinarnem pogledu na koncept informacijske podpore logistike pri razvoju novih izdelkov, v izvirnih povezavah različnih poslovnih funkcij, v možnosti oblikovanja novih informacijskih rešitev in v trajnostnem razvoju novih storitev za trg.

Ključne besede: Trajnostni razvoj, informacijski sistem, logistični proces, globalne dobavne verige, krepitev konkurenčne sposobnosti, strateški razvoj podjetja

Influence of Company Size on Accounting Information for Decision-Making of Management

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Abstract

The aim of this paper is to show the importance of accounting information for management, especially in medium-sized companies. Sampling was carried out according to the accidental principle, after which we selected 300 medium-sized and large companies. We used the questionnaire, which was standardized and implemented online. Two hypothesis were tested with a chi-square test and contingency table. In this study of Slovenian large and medium companies, we want to find out whether the size of the company has an impact on organizing a specific controlling service in a company and whether, in large companies, heads of accounting are more often members of management than in medium-sized enterprises. We discovered a bias between organizing a specific controlling department and the size of a company, and that large companies have more often organized a special controlling service than medium-sized enterprises. We also discovered the accounting officer's membership in a company's management team is not related to the size of a company. The results of the research could be used in controlling in medium-sized companies, where we suggest that management accounting in these companies is part of management decisions.

Keywords: management accounting, controlling, medium-sized companies, accounting information.

Introduction

Management of a company must establish a good as business process structure in order to achieve its business objectives. *Inter alia*, it should be supported with accounting information. The central theme of our paper is management accounting or controlling. The part of the accounting system providing information for management decisions is called "management accounting" or "controlling." We focus on the so-called European controlling and supporting decisive accounting. The purpose of this paper is to explore and increase awareness of managerial accounting and controlling among medium-sized enterprises. We investigate whether there is a difference between large and medium-sized enterprises according to whether they have a person in the field of managerial accounting in the top management team. We also investigate whether there is any difference

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in the fact that large and medium-sized enterprises exercise any control. In this research, we want to show the importance and usefulness of accounting information for the needs of decision-making in company management.

At the beginning, we present theoretical starting points on the importance of managerial accounting and controlling in a company and their presence in medium-sized companies. In the following chapters, they will be presented with results of the survey, where we will check whether there is an accounting manager and whether there is controlling in large and medium-sized enterprises.

With this paper, we aim to further reduce the research gap in management accounting and controlling in medium-sized enterprises, especially in regard to an accountant position in top management as well as in the controlling part of accounting as an independent area in a medium-sized company.

In the study, therefore, we want to find out whether company size has an impact on organizing a specific controlling service in a company and whether, in large companies, heads of accounting are more often members of management than in medium-sized enterprises.

Accounting Information for Management Decision-Making

Information and related systems are closely linked to the decision-making process of a company. It is important to know what information managers need in decision-making and how managers develop systems that allow them to obtain relevant information. Increasing complexity in companies causes managers increasingly depending on various internal and external sources of information (Dimovski, Penger, & Škerlavaj, 2007, p. 64). Hence, company information systems, especially accounting information systems, are gaining in importance. However, we should not neglect the information systems dealing with the collection and management of information coming from a company's environment.

Accounting systems form the main part of an information system in a company because it provides the only worthwhile information. This enables external users to learn about the success of a company's business, while the internal information provides a good information basis for management decision-making. The better the knowledge of users of accounting information about their design, their weaknesses and constraints and the appropriateness of decision-making, the better their efficiency in managerial decision-making (Hočevar, Zaman, & Petrovič, 2008, p. 37–38).

The objective of accounting information is to provide insight into a financial position of a company so that it is useful to users of information in their decision-making. For this reason, the information must be comprehensible, essential, reliable, and comparable. It must be prepared in such a way that their users will be able to read all the information they need when making decisions. It should also enable them to make information-based decisions on the future (Odar et al., 2011, p. 45).

Accounting information plays two roles in decision-making (Baiman, 1982; summarized by Kavčič, Koželj, & Odar, 2014, p. 119):
- Affecting quality of the decision;
- Facilitating the decision.

Operational management dealing with routine problems in a company requires precise and specific information on a narrow scale, usually transmitted by the company's formal information system at regular intervals. Strategic management, however, mainly deals with one-off decisions and therefore requires a wide range of information, which, in addition to financial and internal information, also includes nonfinancial information and environmental information. For such information, a formal information system is usually not established; therefore, strategic decisions are often based on intuition, creativity, and personal judgment (Čadež, 2013, p. 38).

The literature often reveals that accounting information from financial statements is primarily intended for external users of accounting information. However, such a claim is wrong because the informing process of internal users in a company is just as important. For internal users of accounting information, financial statements provide basic information on company performance (Bergant, 2013, p. 77). It should also be known, however, that the content of the accounting process is not decision-making but the provision of such information, so that decision-making in the company is facilitated and successful. Management must be aware of being responsible for decision-making. At the same time, it must consider accounting as a professional service that helps to perform the management function (Hočevar, 2007, p. 230).

For the top levels of management, information from financial statements is important at least from two perspectives (Bergant, 2013, p. 77):
- Top management should know what information the company has provided to external users and what information the latter could obtain from additional analysis

of the financial statements. A company's image in the environment is based on such information.

- Financial statements represent a basis for further detailed analysis of company's operations. Such an analysis is mainly based on the findings from the following areas:
  - situation and causes of changes in the fixed capital
  - efficiency of business
  - operation of business, financial, and all leverage
  - performance
  - situation and causes of changes in net short- and long-term indebtedness
  - the company's response to changes in indebtedness
  - situation and causes of changes in working capital
  - company's response to changes in working capital
  - situation and causes of changes in company capital adequacy
  - on the causes of changes in net cash flow from operations
  - situation and causes of changes in cash
  - ability of short-term and long-term borrowing
  - ability to invest

It is important to have good knowledge and control over techniques and models of the analysis of financial statements because only this allows for the full exploitation of their expressive power and the creation of information that could meet the needs of different users of accounting information in a company. By analyzing financial statements, we can obtain a lot of information about possible first signs of crisis, which is of utmost importance for timely action (Bergant, 2013, p. 78). It is also known that decisions are of higher quality if the decision-maker decides on the basis of relevant information than if he decides on common sense (Kavčič, Koželj, & Odar, 2014, p.119).

Accounting information also has certain limitations (Hočevar, Zaman, & Petrovič, 2008, p. 35-38):

- The first limitation of accounting information is that it constitutes only a part of the necessary information for the decision-making needs of the company. Often, information from other sources (nonfinancial information) is even more important than accounting. Accounting information only shows the value of a company's business and, for example, often matters about the situation in the company's business environment, how strong competition is, how quickly the industry develops, personal contact with a business partner, and the like.
- Another limitation of accounting information lies in the fact that accounting is not an exact science, i.e., scientifically precise, because information is often based on estimates, judgments, and the like. Some categories that are, for example, essential to a particular company, are difficult to qualify. Additionally, the true value of certain assets presented by financial statements could only be determined via subjective assessment.
- The third limitation of accounting information is in its essential characteristics, namely, it is expressed in terms of a monetary unit. For this reason, accounting information should also be adjusted for the impact of inflation on the value of data.
- The fourth limitation of accounting information is that it could serve as a basis for decisions adversely affecting a company as a whole. These are decisions that are good for a certain part of the company and not for the company as a whole. For this reason, good intracompany collaboration among units is important.

From all of the above, it follows that quality accounting information, with certain disclosures, is indispensable in managerial decision-making, irrespective of the level of management in a company (Mojzer, 2015).

Information is a kind of fuel that drives a company, while the main purpose of a manager is to transform information into action through decision-making processes. When management changes the information into action, the success of the campaign depends on the completeness, relevance, and reliability of the information; further, the success of a company is often dependent on the availability of information to decision-makers in a company (Dimovski, Penger and Škerlavaj, 2007, p. 66-67).

Walker, Fleischman, and Johnson (2012, p. 2) claim that management accountants in a company should play the role of a partner in a company, as they provide value-added services through work in the company and thus should also actively participate in the company's decision-making. Of course, this means that a company's management accounting must provide a quality base for decision-making, for which there must be a certain quality control system. Panchenko (2018) revealed that management accounting is an integral part of management because it contributes to the enterprise development and to the approval of its competitive market position.

Modern theory of accounting management is focused on the diagnosis of the internal environment for making management decisions, while negative factors of the external environment are beyond the scope of accounting and analysis (Bobryshev et al., 2015). Management accounting could also engage the budget to examine entire operations of the company with the goal of improving efficiency (Steffan, 2008, p. 58).

Creation of accounting information for business decision-making within an enterprise requires in-depth analytical processing of data and involves large costs, which makes it more difficult for entrepreneurs to decide on the creation of necessary records. The quality of decisions stands for the capability of managers to make decisions, which comply with the strategic business goals. In this respect, the essential factor determining the quality of the decisions is the mindshare paid to the strategic efficiency indices while evaluating the accounting information (Kuznetsova, 2017). It happens that, in companies, accounting is often organized only to the fullest extent and is limited to the treatment of past data to the extent that it allows companies to report to external users of accounting information (Mayr, 2006a, p. 9).

Every business decision should be based on quality decision-making. If a decision-maker in a company has relevant information, it must be a prerequisite for making good business decisions (Mayr, 2006b, p. 37). Relevant information for decision-making purposes in an enterprise can only be provided by a company with properly organized accounting, which depends on a company's information needs. Data and information of financial and cost accounting are thus not satisfactory because they deal with past events, based on actual business events and are designed in accordance with the prescribed accounting system. In order to create managerial information or information for business decision-making within a company, information on financial and cost accounting may not be sufficient; thus, other nonfinancial information is needed (Mayr, 2006b, p. 39–40).

Controlling

"Controlling" has many different definitions. It could be a company's business philosophy, a special leadership style, a decision-based (especially accounting information), or a strictly targeted business (Mayr, 2007, p. 26).

In theory, two views on controlling are known, namely, the Anglo-American view and the German view, i.e., Anglo-American school and the German school.

The American school argues that a controller is a decision-making manager dealing with managerial accounting and serves as an administrator for decision-makers with reports on guidance and decision-making (Koletnik, 2001, p. 7).

The American controller is in some way equal with an accountant, as he performs similar tasks; thus, the question arises if it is appropriate to introduce a new term for an existing one (accountant). On the other hand, the German controller does not equate with an accountant; he performs different tasks, as noted in the following.

Mayr (2007, p. 27) writes about a controller in German companies and says that "a controller of a sort is a flight controller or a controller – a cybernetics for internal billing, which with information and information helps" captains "in sales, production, development and purchase safely navigate the troubled business sea." The controller must warn in a timely manner when there is danger of a collision and when there are links among revenue, costs, and profits.

The difference between the two schools is therefore the focus of the individual controller. In the case of internal information, the American controller is also responsible for external information and can be compared with the accountant, as he performs all the tasks that fall within the field of accounting. The German controller is more focused on internal information, that is, the preparation of information for internal users. Controlling in American companies is usually also organized as a service within the accounting service, while controlling in German companies is usually organized as an independent service in a special department (Bergant, 2004, p. 4-5).

Controlling in today's sense of the word comes from the United States, where it was created in the second half of the nineteenth century. Its role was to solve economic financial tasks. The emergence of controlling has been a consequence of the economic situation since the 1970s, which demanded a new mentality (Mayr, 2007, pp. 27–28). The businessmen concluded that the then-existing system of double-entry book-keeping provided only information on the profits of the company's operations, which was not enough for corporate governance. Information was needed to clearly indicate the reasons for good or bad performance of a company to the management. The real boom in controlling in the US came after 1920, as the economic conditions at that time were overwhelmed with high business risks, and companies felt the need for economic experts to help management to direct operations (Hočevar, 2007, p. 18).

In Europe, controlling began to take effect only in the second half of the 1950s, mainly at the expense of American companies introducing it to their subsidiaries in Germany. The function of a controller was introduced into companies mainly in order to meet information needs (Hočevar, 2007, p. 18).

The controlling philosophy has led to changes in the style of leadership and the composition of decision levels. The overall goals set by a company's management are now becoming increasingly demanding to all those who care for their realization. All this represents a completely new view on accounting and other information activities in a company. From them, it is expected more, not just monitoring past processes and states but also providing information for calibrating and coordinating business processes that, in the first place, apply to accounting. Controlling is therefore an information activity that corresponds to decision-making-oriented accounting (Mayr, 2007, p. 29–30).

Most Slovenian accounting theoreticians believe that there is no difference between an accounting officer and controller because, in Slovenia, the professional standards have always demanded that, in addition to external reporting, it also ensures adequate internal reporting. This also follows from the theoretical definition of accounting in Slovenia, which consists of all four functions (book-keeping, planning, analysis, and supervision) (Hočevar, 2007, p. 19).

Research also shows an increasing number of companies that have reorganized their information systems and decided to set up a special controlling service that is subordinate directly to the company's management. In these companies, accounting is regarded as a backward-looking job and is a task for book-keeping (Kavčič, Koželj, & Odar, 2010, p. 36). This view of accounting is incorrect because accounting records most information about a company's business. For example, Kaligaro (2006, p. 15) says it is important for companies, in particular large companies, that controlling is excluded from the domain of financial and cost accounting, in both an organizational and content aspect because the scope of the content of controlling operation is process-oriented, more interdisciplinary, and exclusively located as management function of different levels.

Nevertheless, research shows that, in Slovenia, the number of companies having a special controlling department has increased. Many companies decide to set up a special controlling department that is subordinate directly to the management as the headquarter service. The reason for such a decision is probably due to the fact that companies need more and more information for decision-making. In these companies, accounting is viewed as a past-oriented service with the main task of book-keeping. However, accounting should not be looked at in such a way; it should be adapted to modern requirements (Kavčič, Koželj, & Odar, 2010, p. 36).

Opinions on how to organize controlling are shared among authors, with the majority of authors supporting the controlling department, advocating for organizing it within the accounting department.

For example, Kaligaro (2006, p. 15) claimed that it is important to exclude controlling from the domain of accounting and advocated for the organization of a special controlling service, subordinated directly to the management of a company. Other authors (Kavčič, Koželj, & Odar, 2010, p. 36) criticize the reorganization of the information system by setting up a special controlling department in such a way and proposing an adjustment of accounting to modern requirements. The accountant typically possesses the most information and helps a company to monitor the implementation of business plans and enable determination of the deviations between the planned and the realized (Mayr, 2007, p. 32).

Bergant (2011, p. 20) agrees with authors who do not approve organizing a special controlling service outside of accounting and say that the introduction of the term "controlling" has contributed to the popularization of the idea of the importance of information for decision-making as well as the importance of information producers. From the organizational point of view, confusion has arisen, as many companies introduced a new post of controller outside the accounting department, making the accounting limited to accounting. A special post of controller outside of accounting can be a source of disagreement in the organizational setting of a company, as it becomes unclear who in this case performs accounting, accounting analysis, and accounting supervision—all of which are accounting functions. Hočevar (2007, p. 19) has a similar opinion and says that controlling cannot be a management function because the content of controlling is not a decision but only support to decision-making.

Hypotheses, Methodology, and Data

As we have seen in previous chapters, many researchers have shown interest in understanding management accounting. Here, we want to analyze literature that is close to the purpose of our research. Little is known about the extent to which SMEs use contemporary management accounting (Armitage, Web, & Glynn, 2016). Management accounting research has previously focused mostly on large firms rather than SMEs despite the significance of SMEs in the UK economy (Tripathy, 2016).

Lopez and Hiebl (2005) showed that usage of management accounting is not only lower but also different in SMEs compared with larger entities. Wiedemann (2014) stated that, due to specific characteristics of SMEs, they generally use management accounting to a smaller extent than do large companies and that management accounting instruments are not as well developed.

Based on the above-mentioned literature as well as the findings here, with the aim of reducing the research gap regarding controlling in medium-sized enterprises, two hypotheses have been introduced:

H1: *Organizing a specific controlling department in a company depends on the size of the company, where in larger companies controlling service is more frequent than in medium-sized enterprises.*

Different opinions exist among different authors on the specific controlling department in companies. Kaligaro (2006, p. 15) says that it is important to eliminate controlling from the domain of accounting, while other authors (Kavčič, Koželj, & Odar, 2010, p. 36) criticize the reorganization of the information system by setting up a special controlling department subordinate directly to the company's management. They foresee that the reason for such an organization is the fact that businesses require increasingly more information for decision-making. In these companies, accounting is usually seen as a service that is geared toward the past. For this reason, Kavčič, Koželj, and Odar (2010, p. 36) consider that it would be better for companies to adapt the accounting according to modern information requirements, thus meeting all of a company's information needs. It could be concluded that, in particular, large companies, due to the large volume of operations, have organized a special controlling department; thus, we wanted to determine whether the company size affects the organization of a special controlling department. In relation to H1, the following questions were asked in the questionnaire:

– Is the manager of the accounting department also a member of your company's management team? The answer could be yes or no.
– How many employees does your company have? The answer could be "from 50 to 250" or "over 250."

H2: *In large companies, the accounting officer is more often a member of a management team than in medium-sized enterprises.*

Considering the increasing importance of accounting in companies, we conclude that the role of accounting managers in companies is also increasing. The head of accounting should therefore be involved in the decision-making process as a member of company's management team. The results in the 2006 survey conducted by the Slovenian Institute of Auditors show that, in management, the number of heads of organizational units providing data and information for decision-making decreases from year to year. Namely, in 2011 only 10 managers of the accounting unit were also members of the management team (Odar, Kavčič, & Koželj, 2014, p. 90).

We believe that an accounting officer is also a member of a management team more often in large companies, mainly due to increased volume of accounting information and also because managers in large companies are more numerous than managers in medium-sized enterprises. In the context of Hypothesis 4, we examined if it is true that, in large companies, accountants are more often members of the management team than in medium-sized enterprises.

In relation to H2, the following questions were asked in the questionnaire:

– In the case you have a special controlling service organized, how is it organized? The answer could be "in the context of accounting" or "outside of accounting."
– How many employees does your company have? The answer could be "from 50 to 250" or "over 250."

Description of the Sample

The population in the survey was represented by medium-sized and large companies from a business register accessible online. According to the Slovenian statistical office in 2015, and according to the number of employees, 1138 medium-sized companies and 238 large companies were registered in Slovenia. As a measure of company size, the 2013/34/EU European directive has been taken into account, according to which the number of employees is one among several criteria for the size of the company. Companies between 50 and 250 employees are defined as medium-sized companies, whereas companies with over 250 employees are considered large companies

Sampling was carried out according to the accidental principle, after which we selected 300 companies. Due to the low responsiveness of companies to fill in the survey questionnaire (out of the 300 invited companies, it was filled by only 46 companies), we sent an application to fill it up with an additional 150 randomly selected companies.

The questionnaire was standardized and implemented online, using the 1KA website. It contained 17 questions that were answered by employees in the accounting of medium-sized and large companies in Slovenia, from April 18, 2015, until May 22, 2015.

The final sample of the companies involved in the survey consisted of 100 companies. Out of these, 88% have been on the market for more than 15 years, 10% of the companies have been on the market between five to 15 years, and 2% of the companies were less than five years old. Among 100 surveyed companies, 61 operate in domestic and foreign markets, only three companies operate solely in the foreign market, while 34 companies operate in the domestic market. The majority of companies is under domestic ownership (there are 81 such enterprises); in addition, 10 companies are under foreign ownership, and nine enterprises are under mixed ownership.

The survey was carried out by medium-sized and large companies, whereas 54 medium-sized enterprises with 50 and 250 employees responded, and 43 large companies with over 250 employees, while three companies did not indicate the size of the company in the survey.

Most of the companies that participated in the survey come from manufacturing (22 companies), followed by trade, maintenance, and repair of motor vehicles (16 companies), others (11 companies), construction (nine companies), transport and storage (eight companies), electricity, gas, and steam (eight companies), and other activities (seven companies), which is evident from the graph above.

Most companies, i.e., 90 companies, have their own accounting department; for five companies, accounting firms carry out an accounting service; while five companies have combined accountancy with external accounting services.

The 53 companies participating in the survey also have a special controlling department. More than half (55%) of these companies have organized a special controlling department outside the accounting service, while 72% surveyed believe that a special controlling department in the company is needed. This is to some extent in contrary to the claims of most authors who do not recommend having a special controlling service; if it is already introduced, however, it should be formed within the accounting department.

Results

With H1, we assumed that organizing a specific controlling department in a company depends on company size. There are different opinions about the organization of a special controlling department, and we wanted to check the actual situation in companies in this field. We decided that, in particular, large companies, due to large volume of operations, have a special controlling department.

We checked the H1 with the bivariate analysis using the contingency table (crosstabs) and the use of the chi-square test in which the correlation between the variables and the degree of risk has been checked, which should be less than 5%, so that a certain hypothesis can be confirmed. We researched the relationship between the controlling department and the company's variables and identified the risk using the chi-square test.

The statistically significant value shows that the variables are statistically significant. A correlation exists between the controlling variables and the size of the company. The hypothesis H1 is thus confirmed with minimal risk (chi-square = 30.741; sig. = 0.0000).

The contingency table shows that 37 large companies (with more than 250 employees) have organized a special controlling service (86.0%), while only 16 medium-sized

Table 1. Chi-Square Test between Controlling Variables and Company Size

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	30.741[a]	1	0.000		
Continuity Correction[b]	28.507	1	0.000		
Likelihood Ratio	33.249	1	0.000		
Fisher's Exact Test				0.000	0.000
Linear-by-Linear Association	30.424	1	0.000		
N of Valid Cases	97				

Notes: a - 0 cells (0.0%) have expected count less than 5. The minimum expected count is 19.51, b - Computed only for a 2x2 table

Table 2. Contingency Table of Correlation between Controlling Variables and Company Size

			How Many Employees Does Your Company Have?		Total
			50 to 250	Over 250	
Do you have a special controlling department in your company?	YES	Number of answers	16	37	53
		Share: How many employees does your company have?	29.6 %	86.0 %	54.6 %
	NO	Number of answers	38	6	44
		Share: How many employees does your company have?	70.4 %	14.0 %	45.4 %
Total		Number of answers	54	43	97
		Share: How many employees does your company have?	100.0 %	100.0 %	100.0 %

enterprises (with 50 to 250 employees) have organized a special controlling unit (29.6%). We can therefore argue that, first, there is a bias between organizing a specific controlling department and the size of the company; second, that large companies have more often organized a special controlling service than medium-sized enterprises. Hypothesis H1 is therefore confirmed.

With H2, we assumed that, in large companies, the head of accounting is a member of management team more often than in medium-sized enterprises. We believe that this is mainly due to the increased volume of accounting information and also due to the fact that managers in large companies are more numerous than managers in medium-sized companies.

We checked the H2 with the bivariate analysis using the contingency table (crosstabs) and the use of the chi-square test, by which we checked the correlation between variables and the degree of risk, which should be less than 5%, so that a certain hypothesis can be confirmed. We have examined the relationship between the size of the company and the manager of accounting being a member of the management team and identified the risk using the chi-square test.

Table 3 demonstrates that the chi-square test does not show a statistically significant correlation between the accounting manager's variables as a management team member and the size of the company (chi-square = 2.422; Sig. = 0.120); thus, we cannot confirm Hypothesis H2. The risk is too high.

Therefore, we cannot say that the accounting officer is more often a member of the management team in large companies compared with medium-sized enterprises. The accounting officer's membership in the company's management team is not related to the size of the company. Thus, Hypothesis H2 is not confirmed.

Conclusion

We found that most companies support organizing a special controlling service. We have established that the size of the company does not affect membership of the head of the accounting in a company's management team. We suggest that controlling in medium-sized companies is organized within the accounting department and not outside the accounting service. According to the importance of management accounting, we suggest to heads of accounting in medium-sized companies to be part of management decisions. The main limitation of the survey is the insufficient number of questionnaires answered. Further, other researchers have stated that the relatively low response rate is consistently a major limitation in recent accounting research (Tuann Mat, Smit, & Djajadikerta, 2010). Therefore, the conclusions cannot be generalized to the population of medium-sized and large enterprises. Nevertheless, certain insight into the situation in this area is possible.

In the future, we recommend:

- To repeat the survey and compare the results of different time periods. This way, it would be possible to identify changes in the area under consideration.
- For a more detailed analysis of the use of accounting information for business decision-making in a company, the questionnaire should be expanded with questions about the frequency of information preparation for different levels of decision-making, the amount and type of information for individual decision-making levels, the collection of environmental information, the structure of employees in the accounting service, the education of accountants and management, the number of employees in accounting according to the functions of accounting according to the size of the company.
- To extend the research to management interviews at different levels of decision-making in order to gain a view on the preparation and use of accounting information for business decision-making. In particular, we

Table 3. Chi-Square Test between the Accounting Manager's Variables and Company Size

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.422[a]	1	0.120		
Continuity Correction[b]	1.788	1	0.181		
Likelihood Ratio	2.421	1	0.120		
Fisher's Exact Test				0.131	0.091
Linear-by-Linear Association	2.396	1	0.122		
N of Valid Cases	93				

Notes: a - 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.45; b- Computed only for a 2x2 table would be interested in the satisfaction with the prepared information bases and their actual information needs. For this purpose, an in-depth interview would be a more appropriate solution than a questionnaire.

- A similar survey could also be done on other criteria that determine the size of enterprises (e.g., by asset size and revenue) and could compare data with an existing survey.

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Vpliv velikosti podjetja na računovodske informacije, namenjene odločanju poslovodstva

Izvleček

Namen prispevka je prikazati pomembnost računovodskih informacij za najvišje poslovodstvo, zlasti v srednje velikih podjetjih. Vzorčenje je potekalo po naključnem načelu, po katerem smo izbrali 300 velikih in srednje velikih podjetij. Uporabili smo vprašalnik, ki je bil standardiziran in izveden na spletu. Dve hipotezi sta bili preizkušeni s hi-kvadrat testom in tabelo kontingence.

V raziskavi v slovenskih velikih in srednjih podjetjih želimo ugotoviti, ali velikost podjetja vpliva na organizacijo kontrolinga v podjetju in ali so v velikih podjetjih vodje računovodstva pogosteje člani najvišjega poslovodstva kot pri srednje velikih podjetjih. Ugotovili smo, da obstaja povezanost med organizacijo določenega oddelka za kontroling in velikostjo podjetja ter da so velika podjetja pogosteje organizirala poseben kontroling oddelek kot srednje velika podjetja. Ugotovili smo tudi, da članstvo računovodij v najvišjem poslovodstvu podjetja ni povezano z velikostjo podjetja. Rezultati raziskave so uporabni za kontroling v srednje velikih podjetjih, kjer predlagamo, da je poslovodno računovodstvo v teh družbah del odločitev najvišjega poslovodstva.

Ključne besede: poslovodno računovodstvo, kontroling, srednje velika podjetja, računovodske informacije.

Impact of Social Responsibility on the Quality of Company Governance

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Abstract

The central aim of the article is company governance, i.e., researching governance of a company that does not want to be only financially successful but also direct its governance toward socially responsible governance. The article begins with the definition of "theoretical backgrounds," in which social responsibility in regard to company governance improvement in quality is explained. The article then focuses on the measurement of the quality of company governance; in the research, the selected tool chosen to evaluate the governance of the chosen company regarding social responsibility, i.e., SEECGAN index, is used. Further, the case study of a Slovenian public limited liability company is used. One of the important research findings is the recognition that the addressed part of the SEECGAN index needs to be innovated and further developed. Additional questions for the completion of the index used presents the added value of the article. This article has two limitations: 1) it focuses only on the tool chosen to evaluate the governance of the chosen company regarding social responsibility; 2) the case study is based on publicly accessible data.

Keywords: governance, the quality of governance, SEECGAN index, social responsibility, environmental responsibility, strategic management, innovation

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Introduction

The term "governance" presents a set of mechanisms, incentives, and monitoring of the business, with the aim to guarantee the respect of interests of all company stakeholders. Governance should be directed toward transparent company decision-making (Dankova et al., 2015; Larcker et al., 2007). It is conditioned within the legal, regulatory, and institutional framework, which presents factors such as company reputation, long-term success, good business ethics, etc. (OECD, 2009; Štrukelj & Šuligoj, 2014). Many authors believe the necessity to improve governance originates from negative consequences, e.g., scandals, decline of share prices, negative company reputation, fraud, exploitation of the position, violation of human rights, and environment pollution and similar consequences, which started decades ago (Money & Schepers, 2007; Simmons, 2004; Walls et al., 2012). Jenkins (2006) states that the necessity to improve company governance is inner, in which a company decides for itself, or outer, in which the environment of a company encompasses the person who leads it to think in the direction of improvement. A significant factor in the improvement of company governance is social responsibility together with environmental responsibility (Husted, 2003; Kang & Moon, 2011; Simmons, 2004; Walls et al., 2012). Simmons (2004) states that financial indicators are no longer enough, i.e., companies must also tackle nonfinancial ones, be they ethical and moral, in their business. Husted (2003) believes the relation between social responsibility and company governance is the response to the questions that exceed economic, technical, and legal completions, which companies demand. In the author's opinion, the questions, related with the quality of the environment, employees' rights, community development, etc., are important as well; further, with the answers to these questions, a company not only achieves only economic effects but also social. Kang and Moon (2011) describe the concept of social responsibility as the desired viewpoint that successfully has an impact on the quality of governance. The authors believe the concept should be the basic part of a company's competitive strategy.

The aim of the article is to explain the importance of social responsibility from a company's governance perspective. The goal is the presentation of the concept of the governance, the tool of the SEECGAN index and social responsibility, and to include innovation for the SEECGAN index from the area of social responsibility. Two research questions are tested. Research question one (RQ1) reads: With the question of the social responsibility segment in the SEECGAN index, it cannot be identified in which way a company is being socially responsible; therefore, it is necessary to innovate by asking additional questions. Research question two (RQ2) reads: The studied company (NLB, d.d.) is aware of the meaning of "sustainable development"; thus, great importance is given to the meaning of "social and environmental responsibility."

This article discusses the theoretical backgrounds; in addition, the authors researched the relationship between company governance and social responsibility. The advantages of social responsibility and its impact on the quality of company governance are emphasized; further, the article explains the necessity to measure company governance. The theoretical part is supported with findings of a Slovenian public limited liability company as the case study. The article concludes with proposed questions, which present possible innovation and development of the index used and thus added value to the SEECGAN index.

Theoretical Background

Money and Schepers (2007) revealed that more companies are improving the quality of their governance in the direction of sustainable development, i.e., company governance should not represent only an economic viewpoint and maximization of the profit (Friedman, 1962; 1970) but also a moral viewpoint and the strengthening of relationships of all company stakeholders (Hacking & Guthrie, 2008; Husted, 2003; Money & Schepers, 2007; Simmon, 2004; Štrukelj & Šuligoj, 2014; Wight, 2007), beyond donations and investments (Du et al., 2010; Jenkins, 2006). The improvement of the quality of company governance toward strengthening relationships of all company stakeholders is possible with the introduction of social responsibility (Benabou & Tirole, 2009; Caroll & Shabana, 2010; Du et al., 2010; Peršič et al., 2018; Simmons, 2004). Social responsibility strategy is essential for social responsibility to be implemented (Du et al., 2010; Huang, 2010; Jenkins, 2006; Matten & Moon, 2008; Morsing & Schultz, 2006), and publishing nonfinancial reports is important (see EU, 2014). The authors state the areas of social responsibility, which are introduced to a company; in addition, they help a company to consider the interests of all company stakeholders. These areas are a concern for employees, concern for buyers/users and suppliers, a concern for the environment, a concern for the community in which the company works, and a concern for the ethical business and human rights (Moir, 2001; Benabou & Tirole, 2009). This indicates the importance of addressing different viewpoints of social responsibility, although some authors expose environmental responsibility (EU, 2014; Huang, 2010; Jo & Harjoto, 2011; Money & Schepers, 2007; Walls et al., 2012). However, the ISO 26000 standard (ISO, 2010) considers the care for employees and their relations as an important perspective of social responsibility (see also Aguilera et al., 2006; Benabou & Tirole, 2009; Brammer et al., 2007; Jenkins, 2006; Moir, 2001).

The relation between company governance and social responsibility is also described by Jo and Harjoto (2011); they believe social responsibility has a positive impact on the quality improvement of company governance. Also, Huang (2010) states that successful companies nowadays are those that, in the context of their governance, pay attention to social responsibility as well. The authors believe that managers should determine the strategies in achieving social responsibility in accordance with all interests of company stakeholders, inner as well as outer. The demand for this must come from company policy (Dankova et al., 2015; Štrukelj & Gajšt, 2019). To help social responsibility improve the quality of company governance, Huang (2010) states that companies must be ethical and authentic in their business and, above all, responsible for their actions

(See also ISO, 2010). Social responsibility should also be included in a company's code of conduct (Horváth et al., 2017; Peršič et al., 2018; Wheelen et al., 2018).

The authors, who deal with the field of company governance in relation to social responsibility, state that the introduction of social responsibility will benefit a company. Cheng et al. (2013) state the advantages of the financial viewpoint, noting that socially responsible companies have greater access to capital and are thus more attractive for investors. Consequently, companies with larger capital can easily accomplish given strategies and maintain a competitive position. Social responsibility has a positive impact on diminishing costs and risks as well. Husted (2003), Kang and Moon (2011), Benabou and Tirole (2009), and Jo and Harjoto (2011) mention the relation between financial benefits and competitive positions. Jamali et al. (2008) also state nonfinancial benefits such as trust and loyalty of buyers/users. Many authors (Aguilera et al., 2006; Brammer et al., 2007; Jenkins, 2006; Moir, 2001) emphasize employee motivation; thus, due to social responsibility, their loyalty to the company is increased. Jenkins (2006) adds that enhancing a company's reputation will improve the trust of all stakeholder participants and a company's transparency and culture quality. All stated benefits consequently have an impact on the improvement of the quality of the company as well as the quality of company governance.

The quality of company governance needs to be measured, which will give companies insight into their advantage/weak points that need to be promoted/improved. Good company governance diminishes the probability of business errors; also, the processes are performed wisely. Regular measurement of the quality of governance contributes to a more successful and more efficient business (Tipurić, 2015). Many indexes have been developed for the needs of the measurement. Later, the article focuses on the tool of the SEECGAN index.

Methodology

The chosen methodology is qualitative. Two types of methods are used for the theoretical backgrounds: a descriptive method for described facts and a method of compilation, as the topic is based on the findings of various authors (Ivanko, 2007). This article chooses a case study method for the in-depth analysis of the impact of social responsibility on the quality of company governance, which is presented with the selected viewpoint of the SEECGAN index used as the tool to evaluate the governance of the chosen company regarding social responsibility (Omazić et al., 2015; Tipurić, 2015). The SEECGAN index stands for South East Europe Corporate Governance Academic Network, which was developed in 2014. The purpose of the index is to measure the quality of company governance and is used especially for companies in southeastern Europe (Tipurić, 2015). The SEECGAN index is structured into seven segments: the committee's structure and management (in the case of a two-tier system of the company governance, the segments double, as it is necessary to assess the function of the supervisory board and the management), the transparency of the business and the publishing of information, shareholder rights, social responsibility, the revision and inner control, risk management, and the awards and rewarding (Tipurić, 2015). This article focuses on social responsibility. In the case study, the NLB, d.d. company is presented. It is the largest banking and financial group in Slovenia and has a good market position in southeastern Europe. It is assumed that the studied company is aware of social responsibility. Because the article focuses on only one index, and because all information for the case study NLB, d.d. comes from secondary sources (annual reports and other internal documents), this article has certain limitations.

Research

Table 1 presents part of the SEECGAN index, which is associated with the social responsibility segment. For better insight, the table is presented in the case of the studied company (NLB, d.d.), which was subjectively selected due to its well-presented publicly available data. The limitations in this table are secondary sources for all information within the right part of the table (column comment).

The segment of social responsibility is represented by 10 questions within the SEECGAN index. All the answers, obtained for the case of the studied company, were affirmative; consequently, the company received a grade of 10 in the segment researched, which expresses first-rate governance in the field of social responsibility. The strategy of social responsibility of the NLB d.d. is written and publicly published, which is also in the case for the procedures of social responsibility in terms of donations and investments. Also, its nonfinancial data are publicly reported and in accordance with the GRI standards and ISO 14001 standard. To prevent corruption and nonethical business practices, two internal codes of conduct are established; further, it is necessary for all banking members, who are under the auspices of the NLB Group, to comply with them in its activities. Numerous sponsorships and donations are described in the corporate governance policy of the NLB d.d. (see Politika upravljanja NLB, 2017); further, each banking

Table 1. Implementation of Judgment of Governance of the SEECGAN Index from the Perspective of Social Responsibility in the Case of the NLB d.d. Company

Social Responsibility	YES=1; NO=0	WEIGHT (min=1; max=3)	WEIGHTED ASSESSMENT	SOURCE	COMMENT
Does the company have the strategy of social responsibility, which is publicly available?	1	2	2	https://www.nlb.si/nlb/nlb-portal/slo/o-banki/vlagatelji/financna-porocila/letno-porocilo-2017-slo.pdf	NLB d.d.'s strategy of social responsibility is published in the stated annual report and also in the document Politika upravljanja NLB, d.d. (2017).
Are the procedures of social responsibility (donations, investments in the local community, etc.) explicitly stated in the statement of the fundamental values of the company or in similar documents?	1	2	2	https://www.nlb.si/nlb/nlb-portal/slo/o-banki/vlagatelji/financna-porocila/letno-porocilo-2017-slo.pdf	NLB d.d.'s procedures in terms of donations are published in the stated annual report and also in the annual reports of social responsibility (see the document Letno poročilo družbene in okoljske politike, 2017).
Does the company support the standards of social responsibility or initiatives, such as the UN Global Compact, the equator principles, voluntary principles on security and human rights, or industry-best practice or other national/international protocols, associated with corporate social responsibility, environmental responsibility, social responsibility etc.?	1	2	2	https://www.nlb.si/druzbena-odgovornost-letna-porocila-dop-2017	NLB d.d. in relation to social and environmental responsibility reveals its data according to the GRI standards. In relation to the environmental responsibility, they comply with ISO 14001 (see the document Družbena in okoljska politika, 2010).
Does the company have any published nonfinancial reports?	1	2	2	https://www.nlb.si/druzbena-odgovornost-letna-porocila	Nonfinancial reports of NLB d.d. are published on its website.
Does the company prepare reports on its social responsibility in compliance with the UN Global Compact, Global Reporting Initiative, B-corporation principles, or some other internationally recognized standards of reporting on socially responsible business?	1	3	3	https://www.nlb.si/nlb/nlb-portal/eng/about-us/social-responsibility/report-2017/gri-standards-2017-slo.pdf	The report on social and environmental responsibility is revealed according to the GRI standards.
Does the company have a code of ethics or company policy, concerning corruption or nonethical business of the company?	1	2	2	https://www.nlb.si/nlb-danes-in-jutri-2014-slo.pdf	NLB d.d. uses two codes of ethics: Kodeks korporativne skladnosti NLB, d.d. (see listed) and Kodeks ravnanja v NLB Skupini (2018).
Does the company have developed procedures for financing the projects for supporting local community and donations (is there a public tendering procedure or a similar transparent procedure for choosing the projects which will be financed by the company)?	1	2	2	https://www.nlb.si/nlb/nlb-portal/slo/o-banki/vlagatelji/dokumenti/politika-upravljanja-nlb-nov.2017.pdf	The company's sponsorship is defined in a special document. The implementation of sponsorship and donations is left to the members of the NLB Group.
Does the company have a member of a supervisory board/management or a department, which primarily deals with a socially responsible business?	1	2	2	https://www.nlb.si/druzbena-in-okoljska-politika-nlb.pdf	A certain administrator deals with the social and environmental responsibility in NLB d.d.
Does the company perform special meetings with influential stakeholders, on which they display their formal opinion?	1	1	1	https://www.nlb.si/nlb/nlb-portal/slo/o-banki/vlagatelji/dokumenti/politika-upravljanja-nlb-nov.2017.pdf	The communication strategy and the form of social and environmental policy are written in the mentioned document.

Table 1. Implementation of Judgment of Governance of the SEECGAN Index from the Perspective of Social Responsibility in the Case of the NLB d.d. Company – continuation

Social Responsibility	YES=1; NO=0	WEIGHT (min=1; max=3)	WEIGHTED ASSESSMENT	SOURCE	COMMENT
Has the company rooted the social responsibility in its supply policy, quality standards and code of conduct?	1	3	3	https://www.nlb.si/kodeks	The social responsibility and its meaning of NLB d.d. are defined in the following documents: in the annual report, in the Kodeks ravnanja v NLB Skupini (see listed), in the Kodeks korporativne skladnosti NLB, d.d. (see the document NLB Danes in jutri 2014) and in the document Politika upravljanja NLB, d.d. (2017)
The Segment Assessment		**21**	**21**		

Source: Omazić et al., 2015; adapted for the NLB, d.d. company

member decides how he or she will perform it. An administrator in the company deals with the establishment of social and environmental responsibility. In the previously mentioned document, the communication strategy and forms of social responsibility are written as well. The supply policy, the quality standard, and the codes of conduct contain the concept of social responsibility. The social responsibility in relation to the governance was reviewed in the theoretical backgrounds. Because NLB d.d. accepts the concept of social responsibility, it is part of the company vision, company policy, and business strategies. They also act in accordance with ethical values.

Discussion

Even though all the answers in the research were affirmative, it is believed that, based on questions in Table 1, it is difficult to conclude in which way the company is socially responsible. For that reason, it is suggested to add a few more questions to Table 1 for further development. The strategy of social responsibility and its public announcement, which is the first question in the index, is well placed. Various authors, including Du et al. (2010), Huang (2010), Jenkins (2006), Matten and Moon (2008), Morsing and Schultz (2006), indicated that the strategy is essential for social responsibility to be implemented. For the next question, which refers to donations and investments in terms of social responsibility, it is believed that only the economic viewpoint of social responsibility is overly emphasized (Hacking & Guthrie, 2008; Wight, 2007). For that reason, it is suggested to add the following question to the index: "*Does the company have defined areas in which its social responsibility is displayed?*" This added question would address if a company is socially responsible in advanced defined target areas of function (mentioned also in theoretical backgrounds). In terms of those areas, companies can mention donations and investments but also other viewpoints. In regard to that topic, authors Du et al. (2010) and Jenkins (2006) make suggestions that go beyond donations and investments. The third question of this segment deals with which standards of social responsibility the company follows. The following question refers to the nonfinancial reports. For this purpose, in 2014 in the EU, a directive was statutorily defined, and it stated that large companies are obliged to publish nonfinancial reports (see EU, 2014). The following question is related to the previous question, to the preparation of the reports on social responsibility. The next question refers to the company's code of conduct and its content we recommend to innovate (according to Horváth et al., 2017; Peršič et al., 2018; Wheelen et al., 2018). The changed question reads: "*Does the company have a code of conduct in which social responsibility is presented as well?*"

The next question is related to the second question in the researched segment of the index. It is referred to as the financing procedures to pursue donations and investments in terms of social responsibility. Again, it is believed that this question, as well as the second question in the index, overly emphasizes the economic viewpoint (Hacking & Guthrie, 2008; Wight, 2007). In compliance with the theoretical backgrounds, company governance should not only tackle a financial viewpoint but also a moral one (Husted, 2003; Money & Schepers 2007; Simmon, 2004; Štrukelj & Šuligoj, 2014). It is believed that it is necessary to consider environmental responsibility in terms of social responsibility (Huang, 2010; Jo & Harjoto, 2011; Money & Schepers, 2007; Walls et al., 2012). Social responsibility united with environmental responsibility presents a step closer to sustainable development. Also, the EU directive (EU, 2014) determines that large companies should add environmental responsibility to nonfinancial reports. The question, which we propose to be positioned for this purpose, is as follows: "*Is the company in terms of social responsibility dedicated also to the environmental* *responsibility in terms of using environmental-friendly products/services?*" The following question refers to identifying if the company has a special department for social responsibility. In the segment of social responsibility, it is also suggested to include the following question: *"Does the company have defined care for employees?"* This question covers an important area of social responsibility, which is also in compliance with the theoretical backgrounds of several authors (Aguilera et al., 2006; Benabou & Tirole, 2009; Brammer et al., 2007; Jenkins, 2006; Moir, 2001). Also, the ISO standard 26000 (ISO, 2010) considers the care for employees and their relations as an important perspective of social responsibility; therefore, it is believed this question would be well-placed. The penultimate question refers to the company's meetings with company stakeholders for the purpose of social responsibility (Dankova et al., 2015; Peršič et al., 2018). We thus recommend adding the following questions: *"Is the company the winner of an award, associated with social responsibility (Slovene companies: the HORUS award, the Golden Thread award, Family-Friendly Company award, Top Employer award, etc.)?"* The added question would justify a company's contribution to social responsibility. The mentioned awards are limited in time, which means that awarding companies must constantly improve their processes to also win the award the next year. It is believed that this question shows not only if a company is socially responsible but also which companies are constantly improving and advocating social responsibility. This question is suggested in compliance with the award-giving institutes, e.g., IRDO Institute (IRDO, 2019), the leading Slovenian organization for the concept of social responsibility. The last question is well placed because it refers to the integrity of social responsibility via the company's policy, quality standards, and its behavior.

Conclusion

This article covers important topics for company performance, with social responsibility and its impact on the quality of company governance as the main research object. It is concluded, based on theoretical backgrounds (Brammer et al., 2007; Dankova et al., 2015; Huang, 2010; Jamali et al., 2008; Jo & Harjoto 2011; Money & Schepers, 2007; Štrukelj & Šuligoj, 2014) and the case study, as presented, that social responsibility positively affects a company (which is also revealed by, e.g., Dankova et al., 2015; Du et al., 2010; Huang, 2010; Walls et al., 2012) and lifts the quality of company governance (which is also revealed by, e.g., Aguilera et al. 2006; Jamali et al., 2008; Kang & Moon, 2011; Štrukelj & Šuligoj, 2014). It is thus concluded that the concept of social responsibility is directly associated with company governance (EU, 2014; ISO, 2010; Štrukelj & Gajšt, 2019; Tipurić, 2015). Further, it is shown in the article that implementation of the social responsibility concept brings many benefits for company performance, such as financial (Benabou & Tirole, 2009; Cheng et al., 2013; Husted, 2003; Jo & Harjoto, 2011; Kang & Moon, 2011) and nonfinancial (Aguilera et al., 2006; Brammer et al., 2007; Jamali et al., 2008; Jenkins, 2006; Moir, 2001). It is further suggested to regularly measure the quality of governance, i.e., by measuring the quality of governance, companies can expose their advantage/weak points and the direction of their promotion/improvement (Omazić et al., 2015; Tipurić, 2015).

This article presented a case study on the NLB, d.d. company, which indicated that the studied company is socially responsible. However, all information for the studied company is based on secondary resources (publicly accessible annual reports and other internal documents), which presents important limitations of this article. Also, another limitation here is the SEECGAN index used for measuring the quality of company governance, especially for the companies in southeastern Europe. In this research, it is the only index that is researched; further, this index is only from the viewpoint of social responsibility.

The value in this article presented added questions for the SEECGAN index to further develop important propositions from the theoretical and practical point of view. It is believed, based on original questions from the SEECGAN index, that it is difficult to conclude in which way a company is being socially responsible. With added questions, which are based on theoretical backgrounds and which provide starting points for further research, it is suggested that a company defines target areas of a function to pursue social responsibility. Also, to root and incorporate social responsibility into the company's business, it is important to include social responsibility in the company's vision, policy, and business strategies and in its internal codes of conduct. The next added question focuses on environmental responsibility. The original index questions refer to social responsibility, and none of the questions refer to environmental responsibility. It is believed that the synergy of these areas together presents a step closer to sustainable development. The next added question refers to care for employees because this area is among the important areas of social responsibility. It is believed that companies must incorporate their social responsibility within the selected areas and continue with its enlargement onto other areas. The last suggested question would justify companies' social responsibilities. The award giving companies for the area of social responsibility measures/research the companies' social responsibility.

In the Introduction, two research questions were proposed. Both can be confirmed based on the theory-building qualitative research. The research question RQ1 in regard to the needed innovation of questions in the segment of the social responsibility in the SEECGAN index was confirmed in the Discussion section, where additional questions for determining the way of the company's social responsibility was confirmed, supported with the theoretical findings. The research question RQ2 about the awareness of the meaning of sustainable development and thus the emphasis on the social and environmental responsibility of the NLB d.d. company, based on the publicly available data, can be confirmed because discovered that the company researched has developed an internal document for this purpose, i.e., the social and environmental responsibilities are written in codes of conduct and in the company policy. All nonfinancial reports are chronologically publicly available to all stakeholder participants. The NLB d.d. is also the winner of many awards and certificates from the area of social and environmental responsibility. It is thus suggested to perform a deeper study from this area in further research and to determine the compliance presented here with publicly available data.

The conclusions are based on information that companies are socially responsible or at least report to be. Due to this, the present research can confirm that social responsibility as a part of companies' governance, which has an impact on the quality of companies' governance. For further research, it is suggested to develop the measures of company governance with enough holistic determination, e.g., with the developed innovated social responsibility segment of the SEECGAN index, as proposed in this research.

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Vpliv družbene odgovornosti na kakovost upravljanja podjetja

Izvleček

Osrednji namen prispevka je upravljanje podjetja, ki ne želi biti le finančno uspešno, temveč svoje upravljanje usmerja tudi v družbeno odgovorno poslovanje. Prispevek začnemo z opredelitvijo teoretičnih izhodišč, v katerih pojasnjujemo družbeno odgovornost kot vidik izboljšanja kakovosti upravljanja podjetja. Pri tem se osredotočamo na merjenje kakovosti upravljanja podjetja, kjer v raziskavi uporabimo za to izbrano orodje SEECGAN indeksa za oceno upravljanja izbranega podjetja z vidika družbene odgovornosti. Uporabimo študijo primera slovenske delniške družbe. V nadaljevanju ugotavljamo, da bi bilo smiselno obravnavani del SEECGAN indeksa inovirati in dalje razviti. Dodatna vprašanja kot dopolnitev uporabljene metodologije predstavljajo dodano vrednost prispevka. V prispevku se srečujemo z dvema omejitvama, saj se osredotočamo le na izbrano metodologijo uporabljenega indeksa, študija primera pa temelji na javno dostopnih podatkih.

Ključne besede: upravljanje, kakovost upravljanja, SEECGAN indeks, družbena odgovornost, okoljska odgovornost, strateški management, inovacije.

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International Environment: Recovery and Resolution Regimes as the Pillar of the Banking Union

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Abstract

The purpose of the article is to present the possible regimes of bank resolution in the euro system and to highlight open questions concerning additional capital buffers and the valuation of assets according to the Bank Recovery and Resolution Directive (BRRD). The bail-in tool is used to write down or to convert certain liabilities with the purpose of restoring the capital adequacy. The valuation exercise would determine the amount of loss absorbtion to restore viability of the institution and capital adequacy. The bridge bank tool offers deeper restructuring powers to the competent resolution authority. Sale of the business tool is actually a variation of the bridge bank tool, enabling the resolution authority to transfer assets and liabilities to investors. The asset separation tool always is combined with another tool. The write-down is not a resolution tool, as it affects equity, while a bail-in tool goes further to other subordinated debt and senior debt. It is possible to establish additional resolution tools in the national legislation, as long as these tools are compatible with the principles of directive and national legislation in order to support cross-border group resolution. The issue of bank overregulation and the ability to meet the requirements without negative effects on the economy is emphasized.

Keywords: recovery and resolution regimes, bridge bank, sale of business, asset separation tool, bail-in, regulation.

Introduction

In January 2014, a proposal for a regulation on structural measures increasing resilience of the banking sector in Europe resulted as a reaction to the Liikanen report.[1] Bank resolution and restructuring are important issues for the future regarding the Banking Union. The role of banking supervisors is to assess recovery plans and implement measures needed for those plans. EBA was proactive with recommendations from 2013 on (see EBA, 2013). The goal of resolution schemes is that ordinary costumers do not notice any difference in day-to-day banking business even if their bank becomes distressed. The resolution scheme gives an alternative to compulsory liquidation, in which proceedings take many years and during which creditors do not have access to their funds. Therefore, it is not desirable to wind up at a bank via compulsory liquidation.

[1] It aims at a structural reform relating to systemic risks deriving from “too-big-to-save,” “too-big-to-fail,” and “to-complex-to-resolve” [COM/2014/043 final-2014/0020 (COD)].

The reduced market discipline and incentive to take excessive risk caused by the safety net has long been recognized, which is one of the major reasons for the prudential supervision of banks. The problem with this change in structure is not that banks are larger, but that the scope of the safety net and its subsidy—and therefore their sizes—has expanded beyond traditional bank activities that provide external social benefits (see Morris & Hoenig, 2011). The consequence of the last crisis involves limitations for doing business in banks under a resolution process.

The restructuring and resolution of an international bank with subsidiaries, branches, and representative offices in different countries does differentiate from a bank organized nationally. Resolution authority is allowed to decide, together with the competent authorities, about the separation of high-risk trading activities in the context of a resolution planning review.[2] The question of bank insolvency[3] and bank restructuring[4] has to differentiate in this context.

Recovery and Resolution

Together, with higher capital and liquidity requirements, the enhancement of resolution regimes was a central element of the international regulatory response to increase banks' resilience. The Financial Stability Board's key attributes of effective resolution regimes for financial institutions provide the new harmonized international standard for resolution regimes for financial institutions. Within the European Union (EU), more than 40 legislative and non-legislative measures were adopted in the wake of the financial crisis. A new framework for dealing with failing banks, the Bank Recovery and Resolution Directive (BRRD), was agreed upon in 2014 (EUR-Lex, 2014, 2017). It builds on other EU legislation, such as the capital adequacy requirements for banks (CRR/CRD), the European Market Infrastructure Regulation (EMIR), the Deposit Guarantee Scheme Directive (DGSD), and EU state aid (Festić 2012), as a cornerstone in creating a more stable banking system that serves the economy at large (ZRPPB 21017).

[2] Separation is imposed only under certain conditions and following an in-depth review of the impact of those activities on the risk profile and behaviour of the core credit institution (see COM/2014/043).

[3] Moreover, measures to harmonize insolvency laws could have a positive impact on the banking union; particularly, those harmonizing the hierarchies of claims could strengthen the functioning of the resolution mechanism (see Valiante, 2016).

[4] Regulatory arbitrage has been one of the major factors contributing to the severity of the crisis. Given the ever more complex set of future regulatory constraints, it may keep generating costly negative spillover effects on the whole economy (see Petitjean, 2013).

The recovery and resolution are both ex ante crisis management measures, and their common characteritic is preparation for prevention. The recovery plan objective is to lessen the probability of a bank's resolution, while the resolution plan objective is to lessen the impact on society at a large scale. The institution itself is responsible for the recovery plan, while the resolution authority, together with the competent national authority, is responsible for the resolution plan. The central bank, supervisor, and head of government are responsible for resolution plan implementation. The role of the resolution plan is to defend the financial system, and the role of recovery plan is a sound risk management of an institution. Basic pillars for a recovery plan are capital and liquidity planning, while the basic pillars for resolution planning enable the authorities sufficient information for an effective decision-making process. The EBA proposes an identification process based on a combination of standard qualitative and quantitative criteria and internal criteria developed by the institutions (EBA, 2013; Directive EPC, 2011).

The purpose of the recovery plan is to ensure business continuity. EBA requires that the recovery plan includes scenarios for a systemic-wide events, idiosyncratic events, and a combination of systemic wide and idiosyncratic events:

– taking into account systemic wide events, an analysis has to include the shortfall from public bonds impact on capital and liquidity, the business model impact on profitability, and its effect on payment systems, etc.;
– taking into account idiosyncratic events could be a severe write-off in a certain asset class, the leveraged buyout market effect.

The most important part of the recovery plan is to describe the potential crisis situation and scenarios and the actual actions against the simulated crisis scenarios. The reliability of a recovery plan is determined by negotiations with relevant stakeholders and truthfulness of the potencial crisis scenarious; further, it is focused on the specific balance sheet items. The competent authority takes into account capital and funding structure, organizational structure, and risk profile of the institution, etc., in order to require the institution to submit a revised plan and demonstrate effects of deficiencies that need to be addressed (against a set of predefined criteria) and measures needed to address obstacles for recovery plan implementation. The competent authority has the right to refer a matter of disagreement to the EBA in order to reach a joint decision regarding the entities in their jurisdiction.[5]

[5] More in directives of the European Parliament and the council (2011), EBA (2013), EUR-Lex 2014, 2017), BRRD (2014), BIS (2019).

There are relevant indicators signaling early distress related to a situation in which the institution is likely to fail. Early intervention, as a preventive measure, tries to avoid resolution. The competent authority orders such measures in the context of ECB single supervisory mechanism (SSM), while the single resolution board (SRB)[6] is responsible for resolution measures (the requirement of business strategy changing, the introduction of legal and institutional measures, calling of a shareholders assemly, the update of recovery plan, etc).

The purpose of the resolution plan is to ensure systemic protection on the basis of sufficient information for the decision-making process. The focus of this article is to present resolution in more detail.

Resolution Regimes

The BRRD (2014) and the SRM (2016) regulations have gone a long way toward harmonizing EU insolvency law for banks by entrusting administrative authorities.

In addition to lacking a focus on systemic risks, there is a need to enhance crisis management, including resolution and transparent burden sharing; furthermore, many reform areas have lagged: a lack of a specific enough analytical framework and appropriate data with which to evaluate the possible costs and benefits of various regulations and their interactions and a lack of practical methods of implementation or enforcement of conceivable reforms (see Claessens & Kodres, 2014).

Resolution means that a bank is liquidated or it continues its business via contributions from shareholders and creditors; further, its creditors register their claims and assets are sold. Shareholders and creditors do not get full repayment and share the burden of restructuring.[7] An institution could prolong its business partially with support of creditors and their contributions. The new bank resolution system addresses the regulatory gap of ordinary insolvency regimes, which do not offer the processes and tools that are specific enough to fit the complexity of banking institutions due to the high associated social costs of the bank in operation until now. It is also possible that resolution proceedings might involve bank insolvency in the future. Resolution can into four tools (Schelo 2015, 81–95):

– sale of business (which allows for the total or partial disposal of the entity in a financial transaction, the approach compares to some extent to the bridge bank; due to combination of continuation and insolvency);
– bridge bank (all or part of the business is transferred to a temporary entity partially or totally publicly owned; the new bridge bank is up for continuation; certain liabilities are left behind at the remaining institution; remaining bank entity could be put, after a certain period of time, into ordinary insolvency proceedings). Operating a bridge bank is a labor-intensive process and may require ongoing liquidity support from the government. If the calculation of the franchise value of the troubled bank is incorrect, and a subsequent sale is not made or cannot be made at an acceptable price, the cost of operating the bridge bank may exceed the cost of liquidation (see McGuire, 2012). In some jurisdictions, the bridge bank option is reserved for systemically important banks;
– bail-in (where debt or equity could be written down or converted, burdens are placed on shareholders and creditors of the bank rather than on the public; bail-in does not lead to an insolvency process of any part of the bank; it is applied if the bank can be rescued by an injections of equity; creditors are converted into shareholders; this conversion force the creditors to participate in the restructuring process and to clean up the bank balance sheet). For economies in recession with high unemployment, the bail-in tool provides the most efficient crisis resolution mechanism. Under no circumstances do taxpayer-funded bail-out schemes outperform bail-in with private sector placement (see De Grauwe, 2013).[8]
– asset separation tool (whose liquidations could cause market disruption and assets could be transferred to an asset management company, partially or totally owned by the public; the approach compares to some extent with the bridge bank due to a combination of continuation and insolvency).

The main resolution tools with private placement before the public sector enters into resolution are: i) the bail-in tool, which ensures that losses are absorbed by shareholders and creditors; ii) the sale of business tools, which allows the resolution authority to sell all or part of the failing bank to a private acquirer.

[6] See SRB (2016), Financial Stability Board (2011), SSM (2016).

[7] The cascade of the liabilities in order of loss bearing: common equity Tier 1, additional Tier 1 and Tier 2 instruments, claims from senior executives, other suborinated creditors, unsecured nonpreferred claims (see ZRPPB 2017, articles 50, 78, 80-83, Directive EPC, 2011).

[8] Avgouleas and Goodhart (2015) provide an explanation why bail-in regimes will not eradicate the need for injection of public funds, where there is a threat of systemic collapse because a number of banks have simultaneously entered into difficulties. On the other hand, principle “too big to fail“ distorts competition, creates moral hazard, and threatens the public finances, which are the introduction of special resolution regimes for banks. For resolving large, complex cross-border banks, without equity support from taxpayers, bail-in offers the promise of such a solution (see Huertas, 2011).

The EU resolution framework aims at protecting creditors, which must not be "worse off" than under liquidation, in that context of assessing whether shareholders and creditors would have received better treatment under insolvency proceedings than in resolution. Where the operations of a bridge institution are terminated, the bridge institution shall be wound up under national insolvency law. Part of the assets, rights, or liabilities of the original bank that have not been transferred to a bridge bank may be transferred to an asset management vehicle. Asset management vehicles receiving assets, rights, or liabilities under the asset separation tools shall maximize their value through eventual sale or orderly wind-down under national insolvency law (see Deslandes & Magnus, 2018).

Resolution has the impact on shareholders losing equity and creditors losing the value of their claims. Creditors get paid before the shareholders receive their equity back. Directive BBRD (2014) refers to loss bearing instead of setting up a distribution order. The traditional distribution applies to proceeds generated when assets are liquidated. Holders of subordinated debt notes participate in annual losses so that the issuing capital can be restored. Contractual loss sharing can be triggered before the institution is likely to fail. The capital could be provided by decreasing the institution's liabilities by converting debt into equity or by partial transfer in a bridge bank, which could also have a liquidity effect. If the liability is converted into equity of left behind in the failing institution, the institution is free from paying this liability, and less funds are needed from the resolution fund(s).

No creditor is worse off, as it would be in normal insolvency proceedings. Similar rules are also found under existing national bank insolvency laws. The principle of assessment of the position under normal insolvency proceedings, as compared with the position after bail-in, is a subject of a detailed valuation.

We have different valuations regarding the phase of the cycle, market conditions, and health of the bank; according to Hellwig (2018), the principle "no-investor-worse-off" as applying *ex post*, after everything has been settled, or *ex ante*, at the time of the resolution decision. The allowance for a buffer in a provisional *ex ante* suggests a final accounting *ex post*, when the realizations of risks are known, so that, if the buffer was not needed, further distribution can made to investors/creditors. The concept of "economic value," as distinct from market value, could be problematic if there is no feasible strategy attached to it. If markets are depressed, one may consider prices to be abnormally low, so that holding or managing them is preferred to a sale. We should distinguish between asset impairments coming from considerations of prospective returns and asset impairments coming from frictions in the markets and between threats to bank solvency and threats to bank funding/liquidity. If these threats concern bank funding and asset liquidations at depressed prices, public funds may eventually not be needed. If threats to bank solvency come from nonperforming loans, taxpayer support may be essential. The notion of "real economic value" as the price at which assets should be transferred is problematic and leaves ample room for hidden subsidies. Additional risks may come from the burden on the government's fiscal stance (see Hellwig, 2017).

Creditors of the same class are treated equally. In Germany, under a former regime, the authorities had free discretion to apply different haircuts within the same class of creditor group (stronger creditors would be disadvantaged and weaker creditors would be incentivised regardless of the reason for their particular weakness or strength). The criterion for a decision of some creditors staying behind in the failing institution showed creditors of the same class that are transferred to the ongoing concerned bridge bank, which was of systemic relevance.

The BRRD is intended to treat creditors of the same class in an equitable manner. The discreation right of a resolution authority is to partially exclude certain liabilities from writing down (Schelo, 2015, 86) the bail-in toll to those liabilities that would cause destruction in value and higher losses of other creditors; further, the exclusion is necessary to avoid giving strength to widespread contagion in the cases when exclusion enables continuity of critical functions and core business lines and the ability of the institution under resolution to continues basic services and transactions.

The resolution authority must be able to exclude partial/total liabilities where there is a necessity to avoid widespread contagion and systemic financial instability. This concern is the driver for total loss absorbing capital (TLAC), gone concern loss absorbing capital (GLAC), and minimum required equity liabilities (MREL). It is also possible to offer more equity to creditors with a deeper haircut and vice versa. Global systemically important banks are required to meet a minimum total loss-absorbing capacity (TLAC) requirement (more in BIS, 2016). Investments in the capital or other TLAC liabilities of banking, financial, and insurance entities are typically outside the scope of regulatory consolidation.

TLAC and MREL pursue the same objective of ensuring that union institutions have sufficient loss-absorbing and recapitalisation capacity.[9] The commission proposed that the harmonized minimum level of the TLAC standard systemic important institutions and the eligibility criteria for liabilities

[9] For clarification of the buffers framework, see also BIS (2019).

used to comply with that standard, which should be introduced in union law through amendments to Regulation (EU) No 575/2013 of the European Parliament and of the council, while the institution-specific add-on for institution-specific requirement for nonsystemic important institutions are to be addressed through targeted amendments to Directive 2014/59/EU and to Regulation (EU) No 806/2014 of the European Parliament and of the council. Directive 2013/36/EU of the European Parliament and of the council concerns the ranking of unsecured debt instruments in insolvency hierarchy (see EUR-Lex, 2017).

Covered deposits [defined in Art. 2 (1), point 5 of Directive 2014/49/EU] are protected by a statutory deposit guarantee scheme up to the coverage ratio of 100.000 EUR, and the covered deposits are excluded from the bail-in tool. Part of eligible deposits from natural persons and micro-, small-, and medium-sized enterprises that exceed the coverage ratio and those not made through branches, located outside the union of institutions established within the union, have the higher-priority ranking provided for the claims of ordinary unsecured creditors. In principle, these deposits are not of the quality of covered deposits. Their subjection to a bail-in is restricted due to the “no creditor worse-off” principle. The hypothetical quota in an insolvency process will be higher if these deposits are granted priority in insolvency. These deposits might get the sum of 100% in an insolvency procedure.

Problems arise from the incompatibility of the laws governing cross-border bank insolvencies, when incorporating burden-sharing arrangements between countries (Avgouleas et al., 2013). National authorities are free to put into place supplementary measures that they deem necessary to achieve effective deposit insurance in their jurisdictions. The principle is not designed to cover all the needs and circumstances of every deposit insurance system (see BIS, 2010). In order to enhance the resolvability of institutions, the EU directive (EUR-Lex, 2017) requires member states to create a new class of nonpreferred senior debt that should rank in insolvency above own funds instruments and subordinated liabilities that do not qualify as own funds instruments but below other senior liabilities.

Failure or Likely to Fail

The key components of an effective regulatory regime include Basel-type rules (see BIS, 2016, 2010) robust to off-balance sheet arbitrage, and little forbearance in monitoring and supervision by regulatory agencies, with a focus on systemic risk control, automatic and quick intervention as well as resolution mechanisms. While all components are necessary, none is sufficient; further, without strong international coordination, none will be effective (see Petitjean, 2013).[10]

Regulators should use restrictions on equity payouts and mandate equity issuance to help banks and to assure that they maintain adequate and high equity capitalization (Admati et al., 2010).[11] The proposal to allow for a moratorium on payouts would not solve the problem; it might, however, have disastrous side effects. Time might be gained if the valuation process was initiated sooner, with appropriate safeguards against indiscretions that might themselves trigger a run (see Gstädtner, 2014; Hellwig, 2018). Moratorium is not a suitable decision in the bottom of a depression because usually there are not enough funds for keeping bad banking claims (NPLs) in balance. Instead of keeping them in the balance of the bank, it is better to write them off and use a bail-in tool. The problem of scarce funding is derived from the fact that investors tend to leave their financial position (see Schelo, 2008).

Randell (2015) explains why the principle “too big to fail” could expose the questions of why a special insolvency law for banks should be introduced, along with the reasons for and instruments of bank insolvency proceedings, i.e., the competent authority has the power to undertake a systematic review of certain other activities, e.g., market-making conditions, investment in/sponsoring of securitization, and trading of certain derivatives.

If an institution is likely to incur losses, the competent authority justifies the withdrawal of the authorization in the sense of the regulatory requirement of holding the banking licence (about the liquidation of the banks in EU, see Merler, 2018; on critical functions, see World Bank, 2017). If the assets are less than its liabilities, we talk about over-indebtedness or balance-sheet insolvency. The important question is whether the assets of institution are valuated with “going concern” value or with a “liquidation” value. The liquidation value is measured upon the

[10] Further clarification by the Commission may be needed on how the various criteria will be applied during the ongoing transition to a banking union, perhaps through new communication completing the state aid framework for banks in view of the adoption of the resolution rules (see Micossi et al., 2014). For the content of prudential norms, institutional setup, and its envisaged reforms, we propose a qualification of these norms and an assessment of their interaction with other types of norms, e.g., corporate, auditing and accounting, consumer protection, competition rules, see Dragomir (2010).

[11] In contrast with commonly used capital regulation, leverage regulation has stronger effects on risk taking and calls for higher interest rates. Combining interest rate policy with state-contingent macroprudential regulations—either capital or leverage regulation and a tax on profits—achieves efficiency (see Simona et al., 2018).

assumption that all the assets would be sold. The determination of “liquidation” versus “going concern” value depends on the feasibility of “going concern.” Because regulatory capital requirements operate on risk-weighted assets and estimation of over-indebtedness takes into account all liabilities and assets of the institution, over-indebtedness serves as a trigger point according to BRRD (see Randell, 2015; BRRD, 2014; Hellwig, 2018).[12]

The “bail-in” is always accompanied with a business reorganization plan implemented to make the institution viable. “Write-off” can be used as an ancillary tool prior to the actual resolution tool. Converting regulatory equity (core equity composed of common equity Tier 1; additional Tier 1 and Tier 2) into equity means converting Additional Tier 1 and Tier 2 instruments into statutory equity. This is legally possible because those instruments are debt positions. The “write-down” and conversion tool can make the institution ready for a step-in by an investor. Bearing losses means writing down or diluting equity to allow for new equity, cancel debt, or convert info equity (seee Schelo, 2015, 134–144). Write-down begins with the common equity Tier 1. It is possible only to reduce debt by reducing equity. A write-down of debt must always go along with a partial conversion of debt into equity. These two instruments are linked together.

A bail-in tool should be applied only if there is a reasonable solution that the application of that tool, together with the measures of business reorganisation plan, will restore the institution in order to achieve financial soundness and long-run viability (Article 43 of BRRD, 2014). Secured liabilities and covered bonds are “bail-in safe” insofar the value of the security covers its liability.[13] Above the value of the pool covering of bonds and above the value of the securities, the bail-in is possible (more in Merler, 2018; Huertas, 2011). It is possible that senior ranking liabilities to another bank are excluded because of the fact that this institution also would then fail in a potential cascade effect (according to the Article 44 of BRRD, 2014) and outstanding losses could not be absorbed by the bailed-in creditors.

If shareholders and other creditors have contributed to loss absorption and recapitalisation at the amount of not less than 20% of the risk-weighted assets, financing arrangement can be applied (see BRRD, 2014). The approach depends on the structure of the risk-weighted assets (the financing can be drawn from ex ante contributions made to national resolution funds).[14] All unsecured, nonpreferred liabilities (other than eligible deposits) must have been fully written down or converted into equity (ZRPPB, 2017).

The maximum and minimum thresholds must be taken into account before the financing arrangements can be triggered in order to reduce the external funds needed: i) shareholders and other creditors are subject to “bail-in,” which must contribute to loss absorption and recapitalisation, in the sense of being converted or written down in the amount of 8% of the total liabilities including own funds. If the contribution is not enough for a sufficient restore of viability of the failing institution, and once the 8% threshold has been met, financing arrangements may be included in the resolution. The resolution funds might only contribute with an amount not higher than 5% of the total liabilities (the 5% quota is measured at the time of resolution planning).[15]

A regulator sets risk-sensitive capital requirements in order to maximize a social welfare function that incorporates the social cost of bank failure (see Merler, 2018). The result provides a rationale for the cyclical adjustment of risk-sensitive capital requirements (see Repullo & Saurina, 2012). MREL/TLAC are assessed on a case-by-case basis.

In order to minimize the amount of “bail-in-able” liabilities and reduce the exposure of investors, the minimum requirements for own funds and eligible liabilities

[12] Assets that can be liquidated only within a longer period of time cannot be accounted for setting liabilities that are immediately due. We have to mention the concept of impending illiquidity [refer to Article 32 (4) of BRRD, 2014], where a bank is likely to become unable to pay its debts when they fall due. To cover liquidity gaps, the central banks may provide emergency liquidity lines usually if the availability of bankable securities is sufficient.

[13] Liabilities that are not subject to bail-in according to the Article 44 of the Directive BRRD (2014) are deposits up to 100,000 eur, secured liabilities and covered bonds, liabilities held by the institution as a truestee, liabilities to other banks and investment firms with original maturity, liabilities to system operators with remaining maturity of less than seven days, liabilities to employee, liabilities related to client money and client assets, liabilities to trade creditors if they relate to activities that are essential for daily functioning of the business, tax and social security liabilities and liabilities to deposit guarantee schemes. These items may be transferred in the case of bridge bank scenario and not undergo an insolvency procedure.

[14] The contributions have two components, fixed rate and variable rate (mirroring risk exposure, strategy and size of the institution). National Funds are responsible for collecting *ex ante* (regular) and *ex post* (extraordinary) contributions from the banking sector. Total target is going to be fulfilled by 2024 in the amount of 1% of all covered deposits. Contributions are raised by national funds and transferred to the single resolution fund (SRF). Ex post contribution are limited to an amount of three times the annual contribution. And ex ante contributions can be drawn by national financial arrangements (see BRRD, 2014; Schelo, 2015, 149-152).

[15] For systemic stability effect and external funds see, Micossi (2014).

(MREL) was introduced. The liabilities with the remaining maturity of at least one year can only be counted for MREL.[16] There are conditions for including eligible liabilities in the MREL quota (see SRB, 2016; Merler, 2018): i) with the remaining maturity of least than one year; ii) the liability that does not arrive from derivative; iii) the liability that does not arise from a deposit, which benefits from the preference in the national insolvency hierarchy; iv) the instrument that is fully paid up; v) the liability that is not guaranteed by the institution itself; vi) the purchase of the instrument that was not funded by the institution (see Schello, 2015; BIS, 2016).[17]

Total loss absorption capacity (TLAC), which should be subordinated to senior debt is supposed to play a similar role as MREL, i.e., to oblige institutions to create buffers for "bail-in."[18] This purpose could be reached contractually or by setting the holding structure (BIS, 2016; Huertas, 2011). The conditions for contractual "bail-in" instruments have to be fulfilled: i) binding subordinated agreement, which could not be repaid until other eligible liabilities outstanding have been settled; ii) the instrument must be written down or converted on the contractual basis to the needed extent required before other eligible liabilities are written down or converted by decision of resolution authority (see Repullo & Saurina, 2012).

Resolution authority has the power to transfer to a bridge bank: i) shares and other instruments of ownership issued by institutions under resolution; ii) any assets or liabilities of one or more institutions under resolution. The shares of the institution failing or likely to fail consist of little value to a bridge bank. The losses are bearable by shareholders first and followed by the further ranking of regulatory capital down to subordinated and senior liabilities. The actual business is transferred, while the toxic assets and certain amount of liabilities are excluded. The amount of liabilities left behind usually corresponds to the amount needed for a "bail-in" (see Micossi et al., 2014). The institution left behind will undergo liquidation process usually through bankruptcy (see Merler, 2018). The new entity is usually interesting for a new start and potential investors. The creditors and shareholders, which stay behind in the failing institution, should not receive less than they would have receive in the case of ordinary insolvency of the institution, which complies with the "no creditor worse-off" principle (see McGuire, 2012; Műller, 2015).

Regarding the transfer to the bad bank, we have to reveal that bad bank is not established in the late phase of recession because it's too late to ensure higher transfer prices for bad banking assets over the liquidiation price (see Tanzer et al., 2012). Further, the principle of the state aid rules demand that transfer price is higher than liquidation price. In this way, the bank receives more and the difference between transfer price and liquidation price is the state aid (see Festić, 2012).[19] The aims at providing a "middle way" between liquidation and "bail-out," which achieves the continuity of essential banking functions, is essential by recapitalizing the entity or by capitalizing on a newly established entity or bridge institution to which its functions have been transferred while not relying on public solvency support and not creating an expectation that such support will be available (see Müller, 2015).[20]

The idea of sale of a business tool is that an old institution is reshaped by partial transfer for making it attractive to investors. It is possible to transfer certain assets and liabilities of systemic relevance and in the public interest to be transferred to an investor (see Merler, 2017; Micossi, 2014). There are specific requirements regarding on the sale of business tools: i) distinction to a bridge bank is that the acquirer is an external investor; ii) the acquirer entity may need to get permission by the competent authority to take over the bank business; iii) the purchase price may be paid in shares in fewer circumstances in distinction to the bridge bank tool.

An asset separation tool is used always in conjunction with other tools (see Morris & Hoenig, 2011; Petitjean, 2013). The intention is to sell the assets that have suffered losses in value in order to minimize the losses (any value lower than book value triggers a loss). Large institutions might have a certain portfolio of nonperforming loans (NPLs), and their value is steadily decreasing, but these loans might have some recovery potential (there are options in resolution scenarios for management to sell or to "write-off"). Toxic assets continue to exist, either in the bailed-in institution or bridge bank or institution under insolvency.[21]

[16] MREL is expressed as a percentage based on the sum of own funds plus total liabilities divided by the sum of the total liabilities plus own funds (see BIS, 2016).

[17] Developing a common methodology for MREL represents a considerable challenge given the wide diversity of banking groups. Informative MREL targets were defined at consolidated level only (SRB, 2016).

[18] See BIS, 2016; Schelo, 2015.

[19] The condition for approving the state aid from August 1, 2013, in to include bail-in toll (see EC, 2013, 2013/C, 216/01; see Festić, 2012).

[20] The BRRD (2014) requires that: i) any security attached to a transferred liability is transferred together; ii) netting rights may not be changed when liabilities are tied to netting agreement; iii) there is a protection for structured finance arrangements; iv) certain trading clearing and settlement systems shall be protected (see Schelo, 2015, 143–148).

[21] Potentially, equity cushions have to be increased in order to enable a bank's ongoing operations (COM/2014/043).

Some conditions have to be fulfilled for the asset separation tool (Schelo, 2015, 151-153): i) the liquidation of toxic assets under normal insolvency proceedings might have an adverse effect on more financial markets; ii) a transfer is necessary to ensure the proper functioning of the institution under resolution; iii) a transfer is necessary in order to maximize liquidation proceeds; iv) it is possible to obtain an attractive price for these assets in the market if haircuts are applied.

To benefit from a capital markets union, insolvency frameworks would also need to remove sources of cost unpredictability in cross-border insolvency procedures, which are often hidden in national insolvency laws. The diffusion of best practices in credit recovery procedures could help to improve the management of nonperforming loans (NPLs) by fostering liquidity in secondary markets (see Valiante, 2016).

According to McGuire (2012, p. 3–12) resolution mechanisms can be defined differently depending on the jurisdiction and legal framework in place: i) when an institution is liquidated, its license is withdrawn, and its assets are sold over time to pay its liabilities to depositors or other creditors[22]; ii) depending on the legal framework in place, bank owners can be removed from bank ownership, or their rights can be temporarily constrained in order to improve its financial health or prepare it for a sale or merger with another institution; iii) a resolution tool that allows purchase and assumption for the transfer of a troubled bank's operations to another, healthy bank, the assumption of the troubled bank's deposits and good assets, and the takeover of the bank's problem assets by the resolution authority; iv) a bridge bank as a form of a purchase and assumption, where the government forms a bank into which all or parts of a failing bank can be transferred, with the goal of effecting a sale to a private party at some future date; v) nationalization, which occurs when the government assumes ownership of an institution.[23]

The difference between what banks would and would not be allowed to do is based on the principle that beyond their core services; they should not conduct activities that create intransparency. The benefits of prohibiting banks from conducting high-risk activities outside of their core business, however, would be limited if those activities continue to threaten stability by migrating to the "shadow" banking system. The associated incentive to take greater risks have grown substantially over the past 30 years because the activities the safety net support have expanded beyond the core banking activities considered necessary to protect (see Morris & Hoenig, 2011).

Challenges for the Future

As we have seen, the BRRD regulates the different stages and elements of a problem bank's recovery and resolution process, including advanced planning and resructuring. It rests upon the following key elements: i) recovery and resolution planning, including the removal of obstacles to resolvability; ii) an enhanced set of early intervention measures to foster forward looking supervision and crisis prevention; iii) a harmonized set of resolution tools and powers to manage bank failure, aiming to ensure that losses are absorbed by shareholders and creditors, while allowing the continuity of critical functions.

As we have mentioned, an effective resolution regime should (in general, see, Financial Stability Board, 2011; World Bank, 2017): (i) ensure continuity of systemically important financial services, along with payment, clearing, and settlement functions; (ii) protect, where applicable and in coordination with the relevant insurance schemes and arrangements such depositors, insurance policyholders and investors as are covered by such schemes and arrangements; (iii) allocate losses to shareholders, unsecured and uninsured creditors in a manner that respects the hierarchy of claims; (iv) not rely on public solvency support and not create an expectation that such support will be available; (v) avoid unnecessary destruction of value and therefore seek to minimize the overall costs of resolution in home and host jurisdictions; (vi) provide transparency and predictability as possible through legal and procedural clarity of orderly resolution; (vii) provide a mandate in law for cooperation, coordination domestically and with relevant foreign-resolution authorities before and during a resolution; (viii) ensure that nonviable firms can exit the market in an orderly way; and (ix) be credible and thereby enhance market discipline and provide incentives for market-based solutions.

For a banking union to function effectively, the framework should be harmonized to provide the same level of certainty in liquidation, as expected in resolution. We examine the recent liquidation of two Italian banks to show how resolution and liquidation differ substantially when it comes

[22] In countries with deposit insurance schemes, the deposit insurer may pay depositor claims up to an agreed amount, and those payments may be substituted for those claims in the recovery process.

[23] In the case of assisted merge, the government must carefully monitor the bank operations and properly design the transaction to ensure the acquirer is managing the acquired operations effectively and that the incentives of the acquirer in dealing with the assets acquired are aligned with the government's interests in making an investment in the merged institution (see McGuire, 2012; Petitjean, 2013).

to the scope of legislation applicable to the use of public funds. More clarity would be needed as to the role that the concepts of critical functions and public interest play to grant liquidation aid in the two-tier system, in which resolution is done at the EU level but insolvency remains at the national level (see Merler, 2017; Merler, 2018).

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Mednarodno okolje: režimi reševanja in okrevanja bank kot tretji steber bančne unije

Izvleček

Namen članka je predstaviti možne oblike reševanja bank v evro sistemu in izpostaviti odprta vprašanja glede dodatnih kapitalskih blažilnikov ter vrednotenja aktive po Direktivi okrevanja in reševanja bank (BRRD). Orodje za reševanje bank s sredstvi upnikov je orodje za odpis ali pretvorbo podrejenih obveznosti z namenom ponovne vzpostavitve kapitalske ustreznosti. Pri vrednotenju aktive se določi znesek absorpcije izgub za ponovno vzpostavitev sposobnosti preživetja institucije in kapitalske ustreznosti. Orodje premostitvene banke ponuja pristojnemu organu za reševanje večje pristojnosti za prestrukturiranje. Prodaja aktive je dejansko oblika orodja premostitvene banke, ki omogoča organu za reševanje, da prenese sredstva in obveznosti investitorjem. Orodje za ločevanje sredstev se uporablja vedno v kombinacija z drugim orodjem. Instrument za odpis ni orodje za reševanje in vpliva na lastniški kapital, medtem ko se orodje konverzije nanaša na sredstva upnikov in obsega podrejene in hibridne instrumente. V nacionalni zakonodaji je mogoče vzpostaviti dodatna orodja za reševanje, če so ta orodja združljiva z načeli direktive reševanja bank in nacionalne zakonodaje pri podpiranju čezmejnega reševanja skupine. Izpostavlja se vprašanje prereguliranosti bank in sposobnosti izpolnjevanja teh zahtev brez negativnih učinkov na gospodarstvo.

Ključne besede: režimi okrevanja in reševanja bank, premostitvena banka, prodaja aktive, razdelitev aktive, konverzija podrejenih instrumentov v kapital, regulacija.

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