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THE ROLE OF CORPORATE GOVERNANCE IN MERGERS AND ACQUISITIONS: HOW BOARD STRUCTURE AFFECTS M&A PERFORMANCE

Master's Thesis by the 2nd year student
Concentration — International management
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ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ

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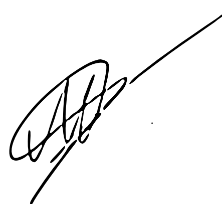

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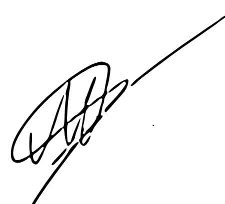

АННОТАЦИЯ

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Описание цели, задач и основных результатов	Данное исследование посвящено изучению влияния структуры совета директоров на результативность сделок слияния и поглощения. Данная работа фокусируется на фармацевтической индустрии, что объясняется возросшим количеством сделок слияния и поглощения за последние несколько лет. Основной целью магистерской диссертации является анализ взаимосвязи между разными компонентами структуры совета директоров и результативностью сделок слияния и поглощения. Для выполнения данной задачи было сформулировано 4 гипотезы и построены регрессионные модели. Результаты анализа показали, что размер совета директоров отрицательно влияет на результативность сделок слияния и поглощения, в то время как независимость его членов - положительно. К тому же, было обнаружено, что совмещение постов генерального директора и члена совета директоров имеет отрицательное влияние на результативность сделок. Базируясь на результатах, были предложены практические рекомендации.
Ключевые слова	Сделки слияния и поглощения, совет директоров, структура совета директоров, фармацевтическая индустрия, корпоративное управление.

ABSTRACT

Master Student's name	Maxim Sevastyanov
Master Thesis Title	The role of corporate governance in mergers and acquisitions: How board structure affects M&A performance
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Academic Advisor's Name	Yulia B. Ilina
Description of the goal, tasks and main results	The following work is dedicated to researching the correlation between structure of board of directors and performance of mergers and acquisitions deals. The research focuses on pharmaceutical industry because of the high growth of M&A deals during last years. The main goal of this master thesis is investigate empirically the impact of composition and structure of the board of directors on the return of companies after M&A deals. For this aim four hypotheses were proposed and regression models were build. The statistical analysis has shown that board size negatively influences M&A performance, while board independence positively. Moreover, CEO duality has negative effect on performance of M&A. The study also includes recommendations for future researches and managerial implications.
Keywords	Mergers and acquisitions, board of directors, board structure, pharmaceutical industry, corporate governance.

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ABBREVIATIONS

AR	Cumulative abnormal return of the acquirer company
CAR	Cumulative abnormal return
FY	Fiscal year
M&A	Mergers and acquisitions

INTRODUCTION

Mergers and acquisitions (M&A) have become important tools to respond to the increasing global competition, rapid expansion into foreign markets and the economic survival of firms. In order to remain competitive and to increase profitability, corporations around the world are actively trying to develop new competences and opportunities through M&A. Many of the managers believe that bigger is better and try to achieve growth by organic means or through M&A. For instance, the rationale behind conglomerate mergers has been explained and described as managerialism theory. It has been argued that leaders / managers are motivated by growth because their compensation depends on the size of the enterprise. However, organic growth of the company does not satisfy rapid-growth ambitions of managers, so they take M&A as a source of rapid growth.

There are two broad reasons for the companies to chose the strategy of M&A. The first and most common motive is expected synergies and efficiency gains, mainly the creation of value. The second motive arises from pursuing personal benefits from the acquisition of target firms. M&A deals which are in line with the second motive do not create value for shareholders, and can even destroy value.

Therefore, the main aim of this master thesis is to investigate a relationship between the structure of the board of directors and the operational performance of the firms following the M&A deal. In order to achieve this goal, this study has the following objectives:

- Make an analysis of previous studies to discover linkages between board characteristics and M&A performance
- Conduct an empirical study in order to point out the specific board characteristics which have significant effects on the cumulative abnormal returns of the firm around M&A
- Provide research and managerial implications

Choice of the industry

The current research is focused on the companies from pharmaceutical industry that can be explained by the following reasons:

1. The industry is global in nature and engages in M&A activity extensively. According to analysts, by 2020 the volume of the global pharmaceutical market will double to $ 1.8 trillion, which makes the sector particularly attractive for all players in this market (PwC Report, 2016).
2. The global nature of the industry means that findings of the researches considered pharmaceutical industry have broad applicability and can be widely used by different representatives of this industry.

3. For the last years the amount of M&A deals and their monetary value between companies from pharmaceutical industry have dramatically increased. According to Global M&A Report Pharma / Biotech 2015, the cumulative total transaction volumes of M&A deals of companies from pharmaceutical industry more than doubled in 2014 year in comparison with 2013. This fact proves the relevance of the topic in the present moment.
4. Quantity of researches dedicated to connections between M&A and corporate governance of the companies is increasing but still limited. Therefore, studies related to this topic will significantly contribute the existent pool of knowledge.

Structure of the paper

The study has the following structure. The first chapter of the thesis is dedicated to the academic literature overview. In this chapter there is an analysis of theoretical perspectives on the relationships between board of directors and M&A performance, together with the explanation of the agency theory, which is inherent in this type of transactions. Also, the hypotheses formulation will be based on the findings discussed in this section. The content of the second chapter is related to empirical study and includes methodology, description of the data, together with sources, variables description, regression analysis and finally results and following discussion. The third part includes analysis of the results. And finally, fourth part consists of discussions, suggestions for the future researches and recommendation for managers about implementation of the results on practice.

The findings of the study will be highly valuable not only for researchers, but also for practitioners. There will be provided managerial implications based on results of the study, providing recommendations to the managers with respect to the most appropriate board structure for the following M&A deal.

This study contributes to the theoretical knowledge base by providing an analysis of operational performance of the companies not from the market based perspective, but rather from operational side, which is not well researched area by far.

The overview of theoretical literature in this chapter is based on international scientific publications in well known, credible academic journals on finance, economics, and corporate governance. In order to gather data for empirical part, such databases as Thomson Reuters One and ZEPHYR have been used.

CHAPTER 1. THE BOARD STRUCTURE AND M&A PERFORMANCE

1.1 Theoretical context: mergers and acquisitions (M&A)

Mergers and acquisitions (M&A) refer to the integration of firms. A merger is a combination of two firms that want to form other new company; an acquisition is the purchase of one company by another in which no new firm is created.

According the definition of Seth (1990, p.9), acquisition is «the purchase of one business or company by another business entity». Particular assets, division or whole firms can be called the acquisitions. The mergers represent the process when the assets of the selling company are engrossed by the company-buyer. M&A process is a very comprehensive process with different dimension impacting the outcome for the company-acquirer (target firm).

Types of M&A

M&A can be divided into three groups in accordance with their specific characteristics:

1. Horizontal type – this type of M&A occurs in the situation when the company-acquirer or target firm represents the competing companies in the same industry or business area. Nowadays the amount of horizontal M&A rapidly increases because of the global restructuring of some industries by reason of grow of innovation in technologies and liberalization of the markets. According to PwC report, this tendency is common for such industries as pharmaceuticals, automobile, petroleum (2014).
2. Vertical type – this type of M&A includes firms that produce different types of product or services for one particular finished product. Vertical M&A helps to raise efficiency of supply chain that can bring high profits for the company-acquirer. Some scholars found evidences of related industry characteristics of the use of vertical type of M&A within a specific industry. Companies in industries that tend to use vertical type of M&A usually have a lot of innovations and strong system of property rights (Frésard, Hoberg, Philips, 2013). It is also important to mention that vertical mergers are positively related to maturity of the industry. Companies try to avoid vertical mergers when they belong to the young industries. Nevertheless, the use of vertical mergers significantly increases when the industry is more stable. This situation can be explained by the specific characteristics of supply chain. Vertical mergers usually related to high fixed costs because they are usually the result in reorganization. Firms that characterized with undeveloped supply chain do not tend to use vertical mergers because possible return is not comparable with the risks.

3. Conglomerate type – this type of M&A happens between companies from not related business areas (Dyer, Kale, Singh, 2004). This type of M&A usually generates less value to shareholders because it happens with not strategically related firms.

Drivers of value and reasons for M&A

Currently different types of mergers and acquisitions (M&As) are actively used by companies of various types. This activity is becoming more and more widespread and according to the World Bank statistics (2014), the total dollar volumes of M&A transactions more than doubled during last 10 years. There exist different motives for companies to engage in M&A, but the most common one is linked to the growth strategy. So, when company is not expanding fast enough by internal means, often times it undertakes the external expansion strategy, which involves acquiring another company within the operating industry or in certain instances (mostly due to diversification) outside the company's industry.

According to business studies, the main motive of usage of M&A strategy is the aspects that help the company-acquirer to expand and achieve strategic corporate goals, for instance, improvement of financial performance (Gaughan, 2005). There are three main value drivers of M&A: synergies, management involvement and the role of value investing (Campa, Hernando, 2004). These scholars also notice that common motives of companies' usage of M&A strategy are «the elimination of duplicate activities and cost reduction». This is usually can be achieved using economies of scope and scale (Harrisson, Hitt, Ireland, Best, 2011). As for economies of scale, it relates to decreases in unit costs of a product that happens because of raised size, often as a result when the fixed costs are distributed over a large number of outputs. Other result of economy of scale – decrease of overlapping cost between different kinds of activities in the company, raising efficiency.

As for economies of scope, it relates to the process that makes it much cheaper for the firm to produce different products together rather than produce each product separately. M&A helps the acquiring company to increase its market share and decrease competitive rivalry.

Another important motive of M&A is diversification that decreases an investor exposure to company-specific risk and gives a hedge against different risks in earnings volatility. «Diversification through acquisitions also provides an efficient way to enter a new market and new lines of business» (Sudarsanam, 1995).

Besides the reasons explained above, the following motives exist:

- Synergy effect, attain by the economies of scope and scale, together with high cost savings attained by the increased output.
- Diversification advantages with lower cost of capital.

- Mitigation of agency problem by the means of replacing less efficient managers with more talented ones.
- Hybrid motives. Managers' personal motives, as stated by Roll (1986), expressed in the personal gains of the management from M&A deals, which are of much higher importance than economic gains of the acquiring company.

In general, M&A strategy relates to the ability of the companies to unite and generate more value in cooperation. Typically, M&A deals take one of the following forms (Goold, Campbell, 1999):

1. Shared know-how
2. Shared tangible resources
3. Vertical integration
4. Coordinated strategies
5. Pooled negotiating power
6. Combined business

Shared know-how designated how the firm is able to achieve better results by uniting some insight, knowledge and capabilities about processes. It can lead to improvements of internal efficiency. The new former entity after last merger can raise its efficiency and increase the competitiveness through coordinating two units that were separated before. It is extremely important because it provides additional access to critical, strategically important resources and capabilities. The company-merger can also share the markets into different units with the aim to decrease competition between units and strengthen competitive place (Goold, Campbell, 1998). As for tangible resources and vertical integration, these forms are very similar to the phenomena of economies of scope and scale. Another form of M&A is pooled negotiating power when the company-merger has a greater bargaining power and more leverage over stakeholders (customers, suppliers). This is usually to result in better quality and reductions of costs of products that were purchased. The last form is coordinated strategies that help to improve financial performance by extracting activities from some of the units in the new firms and uniting them into other units (Goold, Campbell, 1998).

1.2 Corporate governance and M&A deals

Analyzing the quality of corporate governance in the context of M&A deals it is important to pay attention to not only the efficiency of transactions, but also on the agency conflicts within companies. In addition, it is required a detailed study of corporate governance in the context of M&A deals.

The theory of agency conflicts and corporate governance has been studied by many scholars such as Coase (1937), Jensen, Meckling (1976), Fama and Jensen (1983). The main factor of agency problem is a significant control over the distribution of funds to investors, shareholders, managers of the company. In addition, it is possible expropriation of shareholders' equity, which takes different forms. One of the forms of the expropriation of shareholders' funds is the activity of managers, aimed at consolidating its position. This situation is described in the work Shleifer and Vishny (1989), who showed that the expropriation of the shareholders' equity as an agency problem leads to the deterioration of the situation, both for shareholders and for the company's managers.

In general, agency theory is the fundamental theory of corporate governance that states that in modern companies' managerial action often diverge from the main objective of constant maximization of shareholder return (Donaldson, Davis, 1991). According to agency theory, the managers are the agents of the company and the owners are the principals and managers are agents and there is «an agency loss which is the extent to which returns to the residual claimants, the owners, fall below what they would be if the principals, the owners, exercised direct control of the corporation» (Jensen, Meckling, 1976). Agency theory also argues that board of directors is the strong mechanisms that regulate and even align the competitive interests between managers and owners of the company (Fama, Jensen, 1983; Barosso and et. al. 2011). Therefore, from this theory the following conclusion can be made: the board with the big number of members can perform greater control than boards with small members (Frooman, 1999; Donaldson; 1999).

The main goal of agency theory is to determine and find the main mechanisms that maximally decrease agency loss. Among these mechanisms are schemes of initiatives for managers in order to motivate them to increase the shareholder returns and work guided by the interest of shareholders (Eisenhardt, 1989). These schemes in many cases consist of plans, when senior executives receive the opportunity to buy shares at a substantially lower price (Jensen, Meckling, 1976). Another scheme when the executive compensation directly depends on firm's performance and shareholder returns or when the wages adjourned to the future to reward long-run value maximization of the firm and hold short-run executive action which harms corporate value (Donaldson, Davis, 1991).

In order to prevent opportunistic behavior of executive managers, shareholders often carefully monitor and control their actions (Williamson, 1985). In this situation board of directors becomes the main mechanism that is able to control the actions of managers on behalf of shareholders. The impartial monitoring can take place only when chairperson of the board is

not the executive manager. In the situation when chairman or member of the board is the part of executive team objective is questioned.

Agency theory states that in the situation when CEO of the company holds the dual role of the chair and at the same time is the part of management and board team, the interests of shareholders will give way to the interests of the managers in decision-making process (Donaldson, Davis, 1991). In this case the company has a lot of chances to face managerial opportunistic behavior and the agency will loss.

It is also important to mention that shareholders of the company have a variety of preferences for risk investment projects and M&A. In addition, as described by Johnand Senbet (1998), due to the diversification of risk the problem of lack of investment in high-risk and profitable projects or M&A can occur.

In addition, it is essential to focus on agency conflicts when discussing major and minority shareholders in decision-making on M&A deals.

Considering the previous research dedicated to corporate governance, Rosenstein and Wayy (1990) and Jensen (1996) indicated that the number of independent directors of the board of directors leads to more efficient operation of the company. On the other hand, Jenson (1986) noted that the board of directors has always taken the side of the managers in case of problems within the company. In this case, in order to increase the interest of management in increase of the company's value, the board of directors selects a stake or share options. McConnell and Servaces (1990) showed that the presence of the company's stock management increases the efficiency of their operations. For example, effective decision-making when investing surplus funds or carrying out M&A deals.

In addition to the independence of the board of directors, a key factor that influences the effectiveness of the company is the existence of institutional investors. Shleifer and Vishny (1989) argued that the large shareholders play an active role in corporate governance. It was found that the frequent change of CEO in the company linked to the major shareholders. However, the result is not final. It is also noted that banks have an incentive to monitor managers in making key decisions in M&A deals.

Some of the corporate governance mechanisms have already been studied in the context of M&A deals. The board of directors is responsible for making the decision on the M&A deals. Bacon (1985) suggested that the objectivity of the board of directors and business acumen are very important in the evaluation of proposals of these deals. In the empirical study Byrdand, Hickman (1992) and Cotteretal (1997) showed that an increase in the number of independent board members better effects on the efficiency of M&A deals. Moreover, Byrdand and Hickman

(1992) pointed to a non-linear relationship between the increase in the number of independent directors of the board of directors and the efficiency of M&A deals.

In addition to the study considered the structure and the size of board of directors, as well as the number of independent board members, Jensen and Meckling (1976) firstly discussed the relationship between the effectiveness of M&A deals and the shares belonged to members of board of directors. A related study conducted by Denisetal. (1997) demonstrated that if the CEO has the equity of the company it can lead to improvements in performance of M&A deals.

Moreover, in recent years, top managers of large companies receive large compensation and bonus packages with the increased interest for more effective investments, including M&A. On the other hand, Blissand Rosen (2001) and Grinstein and Hribar (2004) found no relationship between the interest of the top management, in the form of bonus packages, and efficiency of M&A.

Shivdasani (1993) analyzed institutional investors and noted that the presence of foreign investors in the company improves the monitoring of the actions of the company's management and decision-making in relation to M&A deals. Positive correlation between the presence of foreign investors and efficiency M&A deals was also found by O'Sullivanand Wong (1999). Studies that dedicate to analysis of correlation between corporate governance and the efficiency of M&A can be divided into several groups because they consider different aspects of corporate governance impact. In order to analyze the impact of corporate governance on the efficiency of M&A transactions it is necessary to provide the individual analysis of corporate governance characteristics.

1.3 Hypotheses formation

Internal corporate governance includes board of directors' characteristics, the characteristics of the CEO of the acquirer company and the impact of ownership structure on the efficiency of the firm.

Board of directors' characteristics

Characteristic of board of directors includes board size and the number of independent members of the board of directors.

In the context of corporate governance board size in many cases plays the crucial role (Fama, Jensen, 1993). There are two main explanations of connection between board size and company's performance. The first one considers board of directors as intermediaries that provide the firm with important resources (Fox, 1998, Barosso and et. al. 2011). The main idea of resource dependence view is that more people on the board can bring more bonuses and resources for the company in comparison with not numerous board of directors. However, this

concept has the serious disadvantage – it does not take into account the degree of influence and political affiliation of members of the board. But this factors in many cases play more vital role in procuring resource for the company.

The second concept is centralization of control. According to this explanation, boards with a lot of members are not as sensitive to the influence of CEO and managerial domination as boards with small number of members. This concept considers CEO of the company as the person which has a great impact on the company and actually makes all decisions independently.

The board size should ensure the balance between the advantages and drawbacks of increasing the number of board members. Another advantage of the emergence of new members and increase the board, in addition to those already identified (the more board – the more resources and bonuses its members can bring to the company; independence from CEO), is that «the capacity and experience that the new members can contribute to the body» (Rodriguez-Fernandez, 2014). Larger councils have the member with different experience, capabilities and because of it can significantly improve of process of taking strategically important decision.

Nevertheless, excessive number of people in the council often leads to problems in communication, coordination, misunderstanding and significantly slows down and complicates the decision-making process (Rodriguez-Fernandez, 2014).

In a lot of large companies top management is the part of board of directors. This fact may adversely affect the decision-making on payment of dividends, and as a result, can lead to agency conflicts and negative consequences as a reduction of cost of the company.

According to Liu (2013), coordination and communication between the board of directors and top management of the company is mainly dependent on the size of the board and the concentration of ownership in the top management. Therefore, the differences between the interests of the shareholders with a large board of directors may reduce the effectiveness of decision-making process. For instance, Liu (2013), found that the large size of board of directors negatively impacts efficiency of the company. Moreover, Rosenstein and Wyatt (1997) found the evidence that the amount of remuneration and efficiency of the company's management have backward nonlinear relationship. In other worlds, the greater the reward of the board, the less the value of the company.

As for optimal number of board members, Roll (1986) on the example of US public companies have come to the conclusion that the ideal size of board is five board members.

The study conducted by Dunn (1987) proposed the idea that large board of directors typically have good monitoring competencies and capabilities but at the same time large amount of board members creates such problems as asymmetric information and difficulties in communications. The similar position has researchers Yermack (1996), de Andres (2005),

Haniffa and Hudaib (2006) that believe that M&A deals and company's performance have conversely relationship with the size of board of directors.

Thus, the following hypothesis can be proposed:

Hypothesis 1: Performance of M&A deals and the size of board of directors are inversely related.

Independent directors on the board of directors play a key role in the whole system of corporate governance. As stated by Fama (1980), the presence of independent members of the board of directors affords to strictly control all board of directors and their decisions. Some researchers believe that a a higher proportion of independent members can improve decision-making process. Cotton, Shivdasani, Zenner (1997) found that level of stock returns 20% higher in a hostile takeover for the acquire when the number of independent members of the board of directors increases. Byrd and Hickman (1992) noticed that the number of independent board members have the ambiguous influence. The number of independent member of board of directors that 40% inclusive of the total composition has linear positive relationships with the efficiency of M&A deals, when the number equals 40-60% it has positive exponential relationship with the efficiency of M&A, and when number of independent member of board of directors is more than 60% the total relationship with the efficiency of M&A is negative (Byrd, Huckman, 1992).

Liang (2009) conducted empirical study on the developing capital markets and found that the appearance of independent members of the board of directors on one hand leads to better control of board of directors, but on other hand, the results of statistical studies have shown a significant negative effect on the market value of the company. Another study of Chinese scholars Zhigang and Xiuhua (2009) referred to the fact that the independent members of the board of directors of the companies in China improve supervision over the management of the company in order to improve the management - and as a consequence, result is in share capital. Qiang and Pan (2005) found that the higher the level of income of the company, the greater the proportion of independent board members.

According to the results of the previous studies, independent members of the board of directors improve monitoring of the activities of the company. In addition, the independent members of the board of directors contribute to improving the quality of decisions, including protecting shareholders from M&A, which ultimately can lead to a decrease in shareholders' wealth. Therefore, the following hypothesis was proposed:

Hypothesis 2: The number of independent members of the board of directors has a positive effect on M&A performance.

CEO duality

The company management plays a key role in the development of the company. At the same time, the company's leadership role has been criticized. Pi and Timme (1993) found evidence that, if the CEO and chairman of the board member do not occupy the same post, the value of the company is higher. The opposite result was Brickley et al. (1997). This situation is called CEO duality that means the combining the CEO position with the post of chairman of the board of directors.

Most of the classical studies reflecting the improvement in decision-making processes in the companies are made in developed capital markets such as Baliga, Moyer and Rao (1996) - in US, Finkelstein and D'Aveni (1994) - in France. On the other hand, the separation of the post of CEO and chairman of the board of directors often results in improvement of the efficiency of the company as a whole, and as a consequence, in improvement of the efficiency of M&A deals. Masulis (2007) in his study proposed the idea that the separation of the post of CEO and chairman of the board of directors in the company-acquirer helps to estimate more qualitatively the proposal about the deal.

However, the researchers have not reach the consensus about the impact of separation of the post on the efficiency of M&A deals. For instance, Coles (2001) found the negative influence of the separation of the post of CEO and chairman of the board of directors on M&A while Heracleous (2001) and Adams (2005) found positive relationships. Raluca-Georgiana (2013) used data from the Romanian companies in order to identify the correlation between CEO duality and indicators of company's efficiency – return on asset (ROA) and return on equity (ROE). This empirical research has shown that the separation of the post of CEO and chairman of board of directors has a positive impact on business performance. Raluca-Georgiana (2013) came to the conclusion that the integrity of the information received by the board of directors, may be questioned in the separation of the post of CEO and chairman of the board of directors as a consequence of asymmetry when the CEO provides the information to the board of directors.

Fusheng (2008) analyzing the companies in China came to the conclusion that the lack of CEO duality decreases the company's risks. Nevertheless, CEO duality significantly accelerates decision-making process including M&A deals (Boyd, 1995).

Based on the Code of the Best Practice that was created in the Cadbury Report (1995), two scholars Vafeas and Theodorou (1998) made the conclusion that separation of two roles (CEO and member of board of directors) affords of the board to make the control function more effective. It can result in improvement of corporate governance. Moreover, the scholars noticed that in the situation when this two functions are combined it can have a negative influence of the independence of the board of directors in the company.

Vuyst and Ooghe (2001) have the similar position with Vafeas and Theodorou (1998). They noticed that majority of empirical studies in recent academic literature showed that separation of roles of CEO and member of board of directors is much better than combination of these two functions.

Based on the findings of Vafeas and Theodorou (1998), Vuyst and Ooghe (2001), the followings conclusion can be made: separation of functions of CEO of the company and member of board of directors affords the board of directors to perform their control function more effectively that, in turn, lead to improvement of M&A deals. For this reason, the following hypothesis was proposed:

H3: The efficiency of M&A deals for companies, where there is a CEO duality, is lower than for companies, where there is no CEO duality.

Board ownership

Previous studies claimed that the holding of shares by employees and board members gives them an incentive to work effectively and carefully monitor managers (Brickley et al., 1988). When officers and board have substantial reserves available (either direct holdings of shares or options on company stock) of the company, their decisions affect their own wealth. Moreover, the influence on the decision on their wealth is compounded when receiving shares or options is an integral part of their compensation package (Bothet a al.., 2002). Therefore, they are less inclined to take action that would decrease shareholder wealth. Vafeas and Thepdorou (1998) also believed that stock ownership of board members can significantly decrease the agency conflicts between member of the board and managers.

Other researchers Demsetz & Lehn (1985), in contrast with Vafeas and Thepdorou, did not find any correlation between board ownership structure and company's performance. Moreover, these scholars verify that there is hardly «any support with regards to the different interests between principals and their agents».

Another study, conducted by McConnel and Servaes (1990) found significant relationships between the percentage of stocks hold by insiders (company's executive directors) and Tobin's q. These relationships are curved and they show that Tobin's q that represents company's value becomes higher when at first the percentage of stocks held by executives increases, then it reaches an optimum and ultimately decreases. In addition, the ownership of equity by managers is likely to result in more entrenched managers leading to less effective corporate governance mechanisms (the board of directors) (Vafeas and Theodorou, 1998). Moreover, they argued that not only the ownership of equity of insiders (executives) has to be investigated, but especially emphasized the significance of stock ownership of non-executive board members that are outsiders.

The same reason about ownership of equity and executives can be related to non-executive directors. It means that a larger ownership in the firms (stocks) by non-executives in many cases lead to a better aligning between interests of shareholders and managers. Moreover, it is stated that rising stock ownership in relation to non-executives directors enhances director's independence and positively influences company value (Vafeas,Theodorou, 1998). In other study Hermalin and Weisbach (1991) came to the conclusion that the company value that is measured by Tobin's q is not correlated with ownership equity by non-executive directors.

Based on study conducted by Vafeas and Theodorou (1998) the following conclusion can be made: ownership of stocks by member of board of directors (both executive and non-executives) decreases agency conflicts between manager (or agents) and shareholders because they are unlikely to be involved in behavior that negatively influence wealth of shareholders. Therefore, the following hypothesis was proposed:

Hypothesis 4: Ownership by members of board of directors is positively related to the performance of M&A deals.

All proposed hypotheses are presented on the Table 2.

Table 1. Hypotheses

Hypotheses	Literature
H1: Performance of M&A deals and the size of board of directors in the companies are inversely related.	Yermack (1996), de Andres (2005), Haniffa and Hudaib (2006)
H2: The number of independent members of the board of directors has a positive effect on M&A performance.	Zhigang and Xiuhua (2009); Qiang and Pan (2005).
H3: The efficiency of M&A deals for companies, where there is a CEO duality, is lower than for companies, where there is no CEO duality.	Vafeas and Theodorou (1998), Vuyst and Ooghe (2001)
H4: Ownership by members of board of directors is positively related to the performance of M&A deals.	Weisbach (1991); Vafeas and Theodorou (1998)

Source: author

1.4 Mergers and acquisitions: performance measurement

Researches which focus on mergers and acquisitions attribute value creation to the change in shareholder value (Bruner, 2002). This notion means that a company's successful

performance in terms of M&A activity is measured by extent of financial enrichment of shareholders of both target and acquirer company. In the majority of cases this is measured by looking at changes in share price of the company. However, there exist some criticism to this approach, for instance by Campa and Hernando (2004), who claim that shareholder value can be considered as only a partial value created by mergers and acquisitions, this criticism most of the times is ignored due to its complicated nature.

Usually, a lot of studies in M&A field measure created value by relying on one of the four approaches which will be described below.

Executives surveying

A sample of executives is given a questionnaire with the hopes of being able to generalize the results of surveys into larger population. This method is prone to multiple errors and biases, one of them is low response rate, time-consuming nature and inability to study

Event studies

Event study approach is also highly popular in order to assess the effectiveness of M&A deals. This approach involves the collection of the stock price data and calculation of the abnormal returns for the event companies. There are possibilities of concentration on short-term together with long-term, however, all of them include the date of announcement upon the event date. This method is useful to detect how market reacts towards the information about the deal. The advantages are that this method is a direct measure of created value for investors and it is a forward-looking approach. The clear disadvantage is the fact about underlying assumption of the market efficiency, which does not always hold true. Among findings which were attained by using event study is the one discovered by Martynova and Renneboog (2006), where it has been found that there exists a positive effect of cross-border M&A deals within European companies on the stock performance of the companies – acquirers. It is critically important to note that in our study this approach is useless, since the focus is shifted towards the M&A aftermath and the subsequent operational performance of the company within the range of 2 years, not taking into account the market reaction.

The most common and frequently used method of evaluating the effectiveness of M&A transactions is the cumulative abnormal return (CAR) method. One reason for the prevalence of this method is characterized by the availability of the necessary information - stock price for the period of observation and information on market return. This method is based on the calculation of the cumulative abnormal return (CAR) during certain events (window) of interest, most of the time they are related to news, e.g. M&A announcement. In other words, this approach analyzes the market reaction to the announcement of M & A transactions. The actual return on the shares

of the acquirer company is calculated by the range of window event M&A transactions and is compared to the expected (normal) return, which would have taken place if there was no deal.

At the moment there are high quantities of researches devoted to the study of the efficiency of M&A deals using method of the cumulative abnormal return. However, studies on the quality of corporate governance in the context of M&A transactions are scarce.

Tse and Soufani (2001) tested the cumulative abnormal return for acquiring companies and target companies. In the findings of their research there were both large and small transactions in terms of their volume expressed in dollar amount. It should be noted that for large transactions cumulative abnormal return was positive for small - negative.

In the analysis of M&A deals related to a particular sector, Choi and Russell (2004), by analyzing cumulative abnormal returns, came to the conclusion that the amount of company's experience within a particular industry significantly improves the efficiency of M&A transactions and has a positive impact on the welfare of shareholders. Moreover, authors found no relationship between the method of payment and the efficiency of transactions.

During the research of the effects of corporate governance on the effectiveness of M&A deals, Megginson et al. (2004) have been using cumulative abnormal return as an indicator of M&A effectiveness. This study investigated the relationship between the degree of development of corporate governance and method of payment, using cumulative abnormal return on a long event window. The time frame used in this analysis was 3 years after the announcement of the transaction. According to the results of the regression analysis, the lower was the degree of development of corporate governance mechanisms and practices within a company, the lower was shareholders' wealth during the researched time frame (3 years), which corresponds to a reduction of 4%, and a decrease in operating cash flow by 1.2%. Moreover, it was found that financing transaction with cash improves deal efficiency over long-term horizon.

The quality of corporate governance in M&A transactions calculated using method of cumulative abnormal return was studied in different years by many researchers and it was found that the quality of corporate governance plays an important role in the efficiency of M&A deals. It should be noted that the degree of influence is different depending on the corresponding event window in terms of time frame.

In the study of corporate governance index in the context of M&A transactions in emerging capital markets, more precisely, on Indian companies, Neelam Rani, Surendra S. Yadav and PK Jain (2013) found that companies – acquirers with a high index of corporate governance are expected to have higher cumulative abnormal returns in the short run and a higher valuations after the M&A transaction period. The method of the cumulative abnormal return for the assessment of the effectiveness of M&A deals on Chinese market was used in the

research done by Yong Liu and Yongqing Wang (2013) together with an analysis of Tobin's Q. Yong Liu and Yongqing Wang (2013) found that board members ownership concentration is a restraining mechanism which discourages managers of the company from gaining returns at the expense of shareholders after M&A transactions.

Because of the pronounced advantages explained earlier coupled with high popularity of this research method among scholars of M&A area, event study was chosen as a method for this research.

Accounting studies

This type of studies concentrates on the comparison of financial metrics of companies prior to M&A deal with those after M&A deal. The following financial metrics are used in majority of cases: cash operating income, cash flow return, gross profit margin, operating profit margin, net worth and net income. The strong sides of this method include the high levels of credibility, since all the data are publicly available and extensively checked by various auditing agencies. It is also widely used by different investors in order to assess the corporate performance by looking at the value creation. Another advantage of the accounting method is its simplicity and easiness in finding necessary data. However, there exist certain disadvantages associated with this method, for instance it completely ignores the intangibles.

Heron and Lie (2002) have been conducting a research on the influence of method of payment in M&A deals on the subsequent operational performance, however, no relation between method of payment and M&A performance was found. Also, it is highly important to mention the research of Mantravadi and Reddy (2008), which relies on the financial reports to assess the performance of M&A deals and can be described as an accounting study. This research was based on the analysis of operating profit margin, gross profit margin, net worth and net income. The abovementioned authors were investigating the relationship between the financial results and M&A deals and influence of the company size on M&A performance. One of the main findings of their research was that the company size positively influences M&A effectiveness.

Another research which has also great significance in terms of the contribution to the scientific knowledge of corporate governance within the context of M&A deals is the one conducted by Jiangna Liuand Zhao (2012) on Chinese market. Authors of this research were analyzing long-term financial performance of the company after M&A deal and the role of corporate governance, taking into account such financial performance criteria as operating cash flow return on assets. The findings of this research indicate that increase in the board size over a certain quantity has negative influence on the long-term M&A performance. Concerning CEO duality and quantity of independent board members, there was no significant evidence found in

favor or against these variables. However, it was found that the presence of large state block holder negatively influence long-term M&A effectiveness. Authors of this research attribute last finding to the nature of Chinese political environment and legislature.

Cumulative abnormal returns for acquiring and target companies

The evidence from more than 130 event studies that occurred from 1972 to 2001 was summarized by Brunner (2002). The conclusions of this summary is consistent with the notion that shareholders of target companies on average enjoy significant positive returns, despite high variations in some variables, such as industry type, time span of the event and method of cumulative abnormal return measurement. The findings of this summary are in line with previous researchers, such as Sudarsanam and Mahate (2003). The average cumulative abnormal return reported in before mentioned studies equals between 20-30%, ranging from 7,5% to 41,6%.

In contrast to the findings of multiple researches on returns of target companies, researches concerning return generation for acquirers are not as consistent and did not reach a consensus. Studies are split approximately on half which claim positive abnormal returns and half which claim negative abnormal returns for acquirers. Bruner (2002) has made a summary of 41 studies, concluding that 20 studies indicated negative yields floating around 1-3% and also 13 out of those 20 companies showed statistically significant negative results. However, 24 studies, slightly higher number than average showed positive yields with 17 out of 20 having statistically significant positive yields. So, it would be fair to admit that average abnormal returns for the shareholders of acquirers on average equals around zero percent.

1.5 Effects of industry specifics on value creation from M&A

The literature on the relationships between industry condition and gains in returns from M&A is not abundant and Huyghebaert et al. (2013) were the first researchers to discover industry characteristics which have influence on the value created as a result of M&A. The results of their study were indicating that there is statistically significant positive relationship between industry conditions and created monetary value for shareholders as a result of mergers and acquisitions. The following industry characteristics are described in the above mentioned research: sales concentration within a particular industry, degree of foreign competition, operating spread of industry participants, sales growth of an industry, technological intensity and degree of deregulation.

Harford (2005) claims that there exist certain industry characteristics which have an influence on M&A activity, for instance, mergers and acquisitions have much lower probability of occurrence within industries which are dominated by large companies. Normally, it would be expected that acquisitions conducted in highly concentrated industry would help to exercise

market power and create more value to shareholders. However, it was discovered by Huyghebaert et al. (2013) that contrary to common sense, sales concentration within an industry, which in other words can be described as uneven distribution of market shares between competitors within an industry, is negatively correlated to the amount of value created as a result of M&A. The reasoning behind this finding can be described as following. Mainly, high industry concentration often times results in lower efficiency due to a lessened market disciplining and as a result, stock returns of the companies within concentrated industries are lower than of those operating in fragmented industries. As stated by Berger and Hannan (1998), firms operating in concentrated industries are on average less innovative partly due to increased entry barriers and the lack of competition. Huyghebaert et al. (2013) claim that the quantity of potential acquirers is scarce within highly concentrated industries, which lowers the chances of a bidding competition and because of that, limited amount of potential acquiring companies result in an increased bargaining power. Moreover, not every deal in concentrated industries ends up being completed, due to the inspection procedures from antitrust authorities.

According to Marks and Mirvis (2001), competition from foreign firms significantly increases industrywide takeover activity. And partially due to this fact, industries which have high levels of foreign competition often have positive reactions of investors to M&A announcements, since mergers and acquisitions are perceived by investors as measures of collaboration between two firms with the aim to better face industrywide competition.

As noted by Huyghebaert et al. (2013), the relationship between value from M&A deals and industry sales growth follows U-shape, which means that industries that enjoy high value from M&A activities are the ones with very high and very low growth rates. The rationale behind this phenomenon is that investors are more enthusiastic about industries which have high growth rates, since firms in these industries are likely to take advantage of such growth by utilizing synergies which serves as a motivation for positive reaction. Investors' positive attitudes towards industries with low growth rates are similar to those with high growth rates. The reasoning behind this is explained by the nature of companies' behavior, where it is usually more complicated for firms from low growth industries to find new ways to grow and they are mostly focusing on cost reduction processes. Hence, mergers and acquisitions represent a simple and effective way for these firms to expand and achieve costs reduction and economies of scale. Thus, economic gains of M&A in such low growth industries are high.

As was stated by Lehto and Lehtorahta (2006), one of significant benefits that mergers and acquisitions activity delivers to companies is the transfer of intellectual capital with knowledge and know-how from one company to the other. Hence, when intangible assets such as knowledge and know-how which initially belonged to the target company are better utilized by

the acquiring company, then M&A deal created value. Also, Ahuja and Katila (2001) pointed out that M&A which happen in technologically intense industries often result in high costs savings and economies of scale for research and development (R&D) activities. This phenomenon is especially widespread among pharmaceutical and healthcare companies, since in some cases it is imperative in order to keep being profitable and efficiently deal with overhead costs associated with R&D activities. Moreover, as claimed by Huyghebaert et al. (20013), as a general rule, target companies in technologically intense industries often have more unique and valuable assets. As a consequence, these valuable and unique assets contribute to the target firms' increased bargaining power during negotiation processes. Due to the abovementioned factors, authors have stated that investors' reactions to M&A announcement in technologically intense industries are positive.

To sum up, the first chapter provides an overview of previous studies of corporate governance in the context of M&A deals. Literature review includes different methods of analysis of the effectiveness of M&A deals. In addition, corporate governance is considered in detail, both individually and in the context of M&A, as well as the agency conflicts in the case of M&A.

Moreover, based on the review of the previous studies dedicated to M&A deals and corporate governance, the conclusion that corporate governance and M&A deals are related to each other and different characteristics of corporate governance have an impact on the efficiency of M&A can be made.

CHAPTER 2. EMPIRICAL STUDY OF THE RELATIOSHIP BETWEEN THE BOARD STRUCTURE AND M&A PERFORMANCE

2.1 Research goals and questions

As was outlined previously, the main aim of this study is to investigate the impact of the composition and structure of the board of directors on the return of companies after the M&A deal. The main objectives of this master thesis are:

- Evaluate the impact of specific pre-M&A board characteristics of acquiring firms on M&A performance.
- Evaluate the impact of board structure as an internal corporate governance mechanism on M&A performance.

The study aims to answer on the following questions:

1. What are the board characteristics that affect the M&A performance?

2. What characteristic of the board of directors has the most impact on the M&A performance?

Answers on these questions can help to achieve the main goal of this research. Theoretical aspects of the issues were considered in the first chapter, in the second part practical aspects of the problem will be discussed.

2.2 Sample selection and data collection

The study focuses on merger and acquisition deals which occurred during 2010-2015 in healthcare and pharmaceutical industry. The choice of the years for the research sample is based upon the fact that since 2010 there has been a steady growth trend in M&A deals in pharmaceutical industry, compared to other industries worldwide. Pharmaceutical industry showed steady growth both in the number of M&A deals and in their corresponding monetary values. The final year of this sample is 2015, since it is the last year for which available accounting financial information can be found.

Primarily sample consists of 292 021 deals. The sample for the current research has to correspond the following criteria:

1. Deals corresponding to the time period FY 2010-2015;

2. Deal type: Acquisition, Merger;

3. Current deal status: Completed – confirmed

4. Company acquirer industry classification: Pharmaceuticals, Biotechnology and Healthcare

5. World region: North America (acquirer).

After the exclusion of the companies that do not match these criteria the final sample was created. It consists of 447 deals with 298 companies.

The data concerning variables related to the board of directors has been collected from the acquiring and target companies's financial reports, proxy statements and the information regarding the stock price is gathered through the statements of New York Stock Exchange (NYSE). Also, the following databases have been used in order to obtain information regarding M&A deals and board of directors: Thomson Reuters Datastream, Thomson Reuters Eikon, ZEPHYR Bureau van Dijk. However, if there has not been found any relevant information about the inquired company in these databases and in the proxy statements taken from period close to the M&A deal, this company was excluded from the sample. Merger and acquisition transaction which satisfied the following criteria were included in the sample:

- Completed transactions (not rumored or in process)
- Target firm and acquirer are both publicly traded
- The M&A dates correspond to the 2007-2013 time periods
- Only pharmaceutical industry firms (both target and acquirer) are included.

2.3 Methodology

Model

As described in Chapter 1, the majority of previous researches are based on the analysis of cumulative abnormal returns. Event study is a direct method of measurement of value creation for shareholders and each step of this process will be explained in more detail.

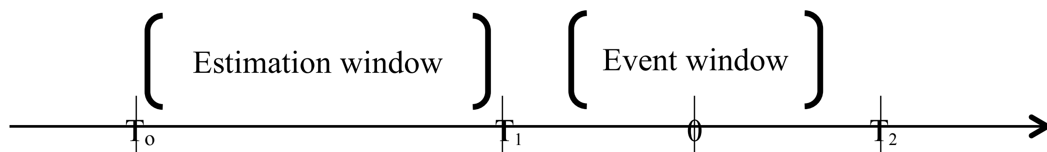
The first part of an event study concerns such aspects as the choice of an event, in our case it is an M&A announcement, event window selection (timeframe around the event studied, for which the stock returns will be calculated) and estimation window selection. All the dares on M&A announcement were gathered from the database Thomson Reuters Eikon.

An event window should be carefully chosen, depending on the magnitude and scope of an event. Thus, it is important that a length of an event window is sufficient enough in order to be able to react to the announcement. Also, it is important that any other events do not occur during an event window in investigation in order not to have an influence on the stock price, so an event window should not be too broad. In this research short-term event windows are chosen, since the potential effect from M&A announcement event is short term.

According to the research of academic literature provided in first chapter of this research, majority of authors use event windows between 21 days (Rosenstein and Wavy (1997), Joshipura (2009) and 3 days. Based on the nature of this study and reviewed literature it was decided to use 2 symmetrical event windows – 11-days event window (5 days before studied event and 5 days after) and 41-days event window (20 days prior to studied event and 20 days after). Those two windows correspond to the above stated criteria, so that event windows are broad enough to capture market reaction to the events and do not have high probability of catching any other significant events that can affect market prices.

Estimation window is schematically depicted in the figure below. It is highly important that an event window does not intersect with estimation window. Studied event is t = 0.

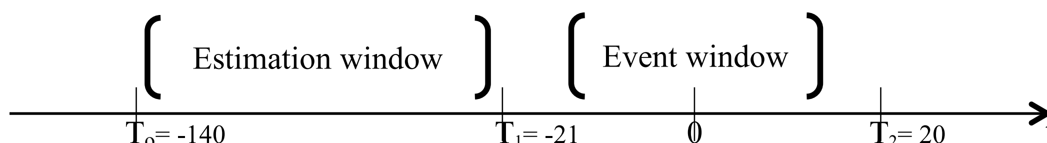
Figure 1. Estimation window



Source: author

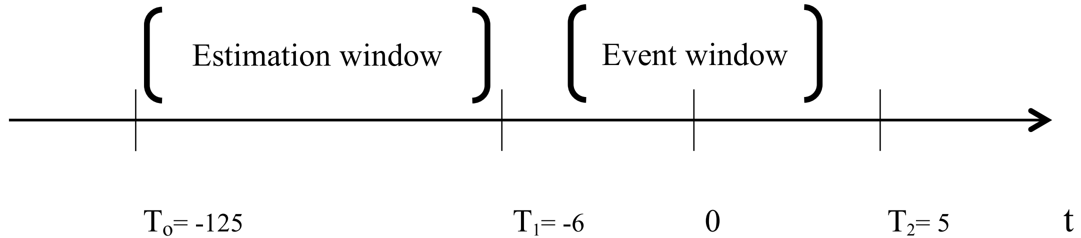
The choice of an estimation window time frame is also based on the literature review. In a classical research of event study's methodology, Peterson (1986) has stated that on average, there was between 100 and 250 days used by majority of scholars with respect to the estimation windows. In line with methodologies of many other similar works, the research made by Akbar, Baig (2010) has an estimation window of 120 days. However, there are some studies with higher estimation window time frames, it is also important to take into consideration the probability of using outdated date when taking too broad estimation time frames. On the basis of before mentioned rationale, estimation window in the present study equals 120 days. Thus, for the first event window (-20; 20), estimation window equals T_0 = -140, T_1 = -21, T_2 = 20 and for the second event window (-5; 5), estimation window equals T_0 = -125, T_1 = -6, T_2 = 5. Visual representation of the described event and estimation windows is provided in the figure below.

Figure 2. Estimation and event windows for time frame (-20; 20)



Source: author

Figure 3. Estimation and event windows for time frame (-5; 5)



Source: author

2. Second part of an event study concerns selection process of the sample of companies with corresponding stock prices, listing on a stock exchange and companies' market capitalization. More detailed description of the sample selection process is depicted in the previous sections.

3. This part is related to the estimation of normal returns and selection of the model. During this step, the model for the estimation of normal returns was chosen. Two types of models are statistical and economic, where the latter deals with constant mean returns, with the assumption that the daily return is constant and the former model and statistical model also includes market model, which compares the return on the market security with the return on the overall market. The latter – economic model deals with capital asset pricing model and arbitrage pricing theory. In this research market model for normal return estimation will be used:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \mu_{it,\ where}$$

R_{it} – period – t return on security i;

R_{mt} – period – t return on market portfolio;

$\mu_{it,}$ - zero mean disturbance term.

Regression analysis

The regression analysis was used in order to identify the impact of corporate governance on the efficiency of M&A transactions. The following equation of the regression was formed based on the previously described literature:

$$CAR_i = \beta_1 \text{board_s} + \beta_2 \text{board_i} + \beta_3 \text{ceo_d} + \beta_4 \text{p}ayment + \beta O + \alpha + \varepsilon_i$$

CAR_i – cumulative abnormal return of the acquirer company stock in each M&A deal;

i – index of each M&A deal;

β_{1-3} – corporate governance coefficients;

board_s – board size of the acquiring companies;

board_i – proportion of independent board directors in acquiring companies

;

ceo_d – combining the CEO position with the post of chairman of the board of directors of the companies-acquirers;

board_own - proportion of stocks held by members of the board relative to the total amount of shares outstanding

β_4 – control variables coefficients;

payment - the payment method in M&A transactions of companies-buyers;

firm_size – expressed as a natural log of total assets

α – constant;

ε_{it} – normally distributed random error.

Hence, linear regression equation on the influence of corporate governance factors of the performance of M&A deals, inspected in short-term cumulative abnormal returns. Also, control variables are added to the equation. The necessity of control variables and reasons behind choosing particular ones are described earlier in this chapter.

Described above linear dependence allows testing our hypotheses, providing the level of influence of individual corporate governance factors on the M&A deals performance. Corporate governance coefficients with their corresponding meanings are described below.

Coefficients of corporate governance factors:

board_s - the size of the board of directors of acquiring companies;

board_i - the number of independent members on the board of directors of the acquiring companies;

ceo_d - combining the CEO position with the post of chairman of the board of directors of the companies-acquirers.

It is important to note that researchers using different models for the estimation of normal returns did not find substantial difference between the models used on the short-time window of studies.

Variables

Dependent variable

As was mentioned in the first chapter, one of the most effective method of evaluation the effectiveness of M&A is cumulative abnormal return (CAR).

Cumulative abnormal return is calculated using the following formula:

$$CAR_i = \sum_{i=1}^{T} AR_{it}$$, where

CAR_i – cumulative abnormal return of the acquirer company stock in each M&A deal;

AR_{it} – cumulative abnormal return of the acquirer company stock in each M&A deal of each day of an event window;

T – event window which is used for calculation of cumulative abnormal returns.

The following formula is used for cumulative abnormal return calculation for each M&A deal within an event window:

$$AR_{it} = R_{it} - \alpha_i + \beta_i * R_{mt}$$, where:

R_{it} – real adjusted stock return on acquirer company stock;

R_{mt} – overall market index return;

α_i, β_i – coefficients which are calculated based on the market model.

The process of calculation of coefficients α_i, β_i, which are used in cumulative abnormal return calculation, was done by the means of regression analysis in MS Excel based on the acquirer stock return and return on the S&P500 index. The estimated window excludes any shocking events which have an influence on the return on the stock of the acquirer company. The regression analysis was made in order to identify coefficients on the estimation window (-140; -21) for the first instance and on the window (-125; -6) for the second.

Independent variables

A great amount of attention in academic literature has been given to some board structure variables, such as board independence, board size, CEO duality and board ownership. That is, for instance, Abidin, Kamal & Jusoff (2009) in their analysis of relationship between board structure and corporate performance of Malaysian firms, utilized all abovementioned variables. In this research all four variables will be measured by the following criteria:

1. Board size variable (BS) will be calculated based on the total quantity of both executive and non-executive directors comprising the board.

2. Board independence variable (BI) will be measured by calculating the percentage of independent directors out of the total number of directors sitting on the board. It is viable to distinguish the three categories of directors: 1) insider management directors, who are employees with a salary, such as CFO or CEO; 2) affiliated outside directors with business or personal relationships with the company, such as retired executives and family members. 3) fully independent directors who do not have any business or personal relationships or connections with the company. The proportion of the third category to the rest is the focus in this study.

3. CEO duality variable (Dual) will be assessed by discovering whether the chairman of the board of directors of the focus company is simultaneously the CEO of the same company. This variable is represented by the binary system, such as the number 1 will be given to the company which has its chairman of the board also as the CEO, and zero if not.

4. Board ownership variable (BO) will be measured by calculating the proportion of the dollar value of common stocks held by the members of the board of directors relative to the total number of shares outstanding.

Control variables

The abovementioned regression models will be controlled for the following control variable: firm size, which is the market value of the company, measured by the logarithm of company's total sales. This control variable will be averaged for the period of two years prior to the merger. Another control variable is the method of payment, which can be an effective determinant of the subsequent M&A performance and value creation, as stated by Brunner (2002).

All variables and the ways of their measurement are represented in the Table 1.

Table 2. Variables

Dependent variable	Independent variables	Control variables
1. **Cumulative abnormal return** (CAR) (in accordance with many other academic studies, CAR is expressed in percentage points and the following event windows for CAR calculations were used: (-20; 20) and (-5; 5))	1. **Board size** (the total quantity of both executive and non-executive directors comprising the board) 2. **Board independence** (the percentage of independent directors out of the total number of directors sitting on the board) 3. **CEO duality** (represented by the binary system, such as	1. **Firm size** (logarithm of total sales) 2. **Method of payment** (dummy variable: cash-only deals -1; deals financed by stock or/and debt – 0)

	the number 1 will be given to the company which has its chairman of the board also as the CEO, and zero if not) 4. **Board ownership** variable (the proportion of the dollar value of common stocks held by the members of the board of directors relative to the total number of shares outstanding)	

Source: author

CHAPTER 3. FINDINGS AND DISCUSSION

3.1. CAR characteristics on event windows

Upon conducting analysis of cumulative abnormal returns for event windows (-20; 20) and (-5; 5) the following data has been received, which is shown in the table below.

Table 3. CAR event windows analysis.

Event windows CAR	Average CAR	Min CAR	Max CAR
CAR (-20;20)	2,63%*	-20,82%	35,54%
CAR (-5;5)	-0,24%**	-16,72%	24,18%

* - significance level 1%,
** - significance level 10%
Source: calculations made in Stata

Analysis of the cumulative abnormal return (CAR) for two event windows shows that on greater event window companies' return compared to that of a market tends to increase after the announcement of M&A deal. Although, on short event windows the value for CAR is negative, the significance level does not allow drawing correct conclusions. Hence, the most meaningful event window in our study is CAR (-20; 20), having the highest number of significant variables on 1% significance level. Therefore, in order to analyze how corporate governance factors influence M&A performance, measured as cumulative abnormal returns on a specified event window, it was decided to use event window (-20; 20) since this regression was significant on 1% level, compared to event window (-5; 5) and it also has the highest number of statistically significant variables.

3.2. Multicollinearity check.

For further analysis of regression it is required to carry out checks on multicollinearity of independent variables. Results for multicollinearity test are provided below.

Table 4. Multicollinearity.

	Board size	Board independence	CEO duality	Board ownership	Payment method	Firm size
Board size	1,000					
Board independence	,167	1,000				
CEO duality	,018	,124	1,000			
Board ownership	,104	,252	,211	1,000		
Payment method	,142	,269	,078	,079	1,000	
Firm size	,103	,105	,244	,237	,289	1,000

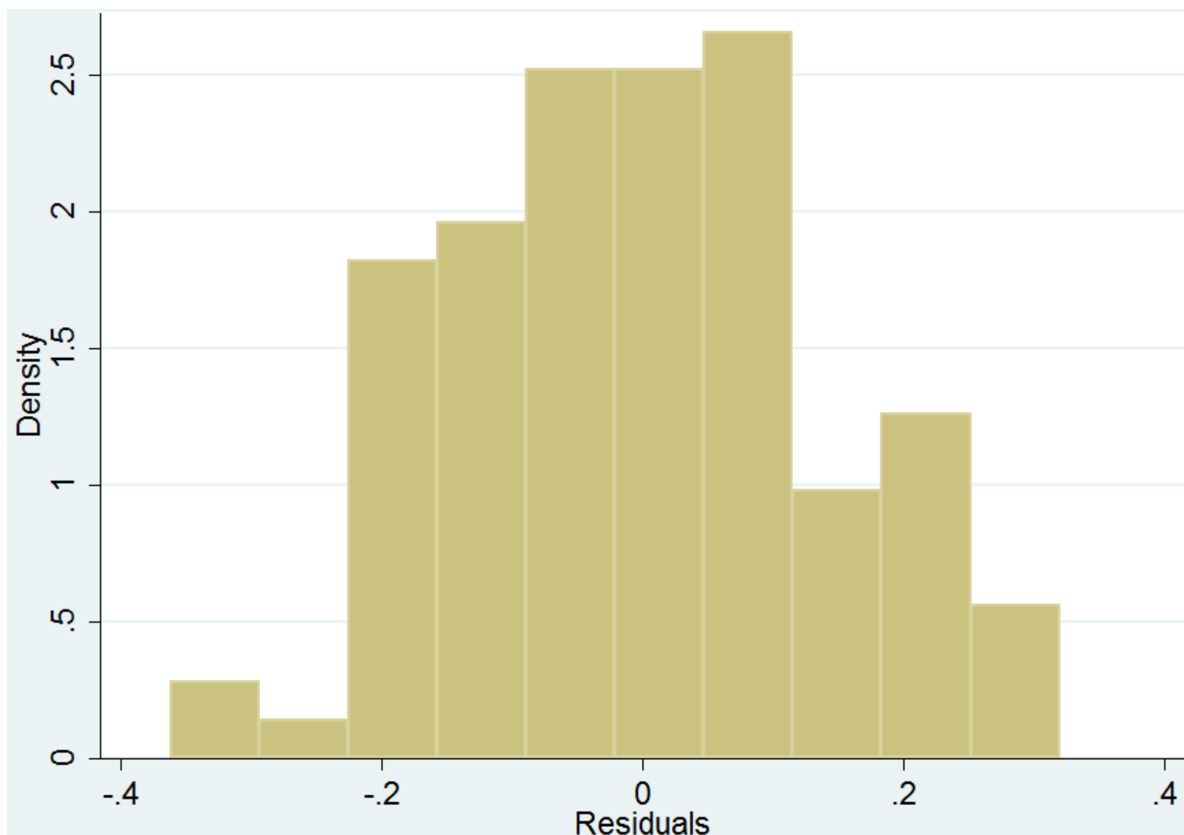
Source: calculations made is Stata

Correlation levels of variable data do not exceed normal values, which is evidence of absence of multicollinearity. In addition, it is worth noting that the variables firm size (the size of the company valued by total assets) and payment method (dummy variable, related to the form of payment in M&A deal) have the level of correlation of 0.289, which is acceptable. In addition, the level of correlation to other independent variables does not exceed 0.289.

3.3. Analysis of residuals and normality test.

Together with regression, analysis of residuals and the normality check were conducted. As it can be observed from the graph below, residuals distribution is normal without any serious deviations. Although it can be noted that distribution is shifted towards the left side, it does not distort the regression results and is not overall significant.

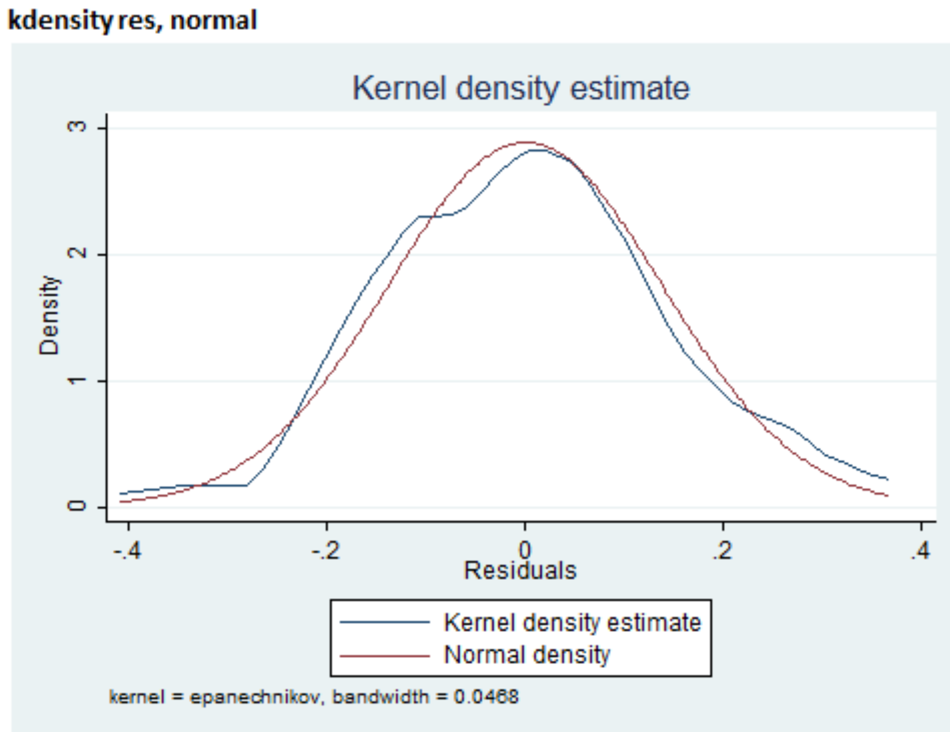
Figure 4. Residual plot.



Source: author

Also, normality test was conducted and upon observing the graph underneath, it can be concluded that

Figure 5. Normality test.



Source: author

3.4. Regression analysis

Data on the final regression analysis is provided below for CAR (-20; 20) event window, as it was stated before, since this event window is significant compared to event window (-5; 5). This regression is statistically significant independent variables board_i (the number of independent members of the board of directors), ceo_d (combining the post of general director and chairman of the board of directors) and payment (payment method in M&A transactions). This reached statistical significance at the 1% level. As can be seen from the figure below, it is valid and is 22.21% for the full regression. Regression coefficients of the variables are provided below.

Table 5. Coefficients of regression variables

F criteria significance level	3,13%
R^2	23,21%
Variable	Coefficient
Board size	-0,0140631
Board independence	0,3145038
CEO duality	-0,0724015
Board ownership	0,0003278
Payment method	0,0045198
Firm size	-0,0014911

As a result of regression analysis it is possible to draw conclusions about the hypotheses stated. The coefficient of the variable responsible for the hypothesis №1 is negative, and variable board size is statistically significant, which means that hypothesis is supported and M&A performance tends to increase with decreasing size of the board. Also, confirmation received hypothesis №2, which states that there is positive influence of the number of independent members on the board of directors on the performance of M&A transactions. The coefficient of the variable board independence (the percentage of independent members of the board of directors) is positive and variable is statistically significant at 1% level. Thus, one could argue that increase of independent board members adds to the cumulative abnormal return. №3 hypothesis is also approved; the coefficient of the variable CEO duality (alignment of position of CEO and Chairman of the Board) is negative and significant, which means that generally, when a CEO of a company also holds a position of the chairman of the board, it negatively affects M&A performance. Hypothesis №4 is statistically insignificant, which means that there has been found no statistically significant relationship between board ownership (holdings of the shares of the company by the board members) and firms' M&A performance. Concerning control variables, neither variable payment method (payment method in M&A transactions), nor variable firm size were found to be statistically significant and thus it can be concluded that they can be disregarded in the analysis.

CHAPTER 4. SUMMARY AND DISCUSSION

4.1 Summary

This study investigates how corporate governance and particular board structure affect M&A deals. The first step of the research was determination of main research goals, objectives and creation of development questions. Secondly, the overview of the previous empirical studies dedicated to topic of correlation between board structure and M&A deals was conducted. Literature review was extremely important because it helps to find the optimal indicator that measures the M&A deals (CAR), create the list of other variables and develop hypotheses. After the data collection process the regression analysis was conducted. The findings of the current study investigates which board characteristics have the most influence on M&A performance – the results shows that among them are board size, CEO duality and board independence. The board characteristic that does not impact M&A performance is board ownership.

4.2 Limitations and recommendation for further research

This master thesis has some limitations that can provided basis for recommendations for the future researches. First of all, this study does not take into account different structure of leadership in companies from US and Europe however, consideration of these differences is very important especially in regards to the CEO duality (Dehaene, Ooghe, Vuystand, 2001). For instance, majority of US companies are characterized by CEO duality structure: one person at the same time is CEO of the company and member of its board of directors while companies from Europe usually have two-tier structure. In some countries CEO duality is prohibited by law.

In addition, the research design of the current study has the problem of endogeneity that is also called the problem of reversed causality and the bias of omitted variables. This problem casts doubts about the veracity of relationship between two variables – different board characteristics and M&A performance. Moreover, data collection process has not been fully executed because of missing data (for example, difficult recoverability of CAR) that reduces the objectivity of the study.

It is also important to mention that the current research focuses on pharmaceutical industry that is characterized by the rapid growth of M&A for the last three years (Global M&A Report, Pharma/Biotech, 2015). Despite the relevance of the current study, it can be difficulties with generalization because of specificity of the industry.

The research focuses on four characteristics of board of directos (board size, board independence, CEO duality and board ownership) however, other board characteristics that can determine M&A performance exist. For example, background of board member, qualification of

board members, gender diversity, board meetings that can measure intensity of board activity. The research that will measure other characteristics of board of directors can significantly increase the existing pool of knowledge related to this topic.

4.3 Implications for theory and practice

This master thesis contributes to the business literature by increasing the existent pool of knowledge on whether internal company's structure (corporate governance) can enhance the performance of mergers and acquisitions deals. In addition, the study is based on examination of pharmaceutical industry where the number of mergers and acquisitions is growing rapidly and therefore any research dedicated to this topic will add the existence incomplete knowledge base.

Moreover, the results of current study have important managerial implications. The findings of the master thesis can be useful for top management of the company that should take into account that in addition to achievement of corporate goals board of directors can also have influence on M&A deals. In addition, the research showed which characteristics of board of directors are more important regarding to M&A deals. The statistical analysis shows that among them are board size and board independence.

CONCLUSION

The main goal of this research was to to investigate the impact of the structure of the board of directors on the M&A performance expressed as cumulative abnormal return for the specified period. The regression analysis helped to achieve this goals and showed that some components of board structure has a significant impact on M&A performance.

The statistical analysis helps to investigate that the most influential component of board structure that is positively related to M&A is independence of board of directors. It can be explained by the fact that independent board members usually significantly enhance companies' monitoring activities that positively impacts decision-making process.

Regarding to board size, the results of the analysis have shown that the number of board of directors and M&A performance are inversely related. Large boards of directors consist of people with different backgrounds and views. These factors can cause communication and coordination problems, lead to misunderstanding and conflicts that significantly complicates process of decision-making.

Regarding to CEO duality, the statistical analysis has shown that the efficiency of M&A deals for companies, where there is a CEO duality, is lower than for companies, where there is no CEO duality. It can be explained by the reason that separation of the post of CEO and chairman of the board of directors in the company-acquirer leads to more objective assessment of the proposals of the transaction and mitigates the agency problem.

Finally, it was found that ownership by members of board of directors is not significant with respect to the performance of M&A deals and therefore the last hypothesis was not confirmed while others were.

To sum up, the current study reinforced the opinion that board of directors can become the strong point of the company that helps it to achieve corporate and economic goals and improve M&A performance as well.

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