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Graduate School of Management

Master in Corporate Finance

**INTELLECTUAL CAPITAL OF BOARD OF DIRECTORS
AS A DETERMINANT OF COMPANY PERFORMANCE**

Master's Thesis by the 2nd Year Student
Concentration – Master in Corporate Finance
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ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ

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АННОТАЦИЯ

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Описание цели, задач и основных результатов	<p>Интеллектуальный капитал совета директоров складывается из большого числа различных характеристик членов совета директоров. Так, наличие директорских позиций в других компаниях принято считать элементом социального капитала. Присутствие занятых директоров в советах директоров компаний может приносить как положительные, так и отрицательные эффекты. Целью данного исследования является ответ на вопрос, есть ли взаимосвязь между занятостью совета директоров и финансовой результативностью российских компаний, а также между занятостью совета директоров и уровнем агентских издержек. Для достижения данной цели необходимо проанализировать понятие занятости, осуществить анализ исследований взаимосвязи занятости директоров и результативности компаний на других рынках, провести эконометрический анализ взаимосвязи на выборке из российских компаний, сделать выводы и предложить управленческие рекомендации. Эконометрическое исследование в рамках работы осуществлено на выборке из 219 российских публичных компаний и покрывает период 2015-2016 гг. Согласно полученным результатам, обнаружена отрицательная взаимосвязь между занятостью директоров и рентабельностью активов, нелинейная взаимосвязь между занятостью и коэффициентом М/В, а также положительная взаимосвязь между занятостью и уровнем агентских издержек в компаниях. Полученные результаты могут быть полезны для акционеров, потенциальных инвесторов, менеджеров и органов регулирования.</p>
Ключевые слова	Корпоративное управление, совет директоров, интеллектуальный капитал, занятость директоров, множественность позиций, агентские издержки, финансовая результативность

ABSTRACT

Master Student's Name	Elmira Gardashova
Master Thesis Title	Intellectual Capital of Board of Directors as a Determinant of Company Performance
Educational Program	Master in Corporate Finance
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Academic Advisor's Name	Irina V. Berezinets, Candidate of Science (Physics and Mathematics), Associate Professor
Description of the goal, tasks and main results	Intellectual capital of the board of directors implies big number of different directors' characteristics. Holding multiple directorships is considered to be one of the characteristics of social capital. Having busy directors on the board can have both positive and negative impact on company performance. The goal of this research paper is to answer the question if there is relationship between board busyness and financial performance of the companies, and also between board busyness and level of agency costs. In order to reach the goal, the following tasks were set: analyze the concept of busyness, review existing studies on the relationship between busyness and company performance, conduct empirical research of the relationship on the sample of Russian companies, make conclusions and provide managerial implications. Econometric study is conducted on the sample consisting of 219 Russian public companies and covering 2015-2016 period. According to the obtained results, there is negative relationship between board busyness and return on assets, non-linear relationship between board busyness and M/B ratio, and positive relationship between board busyness and level of the agency costs. Obtained results can be useful for shareholders, potential investors, managers and regulatory authorities.
Keywords	Corporate governance, board of directors, intellectual capital, director busyness, multiple directorships, agency costs, financial performance

TABLE OF CONTENTS

Introduction	6
1. Intellectual capital of board of directors	8
1.1. Board of directors as one of the main internal corporate governance mechanisms	8
1.2. Intellectual capital of board of directors and its components	14
1.3. Social capital of board of directors and its measurement	18
2. Company performance: agency costs and financial indicators	24
2.1. Agency costs: definition and measurement	24
2.2. Financial indicators: market-based and accounting-based approaches	28
2.3. Relationship between intellectual capital of board of directors and firm performance	34
3. Empirical study of the relationship between intellectual capital of the board of directors and company performance	40
3.1. Methodology and sampling	40
3.2. Econometric analysis	49
3.3. Analysis of the results and conclusions	54
3.4. Managerial implications	55
Conclusion	57
References	60
Appendices	70

INTRODUCTION

Starting from 2002 there appeared studies that were claiming that value of the companies is generated not only by tangible assets that are in the company, but also there is something else that generates value (Fuller, 2012). One of the possible sources is considered to be intellectual capital, and when intellectual capital is mentioned, it is attributed not only to the employees, but also to the stakeholders who might participate in the life of the company but not be necessarily involved as an employee.

When identifying possible sources of the intellectual capital, scholars refer to board of directors which is considered to be one of the most important internal mechanisms of corporate governance. Because of the importance of the board of directors and of its roles and functions, it is believed that board of directors' composition and intellectual capital have an impact on company performance (Markarian, Parbonetti, 2007). Speaking about intellectual capital of board of directors, one can consider knowledge, experience, connections and network board members hold as constituents of their intellectual capital. Board busyness can be described as one of the characteristics that is describing intellectual capital (social capital), and average number of additional positions held by directors can be used as a measure to describe busyness.

Busyness concept has different angles: on the one hand, it can be beneficial, on the other hand, it can bring harm. Positive aspects of the concept are concluded in reputation hypothesis, according to which busy directors obtain good reputation which implies that they are valuable assets for the company (Fama, Jensen, 1983), in quality hypothesis, according to which busy directors obtain great experience and broad knowledge in different aspects (Fama, 1980) and in resource dependence theory, according to which companies need the access to the resources to be prosperous (Pfeffer, 1972), and busy directors can provide with this access through their connections and network. However, on the other hand there is busyness hypothesis which simply states that busy directors do not have enough time to properly perform their duties in all the companies they are serving for (Ferris et al., 2003).

Existing studies find evidence for both positive (Sarkar, Sarkar, 2009) and negative (Fich, Shivdasani, 2006) relationship between the busyness and company performance; some studies find evidence that there is no relationship (Arioglu, Kaya, 2015). After studying these cases, getting acquainted with different concepts connected to the board busyness, and noticing that there are almost no studies on the related topic in the Russian market, the following research question raise: is it beneficial for companies to have busy boards, in other words, is there relationship between board busyness and company performance for Russian companies?

The goal of this master thesis is to answer this question, and in order to reach the goal the following objectives are set:

- to analyze the concept of intellectual capital of board of directors;
- to examine the busyness concept as one of the components of social capital;
- to review previous studies devoted to the relationship between board busyness and company performance;
- to conduct empirical research on the relationship of board busyness and financial performance, and board busyness and level of agency costs in Russian public companies;
- to analyze the results obtained and provide managerial implications.

The thesis is organized in the following way: first chapter is devoted to description of the board of directors, its roles, functions and intellectual capital. Second chapter is more concentrated on the company performance and views it from two perspectives: as financial performance and through the level of agency costs. It is especially relevant to use agency costs to describe company performance in this case because of big role of board of directors in managing agency costs. Third chapter contains the empirical study and analysis of the obtained results with their possible managerial implications.

The empirical study examines if there is relationship between board busyness and firm financial performance (measured with the use of both accounting-based and market-based performance indicators) and also between board busyness and the level of agency costs. Study is conducted on the sample consisting of 219 Russian public companies and covering 2015-2016 period. Moreover, speaking about the board busyness, in the study it is examined both busyness of outside and inside directors, and their relation to company performance.

Obtained results suggest that there is negative relationship between board busyness and financial operating performance, non-linear relationship between busyness and market performance, and positive relationship between board busyness and the level of agency costs. These results allow to come up with recommendations for different groups of stakeholders, such as shareholders, investors, managers and regulatory authorities.

1. INTELLECTUAL CAPITAL OF BOARD OF DIRECTORS

First chapter is devoted to boards of directors that can be considered as one of the main internal corporate governance mechanisms. Intellectual capital of the board of directors will be discussed along with the examples of the studies that probe that boards of directors have an impact on the company performance.

1.1. Board of directors as one of the main internal corporate governance mechanisms

The concept of the corporate governance is not easy to define: there is no one single definition accepted by everyone and which covers all the aspects corporate governance includes. For example, the UK Cadbury Report (1992) states that corporate governance is “the system by which companies are directed and controlled”. Other reports or academic sources provide with broad definition of the corporate governance focusing on interrelationship between internal groups and individuals like the board of directors, managers, shareholders in general meeting and employees (Bagaric, Hargovan, Du Plessis, 2010). With the time evolving, the definition is also developing, and if to choose one specific definition, corporate governance can be explained as “the process of controlling management and of balancing the interests of all internal stakeholders and other parties who can be affected by the corporation’s conduct in order to ensure responsible behavior by corporations and to achieve the maximum level of efficiency and profitability for a corporation” (ibid.).

As is mentioned above, corporate governance involves different stakeholders within the company and interactions between them. Three main players are usually considered to be management, shareholders and board of directors, and they form what is called “corporate governance triangle” (Ewmi, 2005). Three types of relationships in this triangle are dependent on mutual responsibilities and on the flows of information between them; in the end, it can be stated that not own responsibilities are crucial, but interactions between these three anchors are key to effective governance. For example, investors provide companies with the capital, while in return management is responsible for running the company well and delivering accurate financial reports and figures.

Good corporate governance policies are supposed to be not only fancy words on paper, there is important role attributed to them; they play the role in accomplishing economic goals connected to investor confidence, allocation and formation of the capital. The idea is that there is connection between the corporate governance quality and the cost of corporations’ access to the capital for growth; besides, the quality affects the confidence of the providers of this capital (The OECD Principles of Corporate Governance, 2004).

Many companies deciding on having board of directors themselves or establishing it because of specific law requirements, attribute different functions to it; however, at the same time, it is possible to encounter different opinions about what the board of directors is supposed to do. According to classic works on agency theory (Jensen, Meckling, 1976; Fama, Jensen, 1983), the functions of the board of directors include monitoring top-management and rewarding it. As board of directors is playing in a sense the “bridge” role between shareholders and top-management, monitoring top-management is necessary to ensure that actions of the executives correspond to the shareholders’ interests. In other words, board of directors and its actions are focused on the agency costs and are supposed to reduce them. Stewardship theory, being an addition, another angle of view at agency theory, or an alternative to it, focuses on the strategic importance of board of directors and its strategic function (Davis et al., 1997). Furthermore, some authors concentrate on resource dependence theory, according to which board of directors are seen as boundary spanners (Pfeffer, 1972; Pfeffer, Salancik, 1978).

According to Zahra, Pearce (1989), there are at least four different perspectives on the roles of the board of directors: legalistic, resource dependence, class hegemony and agency theory. Each of these perspectives has different view on what directors should do and which characteristics of the board influence company performance. Consequently, different perspectives suggest different criteria based on which it is possible to assess board of directors’ contribution to the company performance. The first one, legalistic perspective focuses on legally prescribed directors’ duties; corporate law allows directors to fulfill their roles. Following this approach, main board’s role implies representing and also protecting shareholders’ interests without participating and interfering in everyday activities (Molz, 1988).

The company is a so-called amalgam of both tangible and intangible assets plus capabilities, and as strategic resources can be classified those that are non-substitutable, rare, valuable and inimitable (Black, Boal, 1994). Within this approach to the resources, board of directors can be perceived as a strategic resource (Chambers et al., 2013). Resource dependence perspective was already mentioned above with the specific function of the board; however, to add more here it is important to mention that in addition to the role of boundary spanners, boards also responsible for enhancing organizational legitimacy and extracting crucial for the companies’ resources. To perform these roles, boards are expected to keep an eye on the environment securing valuable resources and also acting on behalf of the company in the community (Zald, 1967).

Class hegemony perspective derives from Marxist Sociology and states that board’s role implies perpetuation of the power and control of the elite, which results in such functions as directors recruitment and decrease of the transaction costs (Ratcliff, 1980). Moreover, board is

seen as a distinct partly autonomous network with power, being deeply set in the society and community (Stiles, Taylor, 2001). However, this perspective has at least three limitations: there is no profound description of specific ways how the board of directors can contribute to the company performance, overgeneralizations in terms of post hoc analyses takes place, and class hegemony perspective does not take into account the fact that the patterns of corporate ownership are changing (Zahra, Pearce, 1989).

Finally, fourth perspective derives from the agency theory which also was already mentioned. From this perspective, agency relationships are the ones that should be analyzed and carefully studied in the corporate governance. Within this framework, the role of the board of directors is concentrated on protection of the rights of “principals” (shareholders) through monitoring the actions of “agents” (executive directors) (Kosnik, 1987). To be more precise, there can be the situation when executives do not comply with established procedures or set goals, and this results in agency costs; members of the board of directors can contribute to the company performance through ensuring that directors are focused on shareholders’ objectives and performance, also through control of the directors and strategic decision making (Mizruchi, 1983).

As is shown, there are different theories and perspectives that describe the role of the board of directors and specific functions associated with these roles. What can be concluded for sure is that board of directors is playing crucial role and when someone is speaking about the company performance, contribution from the boards should be taken into account. Besides, it is possible to specify three functions of the board of directors that appear in majority of the works though can be formulated in different words:

- 1) strategic decision making;
- 2) recruiting, monitoring and controlling of the executives;
- 3) advising to the executives on the important decisions.

If to take a closer look at the Russian laws as this research will be focused on the boards of directors and performance of the Russian companies, there is Federal law “On Joint-Stock Companies”. The law has separate sections devoted to the shareholders, board of the directors and executive board. The law identifies list of the questions that are in the area of board of directors’ responsibility, among which are the following: identification of the priority areas for the company activities, different actions connected to the annual shareholders meeting, decisions on the company’s shareholder equity, recruitment of the executive board and decisions on early termination of their contracts, recommendations on dividends, subsidiaries and branches establishment, and some other questions (article 65, point 1). However, it is important to mention

that all these areas of responsibility should also be mentioned in the articles of association, because companies can decide to change the responsibility aspect or the “distribution” of the responsibility within the company and are to reflect this in their internal documents.

Moreover, the law contains the rules related to the composition of the board of directors, for example, the size of the board of directors should be at least 5 members, while the upper constraint is not mentioned (article 66, point 3). In case there are more than 1000 shareholders with voting shares, the board should consist of at least 7 members, if there are more than 10000 shareholders – at least 9 members. Another constraint connected to the composition of the board of directors implies that no more than 25% of the board members can be executive directors in the same company (article 66, point 2), and there are no more other constraints devoted to the board of directors’ composition.

At the same time, the Bank of Russia has published Corporate governance code which is not considered as law but contains so called recommendations for the companies to ensure high quality of the corporate governance practices. Within the description of main corporate governance principle attributed to the board of directors, it is again emphasized the importance of the board within fulfilling the role of strategic decisions maker and other roles mentioned above and related to the executive board. Among the principles, there are several points regarding the composition of the board of directors. For example, even though the law does not mention any necessity for the independent directors, in the Code of corporate governance it is stated that the board of directors should have “sufficient amount” of independent directors. In the subsection to this principle authors mention that it is recommended to have at least one third of the board as independent directors. Within the research, the Code of corporate governance and recommendations from it will be mentioned not once, but so far it can be seen that much attention is paid to the composition of the board of directors and to its role and functions within the company.

Board of directors, being such an important mechanism of the corporate governance, is expected to contribute to the company performance, which can also be logically concluded from its functions described above. Saying that, it means that for the better understanding of the ways for company performance improvement, one can have a look at the board of directors, the way it is composed, and the characteristics of the members included into it.

In general, there can be two types of the studies of the relationship between board composition and firm performance. The first one is aimed at providing the insights into the behavior of the board within accomplishing different tasks (e.g., CEO recruitment, making a takeover bid or defending against it depending on the situation); second approach is looking into

the correlation between overall firm performance and board composition (Bhagat, Black, 1999). Second approach suggests analyses of such characteristics as board size, percentage of outside directors, percentage of independent directors, percentage of busy directors, gender diversity and so on in connection to the company performance measured in different ways. Even though some studies are concentrated on the behavior of the boards and others are concentrated on their composition in connection to the demographics, Pfeffer (1983) states that behavior and processes within the board should not necessarily be studied separately because of the fact that beliefs and behavior usually result from members' demographic characteristics.

According to Rindova (1999), examination of the board composition implies three important ideas: there is simultaneous performance of different tasks by the board at the same time, tasks performance is connected to the company characteristics and the environment it is operating in, directors are playing their roles through provision of the knowledge, experience, skills and connections they have. Board members and their capabilities differ from each other because of the variability of previous professional experience, because of business exposure and specific skills. Obviously, the diversity and variety of the skills and experiences turns into a 'mosaic of decision making structures and subsequent firm behavior' (Markarian, Parbonetti, 2007).

Because of the importance of the board of directors, there has been done big research on its composition and characteristics; however, it is difficult to find consensus between the researchers on what is the best configuration for an effective board of directors (Johnson, Daily, Ellstrand, 1996). Interest to the relationship between board characteristics and company performance is reflected not only in academia, but also regulatory circles and capital markets (Markarian, Parbonetti, 2007); and there are different findings that indicate contradictory, weak or even none relationship between the board of directors' characteristics and company performance. Structure of the corporate board and its influence on the company's results is considered to be one of the most debated issues in the field of corporate finance. As a result, it is not possible to choose specific board composition as the best or optimal one (Boone et al., 2007).

There is big amount of the works examining the relationship between board size and company performance, because on the one hand small boards can be more coherent, on the other hand, big boards can have broader view on the problems and combine variety of knowledge and experience of its members (Cheng, 2008; Mak, Kusnadi, 2005; Guest, 2009).

Another characteristic of the board that is in the spotlight for many years among the researchers in corporate governance is the fraction of outside directors. Usually as inside directors are considered those that serve as firm officers, outside directors can be defined as 'all non-

management members of the board' (Johnson et al., 1996). Inside directors can be the source of information specific for the company, but private benefits can influence their objectives and lead to harmful for the company performance (Raheja, 2005); whereas outside directors are supposed to monitor independently but can be less informed about the company and environment it is operating in (Linck et al., 2005). Moreover, according to the agency theory, the greater the proportion of outside directors is, the better firm performance should be due to the presumed independence of outsiders (Shleifer, Vishny, 1997). At the same time, different investigations have shown that the relationship between outside directors and company performance is not always proved to be significant, though opposite results have also been received with an accent on the fact that outside directors can positively contribute to the advisory role through specific knowledge or experience (Coles et al., 2014; Faleye et al., 2011).

Another group of directors on board refers to the independent directors. Since 1990s there has been a trend of pushing increased representation of independent directors in the boards by the governance reformers (Meng et al., 2017); however, as in the previous case, the practical benefits of appointing independent directors are still questionable (Bhagat, Black, 2001). In a sense, role of the independent directors is similar to the role of outside directors, the difference is mostly in the level of independence, with the assumption that independent directors have higher level of independence and are able to be unbiased while making decisions and monitoring the management team.

Currently more and more attention is attributed to the gender diversity within the board of directors in addition to different ages and ethnicity. In the beginning of the 21 century it was already an international trend for having more women on board (Holton, 2000). Right now, there are appearing specific quotas on women representations in the board (e. g. quota laws in Spain, France, Germany and other countries). The reasoning for having women on board implies women's opportunity to serve as role models, carry symbolic value in the way that high performing women can be promoted to higher positions and reflect changes in the women's issues of recruitment (Billimoria, Wheeler, 2000). In addition, having women on board can help to build links to the environment and bring strategic input (Fondas, 2000). Mixed results on the relationship between women on board and company performance initiates further research especially taking into consideration increasing boardroom diversity in the companies (Post, Byron, 2015).

All in all, board of directors and its characteristics are definitely in the focus of the modern research that aims at understanding which characteristics or which composition can be the key to successful company performance. Board traits mentioned above do not represent finished list of the characteristics that are crucial for overall board performance, and further in this research we

will concentrate on other aspects as well. So far we can conclude that board of directors' importance leads to the necessity of examining composition of this corporate governance mechanism, studying different characteristics in connection to the company performance and making conclusions and recommendations based on the results of such studies.

1.2. Intellectual capital of board of directors and its components

No one can argue that today's economy is based on knowledge, and intellectual capital is playing a significant role in the process of value creation within the organizations (Muttakin, Khan, Belal, 2015). Intellectual capital concept transforms into new base and driver for the economic progress, as influence of the fixed or financial assets in comparison to intangible assets is currently decreasing (Gogan et al., 2016). Market value of the companies is more and more exceeding the book value of the tangible assets, making it clear that there is something else inside the companies that contributes to the value. In the management literature one can find that intellectual capital concept is used in order to understand how knowledge is acting as crucial value-creating asset (Kianto, Saenz, Aramburu, 2017).

Some authors argue that success of the companies is highly dependent on their ability to "notice" and use their intellectual capital in order to create organizational advantage (Nahapiet, Ghosal, 2000). Saying that, previous research has proved that there is relationship between the intellectual capital and company performance (Kamukama, Ahiauzu, Ntayi, 2010).

Keenan and Aggestam (2001) can be considered as one of the first authors who identified relationship between intellectual capital and corporate governance; according to them, decisionmakers are supposed not only to use and get advantage from financial and physical capital, but also utilize intellectual capital in the company to the fullest. While intellectual capital reflects knowledge and knowing capability of social collectivity, such as professional practice, intellectual community or organization (Nahapiet, Ghosal, 2000), corporate governance uses 'financial, physical-plant, and intellectual capital to create and leverage value' (Keenan, Aggestam, 2001). However, the research on the link between the intellectual capital and corporate governance within its different forms is limited (Muttakin et al., 2015). According to Berezinets, Garanina, Iliina (2017), people and knowledge they have, specific know-how, capabilities for innovation, relationships with stakeholders, corporate culture are becoming now the most important resources for development of the companies; besides, it is crucial not only to have these resources, but also to be able to manage them efficiently.

Within such a fast-changing environment everything is dependent on structural capital, relational capital and human capital – aspects that are often included in the notion of intellectual

capital (Kamukama et al., 2010; F-Jardon, Martos, 2009). At the same time, when one mentions intellectual capital within the company, it does not necessarily mean that intellectual capital can be generated only by the employees or internal stakeholders; suppliers, strategic allies, external partners and others can also become the sources of intellectual capital for the company. As was mentioned above, board of directors is playing crucial role in companies, and it is possible to assume that members' characteristics are adding value to the company and can also become source of competitive advantage (Berezinets, Garanina, Ilina, 2017).

According to Sveiby (1997), intellectual capital can be viewed in three ways: internal structure, external structure, and also employee competence. Later, these three categories were "transformed" into organizational capital, customer capital and human capital (Edvinsson, Malone, 1997); however, term customer capital was also later turned into relational capital (Pablos, 2003). As is mentioned in the book by Roos et al. (2007), organizational capital stands for everything that is left inside the company when employees have left the company but this is not reflected in the balance sheet of the company; human capital implies all the characteristics that describe the individuals as resources for the company but cannot be replaced by robots or stated on the paper, and social capital implies all the relationships company has with clients, customers, intermediaries, suppliers, partners, shareholders and creditors.

If to give a definition for intellectual capital of the board of directors, it is possible to refer to Nicholson, Kiel (2004), according to whom intellectual capital of the board is formulated as the following: 'the intellectual resources such as knowledge, information, experience, relationships, routines, and procedures that a board can employ to create value'. These described characteristics can be classified within the notion of intellectual capital given before, and it is proven by the scholars that these attributes are contributing to firm value creation (Donaldson, Davis, 1994; Westphal, 1999). Besides, even if the intellectual capital notion can seem too broad from the first sight, this broadness is attractive for the reason that it results in multidimensional perspective for the ways the board of directors is influencing firm performance (Nicholson, Kiel, 2004).

Board of directors is usually considered to be the source that generates human and social capital; human capital of the board of directors includes skills and knowledge of the members of boards of directors, whereas social capital reflects networks directors are involved in, their relationships with each other as well as with other stakeholders (Berezinets, Garanina, Ilina, 2016).

Members of the boards provide companies with human capital, for example, they are the source of the knowledge they obtained thanks to their education (Certo, 2003). Furthermore, not only the knowledge from the universities is important, directors bring to the companies their

previous work experience, from which they can get valuable information about the customers and suppliers, about the industries in general (Pfeffer, Salancik, 1978; Carpenter, Westphal, 2001). Also, it is important to mention that directors have different knowledge and expertise also due to international experience, different functional backgrounds; sometimes it is crucial to have not only the knowledge about the industry company is operating in but also about other industries. According to Abeysekera (2007), human capital can also be divided in seven subcategories: training and development, entrepreneurial skills, equity issues, employee safety, employee relations, employee welfare and employee-related measurements. Further we will provide more detailed explanation how these characteristics of the directors can be beneficial for the companies.

Human capital can also be divided into two groups: general human capital and specific human capital (Becker, 1975); general human capital means skills and abilities that can be useful in general in different situations, whereas specific human capital refers to knowledge and experience more specific to the particular company. However, we are not going to divide human capital into these two groups and consider both types of human capital together. Boards of directors have to perform different tasks to fulfill their role and help the company to achieve better results in the future, and many authors discuss board composition while reflecting its human capital needs (Conger, Lawler, Finegold, 2001; Charan, 1998).

As was already mentioned different characteristics of the board members can be beneficial for the companies on boards of which they are serving. To start with, Carpenter and Westphal (2001) in one of their studies concluded that if a director has experience in companies similar to the one he is serving for now in terms of corporate strategy and environments, he will have positive impact on the results of this similar company. If the company is operating in stable conditions, experience from similar companies facilitates quality improvement of the decision-making process and results in better performance; if the economic conditions are unstable, still knowledge and experience is useful because it helps to perform monitoring functions in a more effective way and be able to find ways out in not typical situations.

International experience is useful due to the ability or skill it creates to make more balanced and more effective decisions in the international perspective, and there is direct relationship between international experience of board members and the revenue abroad of the company they are serving for (Carpenter, Pollock, Leary, 2003). Another aspect of valuable experience is connected to the experience in mergers and acquisitions. If directors have this experience, it leads to better results for the company in case it decides to go through these processes as well; experience and specific knowledge again results in higher quality of the decisions made (Kroll, Walters, Wright, 2008).

As an addition to mergers and acquisitions experience, there can be other narrow areas or situations that create specific yet very valuable experience; accumulated knowledge or expertise can be of great use later once board members face difficult situations where they have to deal with important strategic questions (McDonald et al., 2008). Experience in raising capital or work in venture companies provides directors with expertise in the field of attracting more investments, and it is even shown that companies where boards have directors with such expertise on average tend to get lower interest rates for borrowing compared to the rates obtained by the companies without directors with such expertise (Boeker, Wiltbank, 2005).

Moreover, this experience in narrow specializations creates more diversity on the board which is associated with more innovation within the company. Board members coming from different industries with different knowledge and experience can have much broader view on the problems and have much bigger pool of the ideas on how to tackle these problems. There are studies that show that diversity of the knowledge, opinions and views in the end provides with better solutions to the problems and deeper understanding of the problems; board members interact, discuss their ideas and then come up with innovative and high-quality solutions all together (Van der Vegt, Janssen, 2003).

Another characteristic that describes human capital of the board members can be tenure in this company, and it can be used as a proxy parameter for human capital. View on the relationship between tenure and quality of the decisions can be ambiguous: the more director is serving for the company, the more knowledge he obtains about specifics of this company, the more informed and aware he becomes (Golden, Zajac, 2001); at the same time, if the director is working for the same company for too long, at a point he or she can become blind and not able to notice new opportunities or raising issues in the external environment, quality of monitoring from this director also becomes questionable (Hillman et al., 2008). Because of the problem that after certain point of time directors stop being as unbiased as they probably were in the beginning of their work for the company, some corporate governance codes suggest constraint for the number of years when, for example, independent directors are still considered to be independent. According to the Russian Corporate Governance Code, if independent director spends in the board of directors more than seven years, he or she stops being considered as independent director.

Gender diversity is also considered to be part of human capital of the board of directors and there are studies that show that women on board can bring positive effect to the performance of the company. More specifically, women tend to pay more attention to environmental issues and corporate social responsibility, they actively participate in the work of committees and are able to

improve the quality of the decisions (Adams, Ferreira, 2009; Nielsen, Huse, 2010; Bilimoria, 2000).

PricewaterhouseCoopers (PwC) usually conducts the surveys about corporate governance in Russia among the members of boards of directors of big Russian companies. According to one of the surveys, human capital in form of experience, knowledge and skills is considered to be one of the main factors influencing performance of the companies (PwC, 2012). Moreover, work experience in similar sector is named as the most crucial constituent of human capital. Because of the unstable economic conditions and changing environment, knowledge of risk-management and international experience are valued a lot as well and can be source of competitive advantage.

Social capital as was already mentioned before is defined as relationships between the board members and external stakeholders (Devos et al., 2009; Hillman et al., 2011). Organization for Economic Cooperation and Development defines social capital as the following: ‘networks together with shared norms, values and understandings that facilitate cooperation within or among groups’ (Cote, Healy, 2001). Social capital can also be viewed as parallel to and complementary with other intangible capitalizations (Manning, 2010). Wincent et al. (2010) agree with these definitions in their study and mention that network of the directors and assets they can get from these networking opportunities are important part of the social capital. Even though academics have similar definitions for social capital, it is more difficult to choose indicators and measures of social capital of boards of directors members (Berezinets, Garanina, Ilina, 2016). In the next part of this chapter social capital measures will be discussed.

1.3. Social capital of board of directors and its measurement

If to think in general why social capital in terms of the networks and connections can be useful, at least three explanations can be provided (Lin, 2017). Firstly, networks promote flow of information. In many theories among the main assumptions it is possible to meet the assumption about perfect information; however, it is almost never the case for the real situations. Social ties and connections with important people on important positions can diminish lack of information and show the choices or opportunities which would be unknown without the information from others. The ties can show new interesting markets or any other strategic opportunities that can result in huge shift in the development of the company. Secondly, network and connections let not only get the information not available before, but also can allow to influence those who are making decisions in external environment; in other words, social capital provides with an ability to influence and change something, which obviously can be beneficial for the companies. Thirdly, social connections in a sense prove credibility of the directors, they show that there is someone

else “behind” the director who can facilitate again access to the resources and bring much value to the company.

In general, social capital can be viewed not only as connection to the external environment, but also as the ties inside the company and inside the board of directors. Some studies suggest that social capital in the form of ties within the board is more important and results in more influence on the board compared to human capital of the directors (for example, committee membership or management experience) or so called external social capital (ties outside the company and the board) (Stevenson, Radin, 2009); however, within this study we are concentrating on the connections outside the company.

Social capital can also be considered as multidimensional concept. There are three dimensions identified by Nahapiet and Ghosal (1998): structural, relational and cognitive dimensions. Structural social capital describes real links or bonds between individuals and answers the question if actors actually know each other. Relational social capital reflects the nature of these links: for example, whether individuals trust each other or not. Cognitive social capital is ‘the level of shared mental schema of the two linked actors’ (Nicholson, Alexander, Kiel, 2004). Such approach is consistent with the view that not only links are important, but also nature of these links (Burt, 1992; Scott, 2011).

Adler and Kwon (2002) in one of their works stated that people use their networks in order to create direct and indirect links to other people and organizations. Such connections or links can be important for the company performance because they do facilitate exchange (Nahapiet, Ghosal, 2000), and through this exchange people are able to accumulate and leverage goodwill in order to get information, solidarity and influence (Adler, Kwon, 2002). As social capital is mostly attributed to the network and relationships, multiple directorships can be considered as parameter that describes social capital of the board of directors (Devos et al., 2009). At the same time, it is still important to realize that through the multiple directorships board members are developing human capital as well (Kor, Sundaramurthy, 2009). The line between social capital and human capital is not strictly defined and is more relative, because all the components are connected to each other, and, for example, through multiple directorships board members get more knowledge and experience which are usually attributed to human capital.

Board member can be characterized as a director with multiple directorships in case he or she is serving on the board of directors of several companies (Benson et al., 2014). According to Cashman, Gillan, Jun (2012), term ‘busy director’ can be used only for describing independent directors, but this opinion is not shared by all academics. At the same time, inevitably the following

question arises: how many directorships should a director hold to be considered as a busy director? Majority of the scholars chooses three positions as a threshold (Fich, Shivdasani, 2006; Cashman, Gillan, Jun, 2012); however, we believe that this can differ depending on the context the study is conducted in. Environments in which companies are operating are different, corporate governance practices also differ depending on the country, so this leads to an assumption that definition of the ‘busy director’ term can also differ and be specified by the researchers in particular case.

Busy directors can be considered as main source of the social capital due to their access to different companies, people and resources. Big companies on average tend to hire busy directors more compared to small firms (Booth, Deli, 1996); through busy directors companies get access to wide network that can help to establish contacts with such parties as customers and suppliers. Similar results were shown in the research by Ferris et al. (2003), according to which big and profitable companies have more busy directors on board. Moreover, this ‘connection’ works in the opposite direction as well: directors that hold positions in big and well performing companies have higher chances to be invited to serve on the board of other companies.

Companies that are planning IPO are also interested in having busy directors on board (Field, Lowry, Mkrtchyan, 2013). Authors studied American companies in the period of 1996-2008 and concluded that even though busy directors might be not good at performing monitoring role, they are still bringing values to the companies. Values are derived from experience busy directors have, from their connections and knowledge, which in the end transform busy directors into ideal consultants who are necessary for companies at this stage of development. Besides, authors state that busy directors can be more valuable for young companies, when monitoring function does not require that much efforts compared to the advisory function or role; as a result, busy directors due to the characteristics they have can be better advisors. Eventually, with companies getting older and bigger, monitoring function becomes more and more important and at this point having too many busy directors on board can stop being an advantage and can start bringing negative effects.

If to look at the situation from other perspective and discuss not motives of the companies to hire busy directors, but motives of the directors themselves to serve on multiple boards, first it is possible to consider reputational factor. Directors who are invited to the boards of many companies are earning good reputation, because the attention from the companies means that there is something valuable that this particular director can bring to the company (Fama, Jensen, 1983). In other words, this reputational effect works the following way: multiple directorships give signal to the market that director is performing his duties on a high level if many companies are willing to see him or her as part of their board of directors. Serving on the boards of several companies is

translating the message that director has competences in consulting and is also supposed to perform monitoring function well. In order to be a good consultant, it is necessary to have various experience and knowledge in different aspects and fields, which will result in better for the company decision. Knowledge, experience, connections and access to different resources allow busy directors to show better performance (Kor, Sundaramurthy, 2009).

Serving simultaneously on the boards of several companies gives busy directors opportunity to compare the activities of different companies, compare the approaches and decisions made in different situations and within different external conditions, and also get an advice from their colleagues in other companies. Membership on multiple boards gives a director an overview of wide set of problems and possible solutions (Beckman, Haunschild, 2002). Directors are able to use the network for keeping updated the companies they are serving for with the procedures and practices from other companies (Haunschild, 1993). Eventually, busy directors obtain great human capital in addition to social capital, and the companies they are working for are able to benefit from this. Such state of affairs corresponds to the resource dependence theory developed by Pfeffer and Salancik (1978), according to which companies and their performance are dependent on external environment. Busy directors are able to attract necessary resources to the company in an easier and faster way, and also increase the value of the company (Pfeffer, 1972; Booth, Deli, 1996). Another aspect in which busy directors can bring value to the companies is through supplying with managerial talent (Rosenstein et al., 1993).

On the other hand, along with all these advantages busy directors can bring to the company, there are definitely some costs associated with busyness. One can start wondering if busy directors have enough time for performing their duties in an appropriate way or will one company suffer because busy director will be literally too busy and will not have enough time for serving well on the boards of all the companies. As holding a director position is considered to be respected job with many benefits (Useem, 1982), directors can be eager to accept invitations to serve on several boards not spending enough time on analyzing if they can really do that. In order to be efficient, directors need to study company's specific strategic and any other kinds of problems (Carter, Lorsch, 2004), but if director is overbusy, he will not get an opportunity to do this. Moreover, busy directors might have to miss the board meetings or come unprepared for them (Finkelstein, Mooney, 2003), and then the contribution to the company performance of such directors becomes questionable. If directors are not able to sufficiently immerse into company's activities, the level of their contribution is negatively affected (Baysinger, Hoskisson, 1990). In fact, in the case of overbusyness, company's competitiveness and growth generation abilities can be hurt because of the lack of proper governance and advising by the directors (Kor, Sundaramurthy, 2009).

Basically, all the positive and negative aspects of multiple directorships can be formulated through several hypotheses that are known in the literature. Reputation hypothesis describes all the positive outcomes related to good reputation of the busy directors. It goes hand in hand with signaling theory as well, letting the market or external stakeholders see that board of directors consists of people with good reputation and, consequently, with strong knowledge, rich experience and variety of skills.

Quality hypothesis is the one that implies the high quality of actions or decisions made by busy directors. This hypothesis can also be viewed from two angles: on the one hand, directors are invited to the boards because they are 'famous' for the quality of their work, for the decisions they make and solutions they find. On the other hand, once director becomes busy, this opens for him or her access to many resources and results in higher quality of his or her work. Third positive consequence of busyness comes from the resource dependence theory which was already mentioned, and which is devoted to the access to the resources busy directors are believed to have.

Negative aspect of the multiple directorships is usually formulated as busyness hypothesis, concern of which lies in the fact that there are time constraints for many activities, and if a person starts serving on big amount of boards, there is high probability that he or she will not be able to perform well or at least on the same level for all the boards of directors he or she serves on.

Moving further with the description of multiple directorships concept, it is reasonable to provide some information on how busyness of the board of directors can be measured. Traditionally, first measure that can be used is share of the busy directors in the board. The metric itself is very simple, however there is again the question about whom to consider as a busy director. Classic definition suggests three directorships as a threshold (Fich, Shivdasani, 2006; Cashman, Gillan, Jun, 2012), however one can also refer to the average number of the positions or to the median value of the outside positions directors hold (Sarkar, Sarkar, 2009). Moreover, average or maximum number of the positions held by directors is also reflecting the situation with the busyness and can be used as a metric for busyness measurement. Besides, to describe the whole board some authors are using binomial variable which is equal 1 if 50% and more of the directors are busy, and 0 otherwise (Fich, Shivdasani, 2006). 50% threshold can also be questionable and authors can try to use different thresholds in order to see if this somehow influencing results of the research. As was mentioned, sometimes threshold for three positions does not reflect the situation correctly; and we can switch perception of board busyness from stating particular number of positions to stating that the board can be considered as busy once the relationship between performance is negative.

As was shown in this chapter, boards of directors play an important role in the companies and board members, their characteristics can be crucial for the company. Intellectual capital of the board of directors can be a source of competitive advantage for the company, and it is usually divided into two groups: human capital and social capital. Multiple directorships, which describe social capital, is a concept used towards board members that hold simultaneously directorships in more than one company. Because of the reason that multiple directorships and busy directors on boards can bring value on the one hand, and be harmful on the other, inevitably the following question appears: is it bad or good to have busy directors on board? Is there relationship between busy boards and company performance? Should the government or companies themselves introduce any constraints in regards to the number of positions for the directors or maybe constraints for the number or share of the busy directors on board? In the next chapters these questions will be answered.

2. COMPANY PERFORMANCE: AGENCY COSTS AND FINANCIAL INDICATORS

Before answering the questions stated above, it is important to understand what company performance is and how it can be measured. Two angles of the company performance will be viewed: we will consider agency costs as possible reflection for particularly role of the board of directors and financial firm performance expressed with the use of different financial indicators.

2.1. Agency costs: definition and measurement

Before starting investigation of the agency costs, it is reasonable to see what agency relationship is and why agency costs occur. One of the classic works on this topic by Jensen, Meckling (1976) state that agency relationship is a 'contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent'. In any situation that involves one party acting on behalf of another it is possible to assume that interests of both parties can not always be fully aligned. Because of this, the principal can come up with the tools that will help to make sure that agent's actions are not harmful for the principal. For example, the principal can create incentives for the agent to act in the way which is good for the principal or incur monitoring costs that will be connected to limitation of agent's aberrant actions. As is shown, once there is relationship between principal and agent, it is impossible to have no costs along with fully aligned actions of these two parties: the principal will have to have some costs to guarantee that agent is actually acting in principal's interest.

Companies can be placed on the line from zero agency costs case towards their increase in the size. Small businesses depict the case when there are low agency costs because separation of the ownership and control is not on the high level. At the same time, while the gap between owners and managers becomes bigger, agency costs also grow; companies where managers hold 100% of equity represent the extreme with zero costs, whereas at the other extreme there are companies where managers do not have single percent of the equity (Ang, Cole, Lin, 2000).

There are a lot of studies that show that both financial and investment decisions, and, consequently, value of companies are influenced by the presence of agency conflicts and occurring agency costs (Florackis, 2008). At the same time, there are works that show that agency conflicts and costs can be reduced through different corporate governance mechanisms, and these mechanisms, both external and internal, can also help to increase firm value (ibid.).

Agents can shirk their responsibilities as a result of moral hazard or adverse selection. Because of the moral hazard, agents expropriate the company's value if they are not monitored; adverse selection is connected to the case when principals themselves are not capable of evaluating

the job of agents because of the lack of expertise (Eisenhardt, 1989). Contract can be a solution to these problems. It is necessary to make it outcome-based and make sure that the interests of the principals and agents are aligned. To make the interests aligned becomes easier when the agent-manager holds some shares and represents also the owners, in this case moral hazard and adverse selection are minimized, whereas quality of the work of agent is maximized (Varela, 2017). As a proof, according to Argawal, Mandelker (1987), the greater the share of stock held by executives, the more managerial preferences aligned with the interests of stockholders.

Agents have to perform their work in the uncertain and not fully predictable environment; besides, principals are not able to observe all the efforts and actions of the agents. Thus, there is necessity of special mechanisms that allow to monitor and report agents' performance, and these mechanisms can be costly (Namazi, Rezaei, 2016). As there is a problem of information asymmetry, information disclosure can help to decrease the level of conflicts and costs; according to Ross (1979) and within the framework of signaling theory, firms without problems tend to disclose more information than distressed companies.

Agency costs consist of three groups: monitoring costs by the principal, bonding costs by the agent and residual loss (Jensen, Meckling, 1976). One of the main factors that cause agency costs is information asymmetry which appears because of the separation of ownership from control. Managers (agents) are better informed about the situation inside the company and its activities, whereas owners (principals) do not always have access to this information or can receive this information in modified form. Another reason for agency costs appearance comes from impossibility to sign complete contract which would describe all possible scenarios and all possible ways of interaction (Fama, Jensen, 1983).

Monitoring costs are probably type of the agency costs that is the most connected to the activities of board of directors. As was mentioned in the first chapter, one of the roles of the board of directors is monitoring of the actions of management. Besides, through the boards of directors shareholders are able to monitor the executives within the companies (Fama, Jensen, 1983). Another form of the monitoring costs can be viewed as costs for auditing. There are studies that prove that if there is no monitoring from the shareholders' side, probability that managers will manipulate the figures, participate in financial frauds or make the decisions not contributing to the value creation or destroying this value is higher (Biddle, Hillary, 2006; Hope, Thomas, 2008).

Bonding costs are also the costs that occur in order to guarantee that agents are acting in the interests of the principals, these are in a sense implicit costs occurring because of noncomplete contracts. Principals have to create such conditions when agents will have no reason to act not in

the interests of the principals. Finally, apart from the monitoring and bonding costs, residual loss implies losses in the firm value caused by the presence of the agency relationship between principal and agent: when there is difference between the decisions made and so called optimal decisions for the company that could maximize the value. Residual losses also take place because intention to fully enforce contracts between the shareholders and managers with monitoring and bonding can eventually outweigh the positive effects from this (Hijazi, Conover, 2011).

Another classification that can be discussed when studying agency costs includes two groups: direct and indirect agency costs (Libman, 2005). Direct agency costs include monitoring and bonding costs. For example, costs occurred because of the shareholders meeting or due to the existence of the board of directors are considered as direct costs; direct bonding costs can be costs for the auditing, risk insurance and so on. On the other hand, indirect agency costs reflect earnings that were lost because of imperfection of control of the agents and incomplete contracts. Residual losses (opportunity costs) can be considered as indirect agency costs which take place because of the opportunistic behavior of the agents and conflict of interests of the organization.

Reasonable question that arises next is connected to the issue of agency costs measurement. One of the approaches suggests choosing the company with zero agency costs and using it as a base for comparison with other companies (Ang, Cole, Lin, 2000). Zero agency costs can occur only in the company where the owner is also the manager at the same time, in this case there is no conflict between the principal and the agent, because the owner does not hire any agent for management functions (Jensen, Meckling, 1976). In order to find such a company, researchers can look among not public small companies where separation of the ownership and control has not happened yet (Ang, Cole, Lin, 2000). Such companies can be considered as base case and then be compared to the companies where agency costs take place. If to calculate the agency costs based on this method, it will be possible to recognize excessive costs. This approach uses absolute metric; however, the approach itself is difficult to be applied. As we just mentioned, researchers have to find not public company with the owner-manager, but even if such a company is found, it is very complicated to obtain enough information about it and conduct a profound research. Because of this problem many scholars are using relative metrics (Garanina, Kaikova, 2016).

The approach with the relative metrics suggests using proxy-variables that can describe level of the agency costs in the companies. One can find different proxies with reasonable explanations why this or that metric can reflect the level of the agency costs in the companies.

In the study by Ang, Cole and Lin (2000) authors use two metrics for agency costs: asset turnover and expense ratio. Asset turnover (ATO) is calculated as sales divided by the total assets (equation 1) and reflects how well the assets are used in the company (Chiang, Ko, 2009).

$$ATO = \frac{Sales}{Total\ Assets} \quad (1)$$

This metric is one of the most popular proxies for agency costs, and it shows the losses caused by not effective usage of the assets, bad investment decisions or managers' poor job. As the metric shows how well the assets are used, the higher the ratio is, the lower the agency costs are. According to McKnight, Weir (2009), asset turnover ratio shows efficiency of the company and of the decisions made by management. Following this logic, if the asset turnover is low, there are high agency costs in the company.

Talking about the expense ratio, one can find different expenses taken into account. One of the possible approaches is to calculate share of operating expenses in the revenues; another approach is to calculate share of selling, general and administrative expenses in the revenues (equation 2), and this ratio can be expressed as SGA.

$$SGA = \frac{Selling, general, administrative\ expenses}{Sales} \quad (2)$$

Share of selling, general and administrative expenses in the revenues is considered as the measure of direct agency costs of equity (Florackis, Ozkan, 2009). Selling, general and administrative costs usually include utilities, rent, lease payments, supplies, so that it reflects expenses on such facilities as furnishings, buildings, automobiles and similar. It can be expected that management can manipulate these expenses and use selling and advertising expenses in order to 'camouflage expenditures on perquisites' (Hijazi, Conover, 2011).

Operating expense ratio (share of operating expenses in the total revenues (equation 3)) shows how management is controlling operating costs.

$$Operating\ exp.\ ratio = \frac{Operating\ expenses}{Sales} \quad (3)$$

As is explained by Ang, Cole and Lin (2000), if to compare operating expense ratio of the company where agency costs occur with the ratio of the company without agency costs (base case) and multiple the ratio of the no-agency-costs company by the amount of assets of the first company, it is possible to see the amount of direct agency costs. Moreover, if there are any excessive expenditures on perks or something else nonessential, this should be shown in the operating expenses.

Another approach to agency costs measurement is calculation of coefficient in the following way: free cash flow is multiplied by a growth dummy which equals 1 in case if company's Tobin's Q is less than 1. Logic behind this metric is that in case company which is managed poorly has higher amount of free cash flows, then this company has greater agency costs (Jurkus, Park, Woodard, 2011). Agency costs are high when high level of the free cash flows is connected to poor growth opportunities (Jensen, 1986). Dividend payout ratio can be considered as one more proxy for the agency costs and is calculated as amount of the dividends declared on the common stock divided by net income of the company (Jurkus, Park, Woodard, 2011). This ratio can show the ability of the company to generate incomes in the future; dividends can also be viewed as the instrument which decreases free cash flow and diminishes the opportunity for the managers to invest too much.

Not typical measure for the agency costs can be considered as number of the acquired firms (Mcknight, Weir, 2009). Acquisitions can be used for increasing welfare of the managers and not of the shareholders; it is the way for managers to spend money without distributing cashflows to the shareholders. Utami and Inanga (2011) are using set of the variables to describe agency costs, among which are income, size, growth rate, and free cash flow; whereas leverage and dividends are used for describing financial policy in regard to agency problems.

As there are many studies that show that company performance is significantly associated with the agency costs (Bruton, Keels, Scifres, 2002; Wu, Tu, 2007), we can conclude that agency costs can be viewed as characteristic of company performance, and in the case if the agency costs are very high, we can conclude that company is not performing well, while low agency costs can indicate good company performance. In a sense, company performance reflects the level of quality of company's activities; thus, it describes company's health. Saying that, not only the shareholders and managers are concerned about the company performance, but also other stakeholders show their interest in this topic.

2.2. Financial indicators: market-based and accounting-based approaches

For any company questions about its performance and results are always among the most important ones. Evaluation and analysis of the performance are fundamental for management of the company, no matter if this is a state-owned company or private one, big or small, from FMCG or oil and gas sector. Performance management related questions are discussed in both theoretical and applied researches on management (Thorpe, Holloway, 2008).

Performance measurement should be conducted according to the nature of the activities that are analyzed; ones should use appropriate conceptual models which allow to concretize

description of the studied aspects (strategic, financial or operational) of the companies (Verweire, Berghe, 2004). At the same time, while evaluating the performance, it is also important to align evaluation metrics and tools to the nature of the one who is evaluating (top-management, shareholders, employees, consumers, suppliers and so on) (Kennerly, Neely, 2002).

There are a lot of books and articles devoted to the notions of performance, effectiveness and efficiency, and this inevitably leads to the fact that there appear more and more definitions for this notion and approaches to its measurement. It is possible to identify at least six approaches to performance measurement (Prakash, 1971), among which one can find approach based on the balance sheet, tax-based approach, incomes and expenditures-based approach, approach describing development and stability of the company, approach that measures performance in terms of productivity, and finally approach based on costs. While some researchers identify six groups of different performance measures, there is widely accepted classification according to which performance indicators are divided into two groups: accounting-based performance indicators and market-based performance indicators.

Initially accounting-based indicators were more widespread; this type of indicators is calculated using the information from accounting reports: balance sheet, income statement, cash flow statement. Return on assets (ROA), return on equity (ROE), return on sales (ROE) and return on investments (ROI) can be considered as the most used once within this group.

Return on assets (ROA) is usually calculated as operating income divided by the total assets (equation 4).

$$ROA = \frac{\textit{Operating income}}{\textit{Total assets}} \quad (4)$$

The ratio gives the understanding of effectiveness of assets usage, if the assets in the company are used efficiently and generate income. This measure is the most widespread, and in order to prove this it can be stated that at least one formula for ROA calculation is provided in all finance textbooks, ROA is almost always used in the researches for bankruptcy prediction, and ROA is very often used for measurement of company performance and its future perspectives (Jewell, Mankin, 2011).

At the same time, it is needed to mention that there are lots of approaches of ROA calculation, at least 11 approaches can be found in the business literature (Mankin, Jewell, 2014), and main difference is in the numerator: one can use net income, earnings before interest and tax, operating income or any other types of income. Such a variety of calculations means that researchers should analyze first why and what they are going to use the indicator for. If, for

example, ROA is calculated in order to evaluate operating performance of the company, it is more reasonable to use operating income in the numerator. Bhagat and Black (2001) in their study of the relationship between board independence and company performance mention that there is no ideal performance indicator, but ROA is applicable and help to make conclusions about the performance.

Another metric from the group of accounting-based performance indicators is return on equity which is calculated as net income divided by shareholders' equity (equation 5).

$$ROE = \frac{\text{Net income}}{\text{Shareholders' Equity}} \quad (5)$$

Managers can use this indicator to show how well they are exploiting the capital provided by the shareholders. Many investors believe that this is one of the best performance metrics because it shows how effectively managers are using money of the shareholders. Besides, ROE can be depicted as multiplication of three other metrics: return on sales, assets turnover and financial leverage. This gives an opportunity for the managers to see the drivers for generating higher return on equity and shows which figures probably the company should focus on. Some consultants compare the spread between ROE and cost of the capital in order to see which companies are performing better. If the spread is positive, companies have growth opportunities (Reimann, 1989). ROE is also used in the studies devoted to relationship between the board size and company performance (Zhou, 2000).

Return on investments can be used for evaluating the ability of the company to earn required returns, quality of the work of management and for forecasting future cashflows. This metric is used more seldom and is often compared to ROE, because essentially the idea behind them is similar. If ROI is higher than the cost of capital, one can conclude that company is doing well; moreover, ROI can be used more often for evaluation of the particular projects to see what is the return for required investments into it. For example, ROI is often used in marketing to evaluate efficiency of promotion campaign, though there are still studies where authors use ROI to link it with the corporate governance practices and to see if there is relationship (Gugler, Mueller, Yurtoglu, 2004). Choice of the numerator can be different same as in the case with ROA, and again it should depend on the situation and objectives of using this performance indicator. Sometimes usage of ROI can have constraints and lead to the conflicts between the departments, and for this reason another approach to ROI calculation was introduced.

There are also other accounting-based performance indicators that can be easily calculated once financial reports are available; however, all these indicators have specific limitations and disadvantages. To start with, obviously financial reports and figures in them can be manipulated

by the managers themselves. If managers know that they will be judged based on the value of accounting-based indicator, they get an incentive to manipulate the numbers and get the value appropriate for them. Moreover, accounting-based indicators usually do not take into account further development of the company and future cashflows, they reflect more short-term perspective; that is why it is not reasonable to make decisions only based on this type of indicators. If only these indicators are used, companies can lose growth opportunities and positive long-term results; these indicators do not reflect systematic risk and do not take into account effects from R&D investments and advertising (Benson, 1985).

Because of the limitations for accounting-based indicators, researchers are also considering market-based metrics. Among the most used market-based indicators there are Tobin's Q, market value added, market-to-book value and economic value added. Calculation of these metrics supposes not only usage of the numbers from companies' reports, but also with the numbers received from the market (Dulewicz, Herbert, 2004).

Tobin's Q was developed in 1968 and is calculated as market value of installed capital divided by replacement asset value. This indicator is one of the most used market indicators which reflects attractiveness of the companies; however, even though there is specific approach to calculation provided by the authors, this approach is very difficult to be used. Replacement asset value is not always possible to calculate, or it is very time-consuming. Some researchers came up with simplified approaches to calculation of Tobin's Q. For example, Lindenberg, Ross (1981) suggest using the following equation 6:

$$Q = \frac{CS_{MV} + PS_{MV} + D_{MV}}{TA + RNP - HNP + RINV - HINV'} \quad (6)$$

where CS_{MV} is market value of common stock, PS_{MV} is market value of preferred stock, TA stands for total assets, RNP is replacement value of current assets, HNP is historic value of noncurrent assets, RINV is replacement value of inventories and HINV is historical value of inventories. According to Schaller (1990), for finding Tobin's Q it is necessary to calculate market value of the company through the market value of its equity and debt. Market value of the equity is equal to the market capitalization and can be easily found for public companies from the stock exchange information, but it is more difficult to calculate market value of the debt. To do this, it is necessary to calculate market value of the long-term debt making different assumptions about its maturity, yield, and as for market value of the short-term debt Schaller suggests to assume that it is equal to the book value of short-term debt. However, even this approach can seem to difficult, and Chung, Pruitt (1994) suggested another equation (7) of approximated Tobin's Q:

$$\text{Approximate } Q = \frac{MVE + PS + D}{TA}, \quad (7)$$

where MVE is market capitalization, PS is the value of preferred stock, D stands for the value of debt and TA is total assets. In case it is impossible to get market value of the debt and preferred stock, authors allow using book value. Suggested approach is used in many papers that investigate relationship between corporate governance and firm performance (Coles et al., 2008). Tobin's Q is considered to reflect growth opportunities of the company and intangible assets, and management's figures manipulation becomes more complicated.

Market value added (MVA) can be calculated as the difference between market value of the company and invested capital (equation 8).

$$MVA = \text{Company's market value} - \text{Invested capital} \quad (8)$$

This metric shows quality of the management strategic decisions and can signal about changes in the strategy (Lehn, Makhija, 1996). It was also found out that there is positive relationship between earnings yield and MVA meaning that MVA can be used in order to evaluate company performance.

One more market-based indicator frequently used in the studies of relationship between corporate governance and company performance is market-to-book ratio. This indicator is calculated in the following way: market value of company's equity divided by book value. Market value is price of one share multiplied by the number of outstanding shares, and book value is the amount left in the company after the liquidation of all the assets and repayment of the whole sum of debt. This metric usually shows the market perception of the company, especially if the ratio is high, this means that market evaluates the company on high level and believes that real value of the company is much higher than its book value. Low ratio shows that company's stock is not a good choice for the investment and company is not performing well.

Economic value added (EVA) cannot be classified as only market-based indicator as its calculation requires getting some information from financial reports, it can still be discussed in this group because it is also considered as market-based coordinator and calculated according to the following equation (9):

$$EVA = NOPAT - IC * WACC, \quad (9)$$

where NOPAT is net operating profit after tax, IC is invested capital and WACC is weighted average cost of capital. According to many authors, EVA allows to mitigate the disadvantages of accounting-based indicators and gives the real sense of the company performance.

EVA was developed by Stern Stewart & Co. From the first sight it can seem that the calculation of EVA is simple, however, this is not true. Stern Stewart & Co came up with around 160 adjustments to the value of invested capital and profit, which should be first applied in order to find the real value; EVA is often compared to residual income. According to Young (1997), EVA describes the performance of the company so well that it can and should replace such metrics as earnings per share, net present value and return on assets.

Stern Stewart & Co's analysis showed that growth of EVA explains 50% of MVA growth, whereas, for example, sales growth explained only 10% of MVA change, EPS growth explained 15-20% and ROE growth explained 35%. Such result indicates that EVA explains better changes in the shareholders' wealth (Stewart, 1994). Among the advantages of this metric the following can be mentioned: assets in a sense transform into liabilities and managers have to show return on them, too much attention to EPS results in low investments in intangible assets, increase of financial risk (because of the debt increase) and complications in accounting. EVA can also be used as the metric based on which remuneration can be set; there is an opinion that EVA helps to solve the principal-agent problem (Young, 1997). When managers know that their remuneration depends on EVA, they start thinking as shareholders, their wealth is now dependent on the wealth of the owners. EVA is reminding to the managers to make decisions which will lead to the returns higher than the costs. EVA can also be used for the analysis of the performance not only of the whole company, but separately of the departments as well. Unfortunately, even though this indicator has so many advantages, it is extremely difficult to calculate it because these crucial 160 adjustments are commercial secret of Stern Stewart & Co. Some authors were trying to identify these adjustments or develop their own, and Yook (1999) suggested his approach saying that with his approach to calculation numbers are similar to the ones got after calculating with the adjustments suggested by Stern Stewart & Co. These corrections are related to decrease of the assets by not interest-bearing debt, highly liquid securities, construction in process, increase of the assets by capitalized lease payments, doubtful debt reserves, LIFO reserves, capitalized R&D expenditures for last 5 years and other figures.

Above there were described different metrics that allow to evaluate company performance. Obviously, all of them have advantages and some flaws, and whenever researcher is choosing any indicators, he or she should take into account the goals of the evaluation process and the environment in which these indicators are going to be used. Besides, many authors mention that in order to come up with more reasonable results, it is necessary to use several metrics preferably from different groups. This will make conclusions more valuable and more trustworthy if hypotheses are tested using different metrics for the company performance.

2.3. Relationship between intellectual capital of board of directors and firm performance

As was described in the first chapter, intellectual capital of boards of directors includes human capital and social capital. One of the characteristics that can address both categories of intellectual capital is multiple directorships, or, in other words, number of directorships board members hold. There can be both positive and negative outcomes of having busy members on board and busy boards in general.

Though there are some studies that find positive relationship between busyness and performance of the US companies (Core et al., 1999), majority of the studies in developed markets prove the busyness hypothesis and find negative relationship between director busyness and company performance (Fich, Shivdasani, 2006; Andres et al., 2013; Cashman et al., 2012).

Cashman, Gillan, Jun (2012) conducted their study using the sample of American companies that covered 1999-2008 period, and there were three separate studies within this one: one for the companies that are included in S&P500 index, one for the companies that are not included in this index and one for all these companies together. First, when pooled regression was used, there was positive relationship between busyness and firm performance found for the sample that included all companies and sample that included small companies (for the sample with big companies relationship proved to be negative). However, after adding fixed effects to the model, for the cases with all three samples the relationship was negative. Such a result proves that it is also necessary to keep in mind the specifications of the models used and choose the appropriate model. The results of this study coincided with the results received by Fich, Shivdasani (2006) before.

Studying the relationship between busyness of the outside directors and firm performance, Fich and Shivdasani (2006) used ratio of market to book value as market performance measurement indicator. Sample in this study consisted of companies from the Forbes 500 list and covered the period of 1989-1995. Results show that boards with busy directors on average have worse performance compared to the boards without busy directors. Besides, companies where boards have busy directors have lower return on assets, return on sales and asset turnover. One more interesting result received by these authors is that when director announces that he is going to hold one more directorship, value of the company where he was initially serving goes down. Similar result was received by Bar-Hava et al. (2018) who considered the following situation: what happens if busy director decides to leave one of the boards he is serving for, how do shareholders react to such decision? As was found out, shareholders positively react to such changes. Positive reaction means that investors feel necessity in the actions and time of the directors and react

positively once he or she gets more time for fulfilling his or her duties. Moreover, according to the authors, three positions is an optimal number of the positions to have: on the one hand, directors with three positions have enough time for good performance in all the companies they are serving for, on the other hand, these three directorships indicate good reputation and valuable experience of such a director.

Investigation of the situation with German companies also showed that there is negative relationship between busyness and company performance (Andres, Bongard, Lehmann, 2013). Relationship was studied on the sample of 133 companies covering 2003-2006 period. Companies with such boards where directors are involved into social networks tend to have worse results than companies without such companies. As the performance measurement authors also use market to book value. In addition, authors mention that “quality” of the new position matters way more than the concept of busyness itself.

This results into requirements in the company governance codes about the limitations for the number of additional directorships for the board members. However, if we have a look at the results obtained in the developing markets, first, we will notice, that average number of directorships per director will be much higher, and also that there is evidence for positive relationship between busyness and company performance.

For example, for Colombian market Gutierrez, Pombo (2011) conclude that outside busy directors can be considered as key drivers for the improvement in the company performance, and a measure for company performance authors used return on assets. Authors conducted their study on the sample consisting of 335 companies and covering 1996-2006 period. As can be also noticed, in this case when authors were defining busy directors, they focused specifically on outside directors. In case of India, researchers found positive correlation between busy independent directors and firm performance (Sarkar, Sarkar, 2009); however, multiple directorships of the insiders are negatively correlated with the performance. Authors state that these results are not aligned with the results from American studies, but they assume that because of the institutional and cultural differences, for India resource dependence theory is more significant, the study included 500 large private companies. Moreover, authors understand that the threshold of three directorships for defining if a director is busy or not might not work for the Indian market and that is why test the results changing the threshold: for example, what happens if to consider the director as busy one if he holds one and more, two and more, three and more and so on directorships.

The results of the study which included 4225 companies from all over the world and covered the period 2004-2010 also showed positive relationship between director busyness and

company performance (Omer et al., 2014). However, evidence from the Brazilian market suggests also negative relationship between busyness and company performance which is more similar to the results from developed markets (Santos, Silveira, Barros, 2012). The results of the investigation show that on average firm value is negatively associated with the higher level of board interlocking especially if there is the case of busy boards or case of the companies where CEO simultaneously holds other directorships in other companies.

Some studies find no evidence of the relationship between busyness and performance. For example, in Turkey authors studied performance and boards of 290 companies and 2079 board members for the end of 2012 and performance and board of directors of 287 companies and 2066 board members for the end of 2013 and concluded that there is no relationship between busyness of the board or quality of board advising and company performance (Arioglu, Kaya, 2015). Differences between the results for different markets can be explained by cultural, historical and institutional specifics. In developing countries it can happen that network and connections matter much more than knowledge, experience and skills. Sometimes knowing the right person in the right position can help to get better position or access to the resources which would be not available if the director did not know someone.

Furthermore, some studies even claim that the differences in the results can be connected to contextual factors. For example, authors of the recent article (James, Wang, Xie, 2018) decided to see if there are differences between the busy directors' impacts on firm performance depending on the location of the headquarters. It was found out that firm location affects the effectiveness of busy directors; Metro firm busy directors usually enhance firm performance. Moreover, they are associated with lower cash effective tax rate, lower real earnings management, lower default risk and better assets utilization.

Besides, busyness can be different, some directors can have 10 positions and all in the companies of the same industries, other directors can hold 7 positions in the companies that represent companies from great variety of industries. It is reasonable to think which situation is better. On the one hand, multiple directorships within one industry brings better understanding of the industry and maybe more specific and deeper knowledge within it; on the other hand, companies from different industries can enrich knowledge and experience and provide with an access to the network of people from different businesses, which can be very beneficial afterwards. Exactly this question was studied in (Clements, Neill, Wertheim, 2015). The results of the study showed that there is a statistically significant positive relationship between the directors who are serving on the boards in the companies from related industries and effectiveness of the corporate governance. Authors also tried to see if there is any difference between the effects for small and

big companies, and it turned out that the effect of having directorships in the similar (industry-wise) companies is stronger for small companies compared to the big ones. At the same time, the authors identified statistically significant negative effect on the effectiveness of corporate governance for small companies. This study is important as I am also considering the necessity to take into account different “ways” of being busy.

Yet another question is which boards are considered to be busy? Many scholars agree that busy board is the one where 50% and more of the directors are busy (Fich, Shivdasani, 2006; Ferris et al., 2003). However, this approach can be argued and questioned, researchers may choose their own approach to board busyness measurement. Unfortunately, researchers usually combine both concepts of busy directors and busy boards, which is, in our opinion, sometimes can lead maybe to ambiguous results. What is also important to mention here is that even if there are specific results about the director busyness, they do not necessarily lead to the same conclusions for the board. For example, if there was proven positive relationship between company performance and director busyness, we still cannot claim that it would be advised to the companies to hire the directors with multiple directorships. Maybe it is more reasonable to have only 2-3 busy directors in the board and other non-busy.

As is shown, there are different results obtained for relationship between busyness and firm performance: some authors claim that relationship is negative, others claim that it is positive, while there are also results stating that there is no relationship. Because, on the one hand, busyness can really be beneficial through knowledge, access to the resources, experience and networks, and on the other hand it can be harmful due to the lack of time, we believe that relationship cannot be linear. Saying that, our first hypothesis in this study will be the following:

H1: There is non-linear relationship between board busyness and company performance.

Almost all the studies mentioned above measure company performance in terms of financial performance, and typically several indicators are used. For example, authors can use return on assets and Tobin’s Q or market-to-book ratio. Other accounting-based indicators are used as well: for instance, return on assets or return on sales. We can see, that usually when researchers are discussing idea of performance, this implies financial performance.

However, if we refer to the article by Muravyev, Berezinets and Ilina (2014), we can notice that among financial performance measures authors use SGA which is defined as sales, general, administrative expenses divided by revenues. As authors explain, this metric can also be among the performance measures and it shows managerial discretionary expenses and may serve as proxy for agency costs. Because of the idea that one of the main functions of the board of directors is

monitoring and advising to the managers, board of directors is considered as a mechanism that can help to lower agency costs in the company and through this improve company's performance. Saying that, there are different studies that try to see what the relationship between different corporate governance mechanisms (inside the board) and the level between agency costs in the company is.

One of the characteristics that is found to help to decrease the level of the agency costs is share of women on board. There is a cross-country analysis which tried to see how percentage of women on board is associated with the agency costs, three countries are studied: USA, Norway and Russia (Garanina, Kaikova, 2016). Authors found out that there is positive effect of percentage of women on board on the agency costs in American companies, negative effect on the agency costs in Norwegian companies and no effect of the women presence on board on the agency costs in Russian companies. Another board characteristic which was studied is the size of the board, and according to the results obtained, larger boards increase agency costs no matter which country is studied. Garanina and Kaikova (2016) analyze 175 Norwegian companies, 196 Russian companies and 243 American companies and covered the period of 2004-2012, and for the agency costs measurement two metrics were used: asset liquidity ratio and asset turnover ratio.

Another study that investigates the relationship between agency costs and corporate governance was conducted by Florackis (2008), where the author tries to study the relationship between agency costs and such corporate governance characteristics as managerial ownership, compensation and ownership concentration, board size, proportion of non-executive directors on board, separation of CEO and chairman roles. The sample includes UK companies and covers period of 1999-2003, and for agency costs measurement author uses proportion of SGA expenses in revenues and asset turnover metric. Obtained results suggest that capital structure characteristics of companies (bank debt and debt maturity) constitute important corporate governance mechanisms for companies in UK; managerial ownership, compensation and ownership concentration are strongly associated with agency costs, and there is difference between the impact of corporate governance mechanisms on agency costs depending on firm growth opportunities.

According to Ibrahim, Samad (2011), larger boards of directors help to mitigate agency costs; moreover, independent directors and duality are perceived differently by family and non-family owned companies. For example, independent directors in family owned companies do not influence agency costs, while non-family owned companies need independent directors. Besides, in family owned companies duality role existence helps to mitigate agency conflicts. The study was conducted on a sample of 290 Malaysian public companies and covers period of 1999-2005.

We can conclude that there are different kinds of relationship between agency costs and corporate governance mechanisms. However, we did not observe any study where relationship of busyness and agency costs is tested, though we believe that there is connection. Again, role or effects of busyness are ambiguous: on the one hand, busyness can help directors to be more professional and perform their duties better, which will result in lower agency costs; on the other hand, because of the lack of time and lack of proper monitoring from the directors' side agency costs can be high. Taking into account this ambiguity, we state the following hypothesis:

H2: There is non-linear relationship between busyness and level of agency costs.

To sum up, company performance can be viewed at least from two angles: firm financial performance and performance reflect through the level of the agency costs. As was shown above, there are different approaches and metrics used for measurement of financial performance and agency costs, and many scholars emphasize that usage of several metrics in the same study is more appropriate in order to get more reasonable results. In the next chapter it will be explained in more details which metrics are used to reflect board busyness, firm financial performance and agency costs in this particular study; two stated hypothesis will be tested in order to see if there is relationship between board busyness and company performance.

3. EMPIRICAL STUDY OF THE RELATIONSHIP BETWEEN INTELLECTUAL CAPITAL OF THE BOARD OF DIRECTORS AND COMPANY PERFORMANCE

In this chapter hypotheses stated in chapter 2 will be tested. Because the view on the board busyness is ambiguous, it is necessary to understand what the relationship between company performance and board busyness for Russian companies is. Chapter consists of four parts, in the first one methodology for testing the hypothesis will be explained and sample will be described. Next part will include econometric analysis, third part will contain analysis of the results and then chapter will be finalized with managerial implications.

3.1. Methodology and sampling

Empirical study goal of which is to see if there is relationship between board busyness and company financial performance, and also between board busyness and agency costs will be based on the following regression models (equations 10 and 11):

$$\begin{aligned} Fin_Performance_{it} \\ &= \beta_0 + \beta_1 Busyness_{it}^2 + \beta_2 Busyness_{it} + \beta_3 Board_Size_{it} + \beta_4 FIN_{it} \quad (10) \\ &+ u_{it}, i = 1, 2, \dots, N, t = 2015, 2016 \end{aligned}$$

$$\begin{aligned} Agency_Costs_{it} \\ &= \beta_0 + \beta_1 Busyness_{it}^2 + \beta_2 Busyness_{it} + \beta_3 Board_Size_{it} + \beta_4 FIN_{it} \quad (11) \\ &+ u_{it}, i = 1, 2, \dots, N, t = 2015, 2016 \end{aligned}$$

where subscript i and t reflect company and time, dependent variable *Fin_Performance* is firm financial performance and measured as ROA or market-to-book ratio. Market-to-book ratio was chosen for describing market performance of the companies following long tradition of using this indicator (Fich, Shivdasani, 2006). The fact that many studies use this indicator for measuring the market performance, we will be able to compare the results with the previous studies. Return on assets was chosen for evaluating operating performance of companies in alignment with previous researches.

For the *Agency_costs* we also chose two proxies that allow to make conclusions about the level of the agency costs in the companies. First metric is asset turnover, and in this case the higher number is, the lower agency costs are, which means that in case we use asset turnover as proxy, we expect negative relationship between this indicator and company performance. Second metric is expense ratio: share of selling, general, administrative expenses in company's sales. In this case the bigger share is, the higher agency costs are, which leads us to the expectation of positive relationship between board busyness and this proxy.

Before defining the variable *Busyness*, it is necessary to explain more the idea behind the measurement of this variable. As was mentioned, in the studies authors use different approaches to busyness measurement: someone considers busyness of outside directors, some other authors concentrate on independent directors, and then there are also authors that investigate the busyness of any director no matter if he or she is insider, outsider (Fich, Shivdasani, 2006) or independent director (Cashman, Gillan, Jun, 2012). We believe, that it makes sense to investigate busyness of two groups of the directors: inside and outside directors. The reason why we do not include separately independent directors is because they are in the group of outside directors already and, additionally, it is very difficult to conclude if the director is indeed independent, especially in the case of Russian realities. Saying that, we have separate variables for busyness of inside directors and outside directors. In order to measure busyness, we choose the variable which describes average number of outside directorships held by the board member, so that for inside directors this means summing number of positions insiders additionally have and dividing it by number of inside directors and for outsiders this means summing number of positions outside directors hold and dividing it by the number of outside directors.

Another important feature that should be mentioned here is that some Russian companies tend to appoint same people for the boards of all the companies that belong to one mother company or compose the same holding company. For example, Gazprom gazoraspreделение consists of 235 companies, and some of them are public companies traded on Moscow stock exchange. Majority of the directors in these companies hold directorships not only in one company, but in several, which makes us wonder if this kind of busyness is real or only “on paper”. Because of such specifics, we decided also to separately see average number of directorships held by insiders and outsiders in so-called “connected” companies and “not connected companies”. If companies belong to each other and are in the “mother-daughter” or “sister” relationship, we consider these companies as “connected”, in other case they are “not connected”. This division is important in order to be able to see if there is any difference in the relationship between the firm performance and nature of the multiple directorships.

Board size is another variable that is usually included in the studies of corporate governance, and as also was shown in the previous chapter, size of the board of directors is usually associated with the level of agency costs. Vector FIN_{it} includes conventional control variables that describe the company, such as firm size, age and leverage, u_{it} stands for random variable. B_1 , β_2 , β_3 are unknown coefficients and β_4 is vector of unknown coefficients.

More detailed description of the variables and the ways to calculate them is shown in the Table 1.

Variables description

Variable	Description
1	2
Dependent variables that characterize financial performance	
Market-to-book ratio	Ratio is calculated as market value of equity plus the difference between the book value of the assets and book value of the equity divided by the book value of the assets
ROA	Return on assets describes operating performance and is calculated as earnings before interest and tax divided by total assets
Dependent variables that characterize agency costs	
ATO	Asset turnover shows how well company is using assets and is calculated as sales divided by total assets
SGA	Selling, general, administrative expenses ratio shows how much company is spending on SGA and is calculated as SGA expenses divided by sales
Independent variables	
Busyness	
Av_Insider	Variable that describes average number of the additional directorships held by inside director and calculated as number of the additional positions held by inside directors divided by number of inside directors
Av_Outsider	Variable that describes average number of the additional directorships held by outside director and calculated as number of the additional positions held by outside directors divided by number of outside directors
Av_Insider_Conn	Variable that describes average number of the additional directorships held by inside director in connected companies (companies that are part of the same holding or are in mother-daughter relationship) and calculated as number of the positions held by inside directors in connected companies divided by number of inside directors

Table 1. Ending of the table

Variable	Description
1	2
Av_Outsider_Conn	Variable that describes average number of the additional directorships held by outside director in connected companies and calculated as number of the positions held by outside directors in connected companies divided by number of outside directors
Av_Outsider_Notconn	Variable that describes average number of the additional directorships held by outside director in not connected companies and calculated as number of the positions held by outside directors in not connected companies divided by number of outside directors
Variables that characterize board composition	
Board_Size	Variable that describes the size of the board of directors and equal to the number of the directors in the board
Variables included in vector FIN	
Size	Variable that describes the size of the company and is measured as natural logarithm of total assets
Lev	Variable that describes leverage of the company and is calculated as the debt divided by total assets
Age	Variable that describes age of the company and is measured as natural logarithm of the number of years since company's establishment

In order to test hypotheses, the following sample was chosen: 219 Russian public companies and period of 2015-2016. Number of the companies corresponds to the number of public companies for which all the necessary information about corporate governance was available, because, for example, some public companies do not have board of directors meaning they are not appropriate for our study. Banks and other financial services companies are excluded from the sample due to the fact that nature of their activities is different it is not appropriate to include them in the same sample with companies from other industries. Reasoning for chosen years is the following: in 2014 there was issued new corporate governance code in Russia, and the assumption is that after publishing new code, companies were supposed to revise corporate governance practices they are using and improve them in case this improvement was needed. Members are selected annually, meaning that the board selected in 2015 should reflect the changes if the company was planning to make any. Moreover, scholars believe that one year is enough for the board of directors to influence the company performance. Saying that, it is reasonable to

measure corporate governance characteristics and performance measures for the same point of the time.

In order to collect the data, the following sources were used:

- SKRIN database;
- DATASTREAM database;
- Data from MICEX stock exchange;
- Annual and quarter company reports;
- Official websites of the companies,

from where the following data was obtained: financial results of the companies and corporate governance characteristics. Sample excludes banks and other companies that provide financial services because of the differences in the approaches to the activities.

All in all, 438 boards of directors were studied, and number of directors in these boards is equal to 3672. Average number of the positions held by the director is equal to 2.37 meaning that if to use the definition that busy director is the one who holds three and more positions, average Russian director is not considered to be busy. Comparing this result with other markets, it is more similar to developed market rather than developing markets. For example, in the USA and Germany average number of directorships per director is three (Fich, Shivdasani, 2006; Andres, Bingard, Lehmann, 2013), while, for example, in India this number equals to 5 (Sarkar, Sarkar, 2009). At the same time, descriptive statistics for sample of Turkish companies also shows that average number of the directorships per director is equal to 3 (Arioglu, Kaya, 2015). We believe that institutional and cultural differences do have their impact on the situations in the companies.

If to compare percentages of busy directors in the boards, for Russian market average is 38% which is even lower than the numbers received for developed markets: in the US average share of busy directors equals to 52.26%, and in Germany – 52.44%. If we have a look again at India, there average share of busy directors is 61.53% meaning that in Indian companies they tend to hire busy directors more. As for the board size, average size for Russian companies is equal to 8.42, for American companies this number equals to 11.88, Germany – 13.58, India – 9.46, Brazil – 6.4 directors (Fich, Shivdasani, 2006; Andres et al., 2013; Sarkar, Sarkar, 2009; Santos et al., 2012; Gutierrez, Pombo, 2011).

Figure 1 shows distribution of directorships and allows to see how many directors hold 1, 2, 3 and other amount of additional positions. We can see that almost half of the directors in sample do not hold directorships in other companies and fully devote their time to serving on the board of

one company. On the other hand, 11% of directors (416 directors out of 3672) serve on 7 and more additional boards. Among extreme cases as an example can be used members of Gazprom gazoraspredelenie who hold directorships in more than 50 companies. Unfortunately, even after the publication of corporate governance code, companies are still hiring overbusy directors.

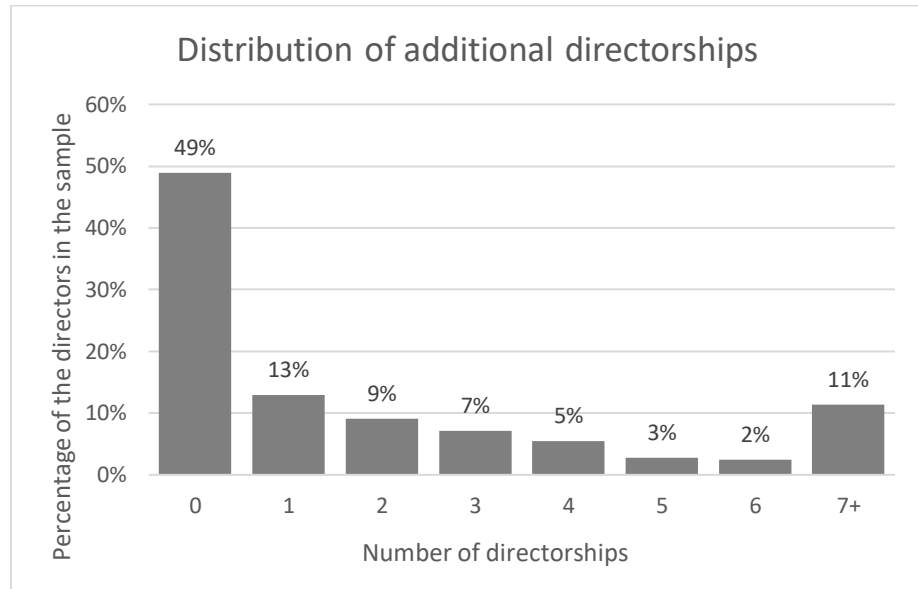


Figure 1. Distribution of additional directorships in Russian companies

As we want to see more precisely the busyness in connection to the type of director and to “touch” the nature of busyness, let’s have a look and distribution of the directorships between inside directors and outside directors. Director is considered to be an insider if he holds executive position in the company where he serves on board, and an outsider is the director which is not employed in the company. As was already mentioned, independent directors are also in the group of outsiders. Figure 2 shows average percentage of inside and outside directors for 2015 and 2016. We can see that on average only 1/5 of the boards is represented by inside directors, whereas around 80% of the directors are usually non-employees of the companies.

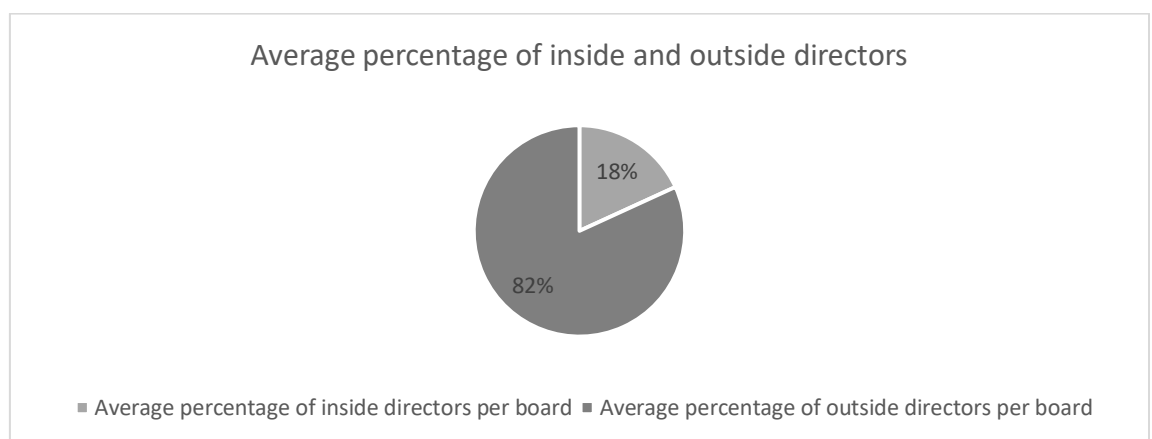


Figure 2. Average percentage of inside and outside directors on boards

Furthermore, figure 3 shows distribution of additional directorships among inside and outside directors. We can notice that inside directors usually hold less directorships than outsiders, and more than 65% of inside directors sit only on the board of the company they are working in not taking on additional directorships. At the same time, there are still some insiders that hold 7 and more additional directorships, and this type of directors constitute for 6% of all inside directors.

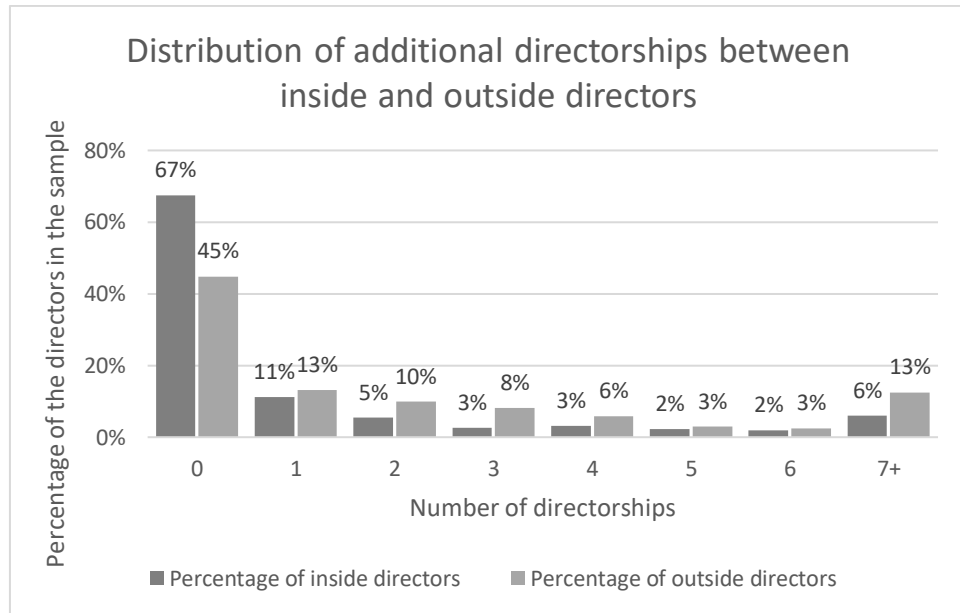


Figure 3. Distribution of additional directorships between inside and outside directors

Now we can look at the distribution of the positions in connected and not connected companies. Figure 4 shows distribution of the directorships of inside directors in connected and not connected companies.

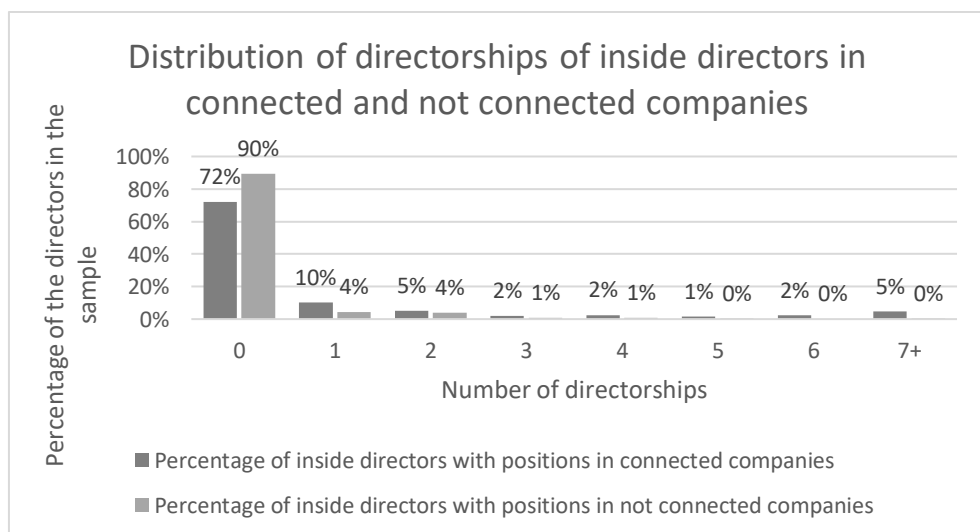


Figure 4. Distribution of the directorships of inside directors in connected and not connected companies

As is shown on figure 4, inside directors mostly hold positions in connected companies. Almost no directors hold more than 4 additional directorships in not connected companies. If to look at the situation with outside directors, figure 5 depicts that outside directors also tend to serve more on the boards of connected companies, though in this case we see that there are still outside directors who hold 7 and more additional positions in not connected companies.

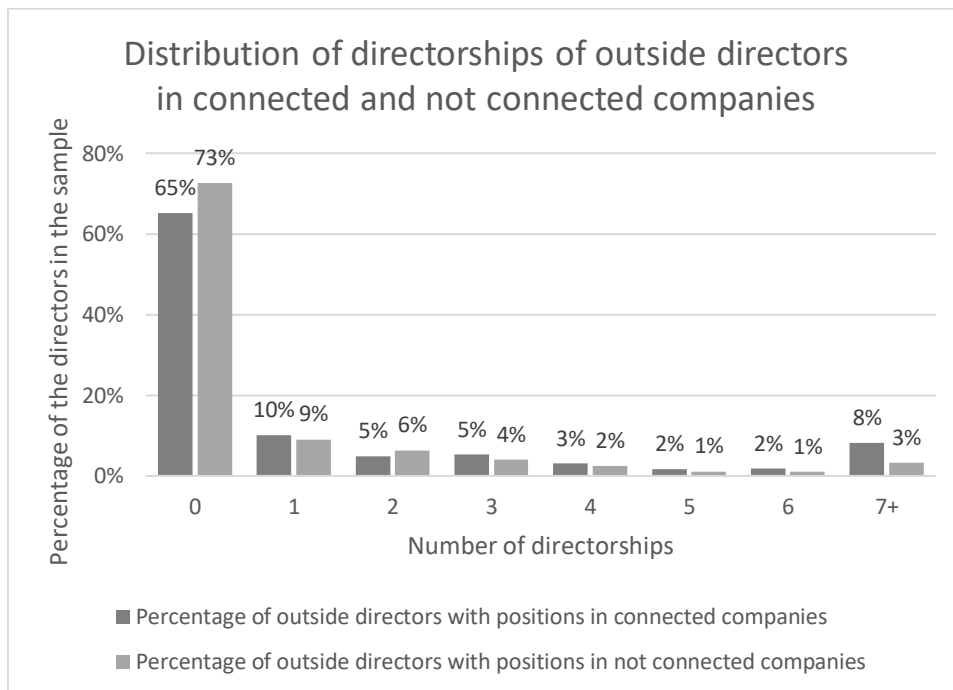


Figure 5. Distribution of directorships of outside directors in connected and not connected companies

From the observed information we can conclude that additional directorships are mostly directorships in connected companies, and this makes it even more interesting to see what the relationship between the directorships and company performance is. Before moving to the descriptive statistics of the variables used in the models, let's see statistics that describe busyness of the directors in general, not averaging number of positions for the size of the board (table 2).

Table 2

Descriptive statistics on director busyness

Variable	Observations	Mean	St. deviation	Min	Max
# of directorships held by directors	3672	2.37	4.60	0	67
# of directorships held by inside directors	667	1.25	2.73	0	20
# of directorships held by outside directors	3005	2.62	4.88	0	67

As can be seen from the table above, on average directors hold 2 additional positions in the boards of other companies; besides, there is director who holds at the same time 67 positions. This director is working in Gazprom gazoraspredelenie Rostov-na-Donu company and mostly holds positions in subsidiaries belonging to the same mother company. If we think about this in general, it is obvious that it is impossible for a director to effectively serve on the boards of 67 companies, and probably majority of these directorships is just stated on paper not requiring real participation in the work of the company. For the inside directors, maximum number of the directorships in other companies is equal to 20 and on average insiders hold 1.25 positions. Insider with 20 directorships is serving on the board of the company TGK-1. As for outside directors, we can see that average number of additional directorships is higher and equal to 2.62, and the maximum number of 67 position belongs to outside director. Descriptive statistics for all other variables used in the models is shown in table 3 below.

Table 3

Descriptive statistics

Variable	Observations	Mean	St. deviation	Min	Max
Av_Insider	438	1.08	2.52	0.00	20
Av_Outsider	438	2.41	3.51	0.00	39.33
Av_Insider_Conn	438	0.87	2.28	0.00	20
Av_Insider_Notconn	438	0.22	0.73	0.00	6.5
Av_Outsider_Conn	438	1.62	3.46	0.00	39.33
Av_Outsider_Notconn	438	0.79	1.24	0.00	7.11
Board_Size	438	8.42	2.38	5	17
ROA	417	0.07	0.11	-0.32	0.45
M-to-B	360	1.03	0.56	0.01	2.98
ATO	392	0.62	0.59	0.00	2.83
SGA	410	0.16	0.20	0	0.87
Age	428	3.26	1.00	0	5.63
Size	428	23.91	2.26	14.89	30.23
Lev	428	0.23	0.24	0	0.98

From the descriptive statistics, first, we can see that on average inside directors hold only one additional position, while outside directors on average hold 2 positions. At the same time, we see that average number of positions held by insiders in not connected companies is very low and is equal to 0.22, while similar variable for outsiders is equal to 0.79. Average board size is 8

directors and the range is from 5 to 17 directors. We can observe that on average Russian companies were performing with the return of assets equal to 7%; moreover, the market estimates Russian companies on average higher than their book value, as we see the average value for market-to-book ratio equal to 1.03. Further we will see the results of the econometric analysis received on the sample described.

3.2. Econometric analysis

As was already mentioned in previous parts, for financial performance measurement two indicators were chosen: return on assets and market-to-book ratio. Choice of these particular indicators was based on their applicability and also on the fact that they are used in many other studies of corporate governance before. Saying that, choosing same indicators allows to compare the results and come up with relevant comparison analysis. First, we will refer to the results obtained for the case when performance is measured with the use of ROA indicator. Table 4 reflects the results obtained and includes three models: (1) is the baseline, (2) considers average number of directorships held by inside and outside directors (linear relationship), (3) considers average number of directorships held by inside and outside directors (non-linear relationship), (4) considers also distribution of the positions between connected and not connected companies (linear relationship) and (5) considers distribution of the positions between connected and not connected (non-linear relationship).

Table 4

Results of econometric analysis (1)¹

Variable	ROA _t				
	1	2	3	4	5
Av_Insider ²	-	-	0.0005	-	-
Av_Insider	-	-0.0038*	-0.0087*	-	-
Av_Outsider ²	-	-	0.0002**	-	-
Av_Outsider	-	-0.0011	-0.0070**	-	-
Av_Insider_Conn ²	-	-	-	-	0.0004
Av_Insider_Conn	-	-	-	-0.0007	-0.0055
Av_Insider_Notconn ²	-	-	-	-	-0.0080**
Av_Insider_Notconn	-	-	-	-0.0229***	0.0112
Av_Outsider_Conn ²	-	-	-	-	0.0002**

¹ Stata screenshots of the models can be found in Appendices 1-5

Table 4. Ending of the table

Variable	ROA _t				
	1	2	3	4	5
Av_Outsider_Conn	-	-	-	-0.0012	-0.0065**
Av_Outsider_Notconn ²	-	-	-	-	-0.0004
Av_Outsider_Notconn	-	-	-	-0.0018	-0.0008
Board_Size	-0.0062**	-0.0065***	-0.0060**	-0.0055**	-0.0054**
Age	0.0121**	0.0123**	0.0121**	0.0120**	0.0116**
Size	0.0100***	0.0118***	0.0135***	0.0118***	0.0124***
Lev	-0.0577**	-0.0586**	-0.0563**	-0.0590**	-0.0589**
Cons	-0.1450**	-0.1793***	-0.2123***	-0.1849***	-0.1948***
R ²	0.0476	0.0572	0.0737	0.0745	0.1003
p-value	0.0005	0.0005	0.0001	0.0001	0.0000

Statistical significance at the 10, 5, and 1 percent levels is indicated by *, **, and *** respectively.

To start with, all five models are statistically significant. We can see that coefficients in the baseline model are all statistically significant. Second model shows that there is negative relationship between the positions of insiders and return on assets, however, as was explained in chapter 2, we want to examine also non-linear relationship. Third model shows that there is negative relationship between busyness of inside directors and non-linear U-shaped relationship between ROA and outside directors' busyness. However, if we try to see how many positions on average bring lowest ROA, this bottom value is equal to 17.5 positions. If we look at the studying sample we will find out that less than 5% of outside directors hold more than 17.5 positions. This means that we can accept that relationship between ROA and outside directors' busyness is also negative and can be perceived as linear. The result is consistent with the results obtained in developed markets where busyness is negatively associated with company performance. The more directorships board members get, the worse operating performance of the company is, which means that busyness hypothesis in this case is strongly demonstrated.

If we look further and consider separation between directorships based on the condition if the company is connected or not, there is statistically significant negative linear relationship between the average number of the positions held by insiders in not connected companies and also negative relationship between the positions held by outsiders in connected companies. As can be seen, relationship between the number of outsiders' positions in connected companies is non-linear; however, if we calculate the number where relation changes its direction from negative to positive, we will see that this number is equal to 16. Less than 5% of outsiders hold more than 16

positions in connected companies, and because of this we conclude that relationship is linear and negative. Explanation for such state of affairs can be that insider that serve in not connected companies have actually spend time on them, and that is why this company is suffering. Whereas positions of outside directors in connected companies in a sense lowers their unbiasedness and does not allow the to get access to new resources and networks, as usually industries are the same and people are more or less the same. It is reasonable to ask why there is no relationship between the positions of insiders in connected companies and between the positions of outsiders in not connected companies. One possible explanation can be that for insiders additional positions in connected companies do not bring too much and they do not require too much, because these are only positions “on paper”. Moving further, table 5 shows the relationship between busyness and market-to-book ratio.

Table 5

Results of econometric analysis (2)²

Variable	Market-to-Book _t				
	1	2	3	4	5
Av_Insider ²	-	-	-0.0141***	-	-
Av_Insider	-	0.0245*	0.1514***	-	-
Av_Outsider ²	-	-	-0.0007	-	-
Av_Outsider	-	-0.0113	0.0038	-	-
Av_Insider_Conn ²	-	-	-	-	-0.0096**
Av_Insider_Conn	-	-	-	0.0151	0.0877**
Av_Insider_Notconn ²	-	-	-	-	-0.0320
Av_Insider_Notconn	-	-	-	0.0493	0.1662*
Av_Outsider_Conn ²	-	-	-	-	-0.0006
Av_Outsider_Conn	-	-	-	-0.0138*	0.0027
Av_Outsider_Notconn ²	-	-	-	-	-0.0246*
Av_Outsider_Notconn	-	-	-	0.0262	0.1229*
Board_Size	0.0031	0.0034	-0.0036	0.0014	-0.0032
ROA	0.6437***	0.6437***	0.6557***	0.6699***	0.6499***
Age	-0.0277	-0.0270	-0.0203	-0.0257	-0.0193
Size	-0.0693***	-0.0748***	-0.0863***	-0.0804***	-0.0892***
Lev	0.9321***	0.9232***	0.9129***	0.9016***	0.9122***

² Stata screenshots of the models can be found in Appendices 6-10

Table 5. Ending of the table

Variable	Market-to-Book _t				
	1	2	3	4	5
Cons	2.5183***	2.6478***	2.9019***	2.7746***	2.9397***
R ²	0.1314	0.1435	0.1907	0.1515	0.1821
p-value	0.0000	0.0000	0.0000	0.0000	0.0000

Statistical significance at the 10, 5, and 1 percent levels is indicated by *, **, and *** respectively.

In the case when performance is measured through the market-based indicator, we can make conclusions about the market's reaction on busyness, but first it is important to mention that all models are statistically significant and coefficients in the baseline model for the control variables are significant as well. Second and third models consider busyness of inside and outside directors (linear and non-linear relationships), while fourth and fifth models allow to see relationship in case of the directorships in connected and not connected companies (linear and non-linear relationships). For the third model when we consider the directorships of the inside and outside directorships, we see that there is inverted U-shaped relationship between busyness of inside directors and market-to-book ratio. If we calculate the value when market-to-book ratio is the highest, we will see that average number of inside directors' positions is equal to 5.4, meaning that market tolerates and reacts positively when number of insiders' directorships increases to 5, but if there are more directorships held by insiders, market's reaction is negative; this means that market considers board to be busy when the average number of the directorships held by inside directors is higher than 5. There is no relationship between the number of positions held by outside directors.

At the same time, if we again dive more into the nature of additional directorships, we will see (model 5) that there is positive relationship between inside directors' positions (both in connected and not connected companies) and market-to-book ratio. Even though we see non-linear relationship, the value where the direction of the relationship changes is in 95% percentile meaning that we can consider relationship to be positive and linear. As for outside directors, there is inverted U-shaped relationship between the average number of directorships of outside directors in not connected companies, and the direction is different when outside director holds more than 2 positions: after this point market's reaction is negative. Probably in this case market believes that outside directors will not have enough time for proper execution of their duties. Positive relationship for the inside directors can be explained through markets perception that if insiders are invited to the boards of different companies, it indicates their knowledge, experience and reputation. These results are more consistent with the ones received in developing markets,

probably indicating that development of the Russian market is not on that high level now and social capital of the board members is important for the market.

Finally, results for the models with agency costs proxies are shown in table 6.

Table 6

Results of econometric analysis (3)³

Variable	ATO _t			SGA _t		
	1	2	3	4	5	6
Av_Insider ²	-	0.0037*	-	-	-0.0008	-
Av_Insider	-	-0.0690***	-	-	0.0140	-
Av_Outsider ²	-	0.0000	-	-	-0.0005***	-
Av_Outsider	-	-0.0050	-	-	0.0172***	-
Av_Insider_Conn ²	-	-	0.0020	-	-	-0.0007
Av_Insider_Conn	-	-	-0.0454	-	-	0.0157
Av_Insider_Notconn ²	-	-	0.0352*	-	-	-0.0060
Av_Insider_Notconn	-	-	-0.1986**	-	-	0.0116
Av_Outsider_Conn ²	-	-	-0.0005	-	-	-0.0004**
Av_Outsider_Conn	-	-	0.0126	-	-	0.0138**
Av_Outsider_Notconn ²	-	-	-0.0121	-	-	0.0025
Av_Outsider_Notconn	-	-	-0.0084	-	-	0.0112
Board_Size	0.0439***	0.0440***	0.0484***	-0.0119***	-0.0130***	-0.0125***
Age	0.1216***	0.1208***	0.1217***	-0.0281***	-0.0282***	-0.0293***
Size	-0.0507***	-0.0345**	-0.0333**	-0.0081*	-0.0146***	-0.0146***
Lev	0.2283*	0.2209*	0.2654**	-0.1206***	-0.1247***	-0.1344***
Cons	1.0152***	0.6911**	0.6270*	0.5765***	0.7033***	0.7054***
R ²	0.0865	0.1090	0.1350	0.0947	0.1299	0.1348
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Statistical significance at the 10, 5, and 1 percent levels is indicated by *, **, and *** respectively.

All the presented models are statistically significant. From this table we can also make several conclusions about the relationship between agency costs and busyness. First, if to measure agency costs as ATO, there is non-linear relationship between average number of insiders positions and ATO. However, only less than 5% of insiders hold more than 9 positions (number when

³ Stata screenshots of the models can be found in Appendices 11-16

direction changes from negative to positive). This means that there is negative relationship between busyness of inside directors and asset turnover. Moreover, the turnover is negative between the positions held by insiders in not connected companies. Even though from the table we conclude that relationship is non-linear, there is the same situation as before: less than 5% of insiders hold more than 3 positions (peak); therefore, relationship is linear and negative. We believe that this can be explained through the idea that insiders who are also managers get distracted by work in other companies and are not able to make right decisions; as a consequence, asset turnover lowers.

At the same time, if to consider the models where agency costs are measured through expense ratio, we can notice that there is non-linear relationship between busyness of outside directors and SGA. According to the results from the model 5, when outsiders hold up to 17 position, relationship is positive and after this point it is negative. From the sample it can be observed that less than 5% of outsiders hold more than 17 positions, because of this the relationship should be considered as linear and positive. From the 6th model we observe inverted U-shaped non-linear relationship between average number of outsiders' positions in connected companies, but because of the same reason as in the cases before we conclude that the relationship is linear and positive. Possible explanation for this can be that outside directors getting more and more additional directorships become more distracted, and as a result they do not perform monitoring function effectively and share of selling, general and administrative expenses rises.

All in all, it is possible to conclude that there is linear relationship between board busyness and agency costs: the busier the board is, the higher the agency costs are. We observed relationship between busyness of insiders and asset turnover, and between busyness of outsiders and SGA ratio.

3.3. Analysis of the results and conclusions

Summing up the results obtained through the analysis, it is important to state that there are different results depending on which metric to use. If to consider operating performance, there is negative relationship between busyness of both inside and outside directors. This result is consistent with the busyness hypothesis and indicates that when directors have less time to work properly, operating performance decreases. Same result was obtained in developed markets that also found out that there is negative relationship between operating performance and busyness (e. g., Fich, Shivdasani, 2006; Cashman, Gillan, Jun, 2012). Moreover, there is negative relationship between average number of the directorships held by insiders in not connected companies and performance and also between average number of directorships held by outsiders in connected companies. It can be concluded that operating performance is negatively related to the busyness

of the directors no matter if they are insiders or outsider, and in case if the company's target is to show high operating performance measured through return on assets, it is better not to have busy directors on board.

On the other hand, there is non-linear relationship between market-to-book ratio and busyness. Market reacts positively when insiders hold up to five positions, and in case if number of positions is higher than 5, relationship changes to negative. If to have a look at distribution of the directorships in connected and not connected companies, there is positive relation between market performance and appointments of insiders and for the outsiders there is also positive relation up to 2 additional appointments in not connected companies. In general, we see that in case of market's reaction, results are more consistent with developing markets where positive reaction is more common (Sarkar, Sarkar, 2009). This can indicate the level of the development of Russian market and investors perception that social capital in terms of networks and ties is more important.

As for the agency costs, we see that there is linear negative relationship between average number of directorships and level of agency costs. Unfortunately, this result is impossible to compare with the results from other studies, but the nature of relationship was expected. When directors become too busy, they are not able to effectively monitor managers and advise them. At the same time, it is important to mention that the relationship between agency costs and busyness should be studied more in order to make proper conclusions as there can be many firm-specific factors connected to the chosen indicators that do not really reflect the level of agency costs.

3.4. Managerial implications

Conducted study shows that relationship between busyness and financial performance is different depending on how the performance is measured; at the same time, busyness is proved to be positively associated with agency costs: the busier the directors are, the higher the level of the agency costs in the company is.

Obtained results allow to make several recommendations for different players in the companies and in the market aimed at improving the performance of the companies.

1) Shareholders

To start with, shareholders can obtain many useful insights for appointments of the directors for the board. First of all, if shareholders are more interested in the operating performance of the company, it is better to appoint directors without additional appointments in other companies. This will let them to concentrate solely on the company's activities. Moreover,

directors without additional directorships proved to be more efficient in performing their monitoring function and lowering agency costs. On the other hand, if the shareholders are currently more concerned about the performance on the stock exchange, it is good to have busy directors, as busy directors are giving positive signals to the market. However, it is reasonable to have upper limits of the positions held by inside directors and by outside directors in, especially, not connected companies. Even if in the coming years there will not appear official recommendation about the number of directorships in the corporate governance code, it is advised to set these limits in company documents and follow them while appointing new directors.

2) Managers

For managers who serve on boards it is important to know that their additional appointments are perceived positively by the market but can have bad influence on the operating performance. Market believes that if insider is appointed to the boards of any company (connected or not connected), this indicates his or her reputation and proves good quality of his or her job.

3) Investors

For investors proved relationships should help to realize that before choosing the companies, corporate governance should be studied as well. Usually corporate governance is observed through the concept of independent directors and gender diversity, but as was shown, busyness is also important and can be determinant to company performance. In addition, it is reasonable to see the busyness from the perspective of outside and inside directors, and also understand that the nature (connected companies or not) of the directorships matters.

4) Regulation authorities

Because of the negative relationship between the operating performance and busyness, and also different direction of the relationship between market performance and busyness depending on the number of positions held, it is reasonable to suggest recommendations related to the busyness in the corporate governance code. Moreover, this is also reasonable because of the negative effect of busyness on the level of agency costs. Recommendations can be expressed in the form of limit for the additional directorships.

CONCLUSION

As was already mentioned, companies right now have way bigger value compared to the value of their tangible assets, and this leads to the conclusion that there is something else inside the companies that generates value. One of the possible sources can be intellectual capital, however, there are different groups of stakeholders that can be viewed as sources of intellectual capital.

Within this master thesis board of directors was chosen as the source of intellectual capital, and it is believed that there are two types of intellectual capital board of directors provide companies with: human capital and social capital. Human capital implies knowledge, experience and skills that belong to board members, whereas social capital is about the networks and connections. Concept of multiple directorships is usually viewed from the perspective of social capital; however, the division is very relative. On the one hand, busy directors (those who hold additional directorships in the boards of other companies) have variety of experience, much knowledge and amazing skills, besides they have many connections and access to many resources; on the other hand, in case of holding too many positions, such directors might not be able to perform their duties well because of the lack of time. Advantages of busyness can be expressed as reputation hypothesis, quality hypothesis and resource dependence theory (Fama, Jensen, 1983; Fama, 1980; Pfeffer, 1972), while negative side is reflected within busyness hypothesis (Ferris et al., 2003).

Because of the ambiguity of the concept, the following question raise: is there relationship between board busyness and company performance? The goal of the thesis was to answer this question and based on the obtained results come up with managerial implications. As there is limited amount of the studies of Russian market, Russian public companies were chosen for the analysis.

First chapter of this work contains description of the boards of directors, their importance, roles and functions. Moreover, intellectual capital of the board of directors is discussed and it is shown that there is impact of the board composition and intellectual capital on company performance. Second chapter is more focused on the company performance and allows to see that there are at least two approaches to treat company performance: from the perspective of financial performance and from the perspective of agency costs. Different metrics for financial performance and agency costs are discussed in order to choose the most appropriate ones for the research. Third chapter contains empirical study conducted on the sample of 219 Russian companies within the period of 2015-2016. 3672 directors are studied and analyzed in terms of board characteristics.

The study shows that there is negative relationship between board busyness and financial operating performance, non-linear relationship between busyness and market performance, and positive relationship between board busyness and the level of agency costs, and such results allow to come up with specific managerial implications. Moreover, results show, that it is important to consider multiple directorships not for all the directors, but it is better to distinguish between outside and inside directors, and also to study the nature of the directorships held, in other words, if these directorships are held in connected or not connected companies. Saying that, if the performance is measured as return on assets, there is negative relationship between ROA and both busyness of outsiders and insiders. Every additional directorship is associated with the decrease in the return on assets. If financial performance is measured as M/B ratio, there is inverted U-shaped relationship with busyness of insiders: if insiders hold less than 5 positions, relationship is positive, and if average number of the positions is higher, relationship is negative. Besides, for the outsiders there was found non-linear relationship between the average number of the positions in not connected companies and M/B ratio. Finally, as for the agency costs, linear relationship takes place: asset turnover is negatively associated with the busyness of insiders, while share of SGA expenses is positive associated with the busyness of outsiders. Such results indicate that busyness of the board members is related to the results of the companies and should be taken into account while observing companies' performance.

The paper contributes to the research of the board busyness in Russian companies and provides with first insights into relation between the agency costs and board busyness. As for implications, obtained results can be useful for the investors, as they can choose stocks for investments not only based on the financial analysis, but also on the corporate governance analysis. In addition, results should be useful for the shareholders especially in the situations of making decisions about the board composition or appointment of new members. Another important stakeholder are regulatory authorities, and in this case the results can become base for the recommendation to include suggestions in the corporate governance code on the limit of multiple directorships number.

However, along with stated implications it is necessary to realize that there are some limitations of the study. First of all, studied period is relatively small, but as was explained in the paper, this period was chosen because of publication of new edition of corporate governance code in 2014. As time will pass, it is necessary to consider longer time period. Secondly, it is impossible to state that director's attitude to the busyness and to additional directorships is the same: some directors can really get benefits for the company through the networks, knowledge and experience, whereas others can ignore the opportunities and just hold the positions without much of

involvement. It was tried to tackle this problem at least through viewing separately positions in connected and not connected companies, however, still the limitation exists. Thirdly, nature of the companies where these directorships are held can also influence the effect on the company performance, and in current study such characteristics were not considered.

To conclude, the goal of the master thesis was reached and the empirical study of the relationship between busyness of the boards of directors in the Russian companies and their performance was conducted. Obtained results and provided implications can be useful and interesting for the shareholders, potential investors, managers and regulatory authorities.

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APPENDICES

Appendix 1. Screenshot from Stata of the baseline model with ROA as dependent variable

```
. reg roa bsize lnage lnassets lev1
```

Source	SS	df	MS			
Model	.223366643	4	.055841661	Number of obs =	417	
Residual	4.4736397	412	.010858349	F(4, 412) =	5.14	
Total	4.69700634	416	.011290881	Prob > F =	0.0005	
				R-squared =	0.0476	
				Adj R-squared =	0.0383	
				Root MSE =	.1042	

roa	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
bsize	-.0062405	.0024577	-2.54	0.011	-.0110717	-.0014094
lnage	.0121491	.0050977	2.38	0.018	.0021284	.0221699
lnassets	.0099758	.0026867	3.71	0.000	.0046945	.0152571
lev1	-.0576911	.0230819	-2.50	0.013	-.103064	-.0123182
_cons	-.1450097	.0590764	-2.45	0.015	-.2611384	-.028881

Appendix 2. Screenshot from Stata of the linear regression model with ROA as dependent variable and busyness of insiders and outsiders as independent variables

```
. reg roa av_ins av_out bsize lnage lnassets lev1
```

Source	SS	df	MS			
Model	.268440077	6	.044740013	Number of obs =	417	
Residual	4.42856626	410	.010801381	F(6, 410) =	4.14	
Total	4.69700634	416	.011290881	Prob > F =	0.0005	
				R-squared =	0.0572	
				Adj R-squared =	0.0434	
				Root MSE =	.10393	

roa	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
av_ins	-.0037849	.002217	-1.71	0.089	-.0081429	.0005732
av_out	-.0011385	.0014859	-0.77	0.444	-.0040594	.0017824
bsize	-.0064922	.0024548	-2.64	0.008	-.0113177	-.0016667
lnage	.0123179	.005088	2.42	0.016	.002316	.0223197
lnassets	.0117655	.0028192	4.17	0.000	.0062236	.0173074
lev1	-.0586391	.0230277	-2.55	0.011	-.1039061	-.0133722
_cons	-.1792764	.0612917	-2.92	0.004	-.2997616	-.0587913

Appendix 3. Screenshot from Stata of the non-linear regression model with ROA as dependent variable and busyness of insiders and outsiders as independent variables

```
. reg roa av_ins2 av_ins av_out2 av_out bsize lnage lnassets lev1
```

Source	SS	df	MS			
Model	.345984617	8	.043248077	Number of obs =	417	
Residual	4.35102172	408	.010664269	F(8, 408) =	4.06	
Total	4.69700634	416	.011290881	Prob > F =	0.0001	
				R-squared =	0.0737	
				Adj R-squared =	0.0555	
				Root MSE =	.10327	

roa	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
av_ins2	.0004829	.0003853	1.25	0.211	-.0002745	.0012402
av_ins	-.008693	.0048666	-1.79	0.075	-.0182598	.0008738
av_out2	.0002408	.0001028	2.34	0.020	.0000387	.0004429
av_out	-.007028	.002846	-2.47	0.014	-.0126227	-.0014333
bsize	-.0059695	.002447	-2.44	0.015	-.0107798	-.0011592
lnage	.0120826	.0050584	2.39	0.017	.0021388	.0220263
lnassets	.0134555	.0028818	4.67	0.000	.0077905	.0191204
lev1	-.0563326	.022898	-2.46	0.014	-.1013453	-.0113199
_cons	-.212311	.0624035	-3.40	0.001	-.3349836	-.0896384

Appendix 4. Screenshot from Stata of the linear regression model with ROA as dependent variable and busyness of insiders and outsiders (with division into connected and not connected companies) as independent variables

```
. reg roa av_ins_subs av_ins_nosubs av_out_subs av_out_nosubs bsize lnage lnassets lev1
```

Source	SS	df	MS			
Model	.349952214	8	.043744027	Number of obs =	417	
Residual	4.34705412	408	.010654544	F(8, 408) =	4.11	
Total	4.69700634	416	.011290881	Prob > F =	0.0001	
				R-squared =	0.0745	
				Adj R-squared =	0.0564	
				Root MSE =	.10322	

roa	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
av_ins_subs	-.0006592	.0024831	-0.27	0.791	-.0055404	.0042221
av_ins_nosubs	-.0229009	.0075034	-3.05	0.002	-.037651	-.0081508
av_out_subs	-.0012366	.0014993	-0.82	0.410	-.004184	.0017107
av_out_nosubs	-.0017556	.0045526	-0.39	0.700	-.010705	.0071938
bsize	-.0055388	.0024725	-2.24	0.026	-.0103992	-.0006784
lnage	.0119809	.0050584	2.37	0.018	.0020371	.0219247
lnassets	.0118027	.0028626	4.12	0.000	.0061755	.01743
lev1	-.0589924	.0231394	-2.55	0.011	-.1044797	-.0135052
_cons	-.1848815	.0623869	-2.96	0.003	-.3075214	-.0622416

Appendix 5. Screenshot from Stata of the non-linear regression model with ROA as dependent variable and busyness of insiders and outsiders (with division into connected and not connected companies) as independent variables

```
. reg roa av_ins_subs2 av_ins_subs av_ins_nosubs2 av_ins_nosubs av_out_subs2 av_out_subs av_out_nosubs2 av_out_nosubs bsize lnage lnassets lev1
```

Source	SS	df	MS			
Model	.47102231	12	.039251859	Number of obs =	417	
Residual	4.22598403	404	.010460357	F(12, 404) =	3.75	
Total	4.69700634	416	.011290881	Prob > F =	0.0000	
				R-squared =	0.1003	
				Adj R-squared =	0.0736	
				Root MSE =	.10228	

roa	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
av_ins_subs2	.0004063	.0004132	0.98	0.326	-.0004061	.0012187
av_ins_subs	-.0055394	.0053517	-1.04	0.301	-.01606	.0049813
av_ins_nosubs2	-.0080257	.003666	-2.19	0.029	-.0152326	-.0008188
av_ins_nosubs	.0112181	.0167655	0.67	0.504	-.0217405	.0441767
av_out_subs2	.0002262	.0001051	2.15	0.032	.0000196	.0004329
av_out_subs	-.0064951	.0029795	-2.18	0.030	-.0123523	-.0006379
av_out_nosubs2	-.000483	.0023543	-0.21	0.838	-.0051112	.0041451
av_out_nosubs	-.000845	.0114589	-0.07	0.941	-.0233716	.0216815
bsize	-.0054023	.0024567	-2.20	0.028	-.0102319	-.0005728
lnage	.0116175	.0050478	2.30	0.022	.0016942	.0215407
lnassets	.0124081	.0029361	4.23	0.000	.0066361	.0181802
lev1	-.0589109	.0229591	-2.57	0.011	-.104045	-.0137768
_cons	-.1948101	.0633408	-3.08	0.002	-.3193288	-.0702914

Appendix 6. Screenshot from Stata of the baseline model with M/B ratio as dependent variable

```
. reg mtob bsize roa lnage lnassets lev1
```

Source	SS	df	MS			
Model	14.9959385	5	2.99918771	Number of obs =	360	
Residual	99.1164537	354	.279989982	F(5, 354) =	10.71	
Total	114.112392	359	.317861817	Prob > F =	0.0000	
				R-squared =	0.1314	
				Adj R-squared =	0.1191	
				Root MSE =	.52914	

mtob	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
bsize	.0031357	.0139035	0.23	0.822	-.0242082	.0304795
roa	.6436797	.1521458	4.23	0.000	.3444563	.9429031
lnage	-.0276884	.0283954	-0.98	0.330	-.0835333	.0281565
lnassets	-.0693198	.0166081	-4.17	0.000	-.1019828	-.0366569
lev1	.9321591	.1559849	5.98	0.000	.6253855	1.238933
_cons	2.518323	.3532276	7.13	0.000	1.823634	3.213012

Appendix 7. Screenshot from Stata of the linear regression model with M/B ratio as dependent variable and busyness of insiders and outsiders as independent variables

```
. reg mtob av_ins av_out bsize roa lnage lnassets lev1
```

Source	SS	df	MS			
Model	16.3737114	7	2.33910163	Number of obs =	360	
Residual	97.7386809	352	.277666707	F(7, 352) =	8.42	
Total	114.112392	359	.317861817	Prob > F =	0.0000	
				R-squared =	0.1435	
				Adj R-squared =	0.1265	
				Root MSE =	.52694	

mtob	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
av_ins	.024528	.0131639	1.86	0.063	-.0013618	.0504178
av_out	-.0113275	.0082423	-1.37	0.170	-.0275379	.0048829
bsize	.0034189	.0138467	0.25	0.805	-.0238138	.0306516
roa	.643665	.151681	4.24	0.000	.3453501	.94198
lnage	-.0269981	.0283549	-0.95	0.342	-.0827645	.0287682
lnassets	-.0747656	.0171586	-4.36	0.000	-.1085119	-.0410194
lev1	.9232488	.1554648	5.94	0.000	.6174922	1.229005
_cons	2.647781	.3650148	7.25	0.000	1.929897	3.365665

Appendix 8. Screenshot from Stata of the non-linear regression model with M/B ratio as dependent variable and busyness of insiders and outsiders as independent variables

```
. reg mtob av_ins2 av_ins av_out2 av_out bsize roa lnage lnassets lev1
```

Source	SS	df	MS			
Model	21.757536	9	2.417504	Number of obs =	360	
Residual	92.3548563	350	.263871018	F(9, 350) =	9.16	
Total	114.112392	359	.317861817	Prob > F =	0.0000	
				R-squared =	0.1907	
				Adj R-squared =	0.1699	
				Root MSE =	.51368	

mtob	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
av_ins2	-.0140608	.0032806	-4.29	0.000	-.020513	-.0076086
av_ins	.1514003	.0326906	4.63	0.000	.0871056	.2156951
av_out2	-.000718	.0005471	-1.31	0.190	-.0017941	.0003581
av_out	.0037578	.0160667	0.23	0.815	-.0278417	.0353573
bsize	-.0036417	.0136326	-0.27	0.790	-.0304537	.0231704
roa	.6556822	.148303	4.42	0.000	.364005	.9473594
lnage	-.0202549	.0277531	-0.73	0.466	-.0748387	.0343289
lnassets	-.0862777	.0169521	-5.09	0.000	-.1196184	-.0529369
lev1	.9129104	.1516807	6.02	0.000	.6145902	1.211231
_cons	2.901932	.3609832	8.04	0.000	2.191963	3.611901

Appendix 9. Screenshot from Stata of the linear regression model with M/B ratio as dependent variable and busyness of insiders and outsiders (with division into connected and not connected companies) as independent variables

```
. reg mtob av_ins_subs av_ins_nosubs av_out_subs av_out_nosubs bsize roa lnage lnassets lev1
```

Source	SS	df	MS			
Model	17.2893783	9	1.92104203	Number of obs =	360	
Residual	96.823014	350	.276637183	F(9, 350) =	6.94	
Total	114.112392	359	.317861817	Prob > F =	0.0000	
				R-squared =	0.1515	
				Adj R-squared =	0.1297	
				Root MSE =	.52596	

mtob	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
av_ins_subs	.0151257	.0159994	0.95	0.345	-.0163412	.0465927
av_ins_nosubs	.0492776	.0407715	1.21	0.228	-.0309102	.1294655
av_out_subs	-.0137798	.0083458	-1.65	0.100	-.030194	.0026343
av_out_nosubs	.0261952	.0266125	0.98	0.326	-.0261454	.0785358
bsize	.0013914	.0139115	0.10	0.920	-.0259693	.028752
roa	.6698934	.1522209	4.40	0.000	.3705107	.9692761
lnage	-.0257244	.0283487	-0.91	0.365	-.0814796	.0300308
lnassets	-.0804304	.0175754	-4.58	0.000	-.1149971	-.0458637
lev1	.9015523	.1572698	5.73	0.000	.5922396	1.210865
_cons	2.774553	.3741641	7.42	0.000	2.03866	3.510446

Appendix 10. Screenshot from Stata of the non-linear regression model with M/B ratio as dependent variable and busyness of insiders and outsiders (with division into connected and not connected companies) as independent variables

```
. reg mtob av_ins_subs2 av_ins_subs av_ins_nosubs2 av_ins_nosubs av_out_subs2 av_out_subs av_out_nosubs2 av_out_n
> osubs bsize roa lnage lnassets lev1
```

Source	SS	df	MS			
Model	20.7795387	13	1.59842606	Number of obs =	360	
Residual	93.3328535	346	.269748132	F(13, 346) =	5.93	
Total	114.112392	359	.317861817	Prob > F =	0.0000	
				R-squared =	0.1821	
				Adj R-squared =	0.1514	
				Root MSE =	.51937	

mtob	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
av_ins_subs2	-.0096032	.0044303	-2.17	0.031	-.0183169	-.0008895
av_ins_subs	.0877265	.0412671	2.13	0.034	.0065604	.1688925
av_ins_nos~2	-.0319616	.0200617	-1.59	0.112	-.0714197	.0074966
av_ins_nos~s	.1662628	.0944473	1.76	0.079	-.0195002	.3520258
av_out_subs2	-.0005824	.0005719	-1.02	0.309	-.0017072	.0005424
av_out_subs	.0027399	.0170417	0.16	0.872	-.0307786	.0362583
av_out_nos~2	-.0246073	.0143616	-1.71	0.088	-.0528543	.0036398
av_out_nos~s	.1229638	.0674202	1.82	0.069	-.0096413	.2555688
bsize	-.0032096	.0138591	-0.23	0.817	-.0304683	.0240492
roa	.6498679	.1510745	4.30	0.000	.3527281	.9470078
lnage	-.0193166	.028392	-0.68	0.497	-.0751592	.0365261
lnassets	-.0891797	.0177648	-5.02	0.000	-.1241204	-.054239
lev1	.9122994	.1553459	5.87	0.000	.6067583	1.21784
_cons	2.939747	.3749434	7.84	0.000	2.202292	3.677202

Appendix 11. Screenshot from Stata of the baseline model with ATO as dependent variable

```
. reg ato bsize lnage lnassets lev1
```

Source	SS	df	MS			
Model	11.7196607	4	2.92991519	Number of obs =	392	
Residual	123.783487	387	.319853972	F(4, 387) =	9.16	
Total	135.503148	391	.346555366	Prob > F =	0.0000	
				R-squared =	0.0865	
				Adj R-squared =	0.0770	
				Root MSE =	.56556	

ato	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
bsize	.0438713	.0133543	3.29	0.001	.0176151	.0701274
lnage	.1215924	.028669	4.24	0.000	.0652258	.1779589
lnassets	-.0506689	.0148458	-3.41	0.001	-.0798574	-.0214805
lev1	.2282821	.1264543	1.81	0.072	-.0203412	.4769055
_cons	1.015236	.3323176	3.06	0.002	.3618617	1.66861

Appendix 12. Screenshot from Stata of the non-linear regression model with ATO as dependent variable and busyness of insiders and outsiders as independent variables

```
. reg ato av_ins2 av_ins av_out2 av_out bsize lnage lnassets lev1
```

Source	SS	df	MS			
Model	14.7736548	8	1.84670685	Number of obs =	392	
Residual	120.729493	383	.315220609	F(8, 383) =	5.86	
Total	135.503148	391	.346555366	Prob > F =	0.0000	
				R-squared =	0.1090	
				Adj R-squared =	0.0904	
				Root MSE =	.56145	

ato	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
av_ins2	.0036912	.0020783	1.78	0.077	-.0003951	.0077776
av_ins	-.0689795	.0260286	-2.65	0.008	-.1201563	-.0178027
av_out2	.0000361	.0005869	0.06	0.951	-.0011177	.00119
av_out	-.0050311	.0167899	-0.30	0.765	-.038043	.0279807
bsize	.0440471	.0133169	3.31	0.001	.0178637	.0702305
lnage	.1208469	.0285154	4.24	0.000	.0647807	.1769132
lnassets	-.0345245	.0159895	-2.16	0.031	-.0659626	-.0030864
lev1	.220852	.1258796	1.75	0.080	-.0266497	.4683537
_cons	.6910627	.3517758	1.96	0.050	-.0005909	1.382716

Appendix 13. Screenshot from Stata of the non-linear regression model with ATO as dependent variable and busyness of insiders and outsiders (with division into connected and not connected companies) as independent variables

```
. reg ato av_ins_subs2 av_ins_subs av_ins_nosubs2 av_ins_nosubs av_out_subs2 av_out_subs av_out_nosubs2 av_out_nosubs
> subs bsize lnage lnassets lev1
```

Source	SS	df	MS			
Model	18.2923041	12	1.52435868	Number of obs =	392	
Residual	117.210844	379	.30926344	F(12, 379) =	4.93	
Total	135.503148	391	.346555366	Prob > F =	0.0000	
				R-squared =	0.1350	
				Adj R-squared =	0.1076	
				Root MSE =	.55611	

ato	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
av_ins_subs2	.0020068	.0022278	0.90	0.368	-.0023736	.0063872
av_ins_subs	-.0454032	.0284128	-1.60	0.111	-.1012696	.0104633
av_ins_nos~2	.0352262	.0198053	1.78	0.076	-.0037159	.0741682
av_ins_nos~s	-.19861	.0901251	-2.20	0.028	-.375818	-.0214021
av_out_subs2	-.0004834	.0006077	-0.80	0.427	-.0016782	.0007114
av_out_subs	.012553	.0178633	0.70	0.483	-.0225706	.0476766
av_out_nos~2	-.0120753	.0129406	-0.93	0.351	-.0375196	.013369
av_out_nos~s	-.0083626	.0631928	-0.13	0.895	-.132615	.1158898
bsize	.0484407	.0133923	3.62	0.000	.0221081	.0747733
lnage	.1217434	.0285531	4.26	0.000	.0656011	.1778857
lnassets	-.0333127	.0162683	-2.05	0.041	-.0653002	-.0013253
lev1	.2654297	.1258003	2.11	0.036	.0180758	.5127837
_cons	.6270154	.3554879	1.76	0.079	-.0719603	1.325991

Appendix 14. Screenshot from Stata of the baseline model with SGA ratio as dependent variable

```
. reg sga bsize lnage lnassets lev1
```

Source	SS	df	MS			
Model	1.47795634	4	.369489086	Number of obs =	410	
Residual	14.1349078	405	.034901007	F(4, 405) =	10.59	
Total	15.6128642	409	.038173262	Prob > F =	0.0000	
				R-squared =	0.0947	
				Adj R-squared =	0.0857	
				Root MSE =	.18682	

sga	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
bsize	-.0118936	.0044958	-2.65	0.008	-.0207316	-.0030556
lnage	-.028125	.0093071	-3.02	0.003	-.0464213	-.0098288
lnassets	-.0081018	.005006	-1.62	0.106	-.0179427	.0017392
lev1	-.1206209	.0421262	-2.86	0.004	-.2034342	-.0378076
_cons	.5765325	.1086566	5.31	0.000	.3629312	.7901339

Appendix 15. Screenshot from Stata of the non-linear regression model with SGA ratio as dependent variable and busyness of insiders and outsiders as independent variables

```
. reg sga av_ins2 av_ins av_out2 av_out bsize lnage lnassets lev1
```

Source	SS	df	MS			
Model	2.02886882	8	.253608603	Number of obs =	410	
Residual	13.5839953	401	.0338753	F(8, 401) =	7.49	
Total	15.6128642	409	.038173262	Prob > F =	0.0000	
				R-squared =	0.1299	
				Adj R-squared =	0.1126	
				Root MSE =	.18405	

sga	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
av_ins2	-.0007939	.0006992	-1.14	0.257	-.0021684	.0005807
av_ins	.0140392	.0088928	1.58	0.115	-.0034432	.0315216
av_out2	-.0005297	.0001834	-2.89	0.004	-.0008903	-.0001691
av_out	.0172098	.0050755	3.39	0.001	.007232	.0271876
bsize	-.0130509	.0044596	-2.93	0.004	-.0218181	-.0042838
lnage	-.0281866	.0091806	-3.07	0.002	-.0462347	-.0101384
lnassets	-.0146443	.0052639	-2.78	0.006	-.0249926	-.0042959
lev1	-.1247109	.0415606	-3.00	0.003	-.2064147	-.043007
_cons	.7033259	.1134091	6.20	0.000	.4803753	.9262766

Appendix 16. Screenshot from Stata of the non-linear regression model with SGA ratio as dependent variable and busyness of insiders and outsiders (with division into connected and not connected companies) as independent variables

```
. reg sga av_ins_subs2 av_ins_subs av_ins_nosubs2 av_ins_nosubs av_out_subs2 av_out_subs av_out_nosubs2 av_out_no
> subs bsize lnage lnassets lev1
```

Source	SS	df	MS	Number of obs =	410
Model	2.10413359	12	.175344466	F(12, 397) =	5.15
Residual	13.5087306	397	.034027029	Prob > F =	0.0000
Total	15.6128642	409	.038173262	R-squared =	0.1348
				Adj R-squared =	0.1086
				Root MSE =	.18446

sga	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
av_ins_subs2	-.0007089	.000762	-0.93	0.353	-.0022069	.0007891
av_ins_subs	.0156522	.0099605	1.57	0.117	-.0039298	.0352341
av_ins_nos~2	-.0060246	.0066809	-0.90	0.368	-.0191589	.0071098
av_ins_nos~s	.0115757	.0309198	0.37	0.708	-.0492113	.0723627
av_out_subs2	-.0004241	.0001902	-2.23	0.026	-.000798	-.0000501
av_out_subs	.0137978	.0053908	2.56	0.011	.0031998	.0243959
av_out_nos~2	.0024791	.0042796	0.58	0.563	-.0059345	.0108926
av_out_nos~s	.011182	.020859	0.54	0.592	-.0298259	.0521898
bsize	-.0124501	.0045053	-2.76	0.006	-.0213074	-.0035928
lnage	-.0293659	.0092572	-3.17	0.002	-.0475651	-.0111667
lnassets	-.0146005	.0054408	-2.68	0.008	-.0252969	-.0039042
lev1	-.1344392	.042205	-3.19	0.002	-.2174125	-.051466
_cons	.7053719	.1166589	6.05	0.000	.4760255	.9347183