

St. Petersburg State University  
Graduate School of Management  
Master in Corporate Finance Program

# **THE RELATIONSHIP BETWEEN PRIVATE BENEFITS OF CONTROL AND FIRM VALUE**

Master's Thesis by the 2<sup>nd</sup> year student  
Concentration – Master in Corporate Finance  
*Karimov Aidar*

Research advisor:

*Berezinets Irina Vladimirovna,  
Associate Professor*

St. Petersburg  
2017

ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ  
ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ

Я, Каримов Айдар Илнурович, студент второго курса магистратуры направления «Менеджмент», заявляю, что в моей магистерской диссертации на тему «Взаимосвязь частных выгод контроля и ценности компании», представленной в службу обеспечения программ магистратуры для последующей передачи в государственную аттестационную комиссию для публичной защиты, не содержится элементов плагиата.

Все прямые заимствования из печатных и электронных источников, а также из защищенных ранее выпускных квалификационных работ, кандидатских и докторских диссертаций имеют соответствующие ссылки.

Мне известно содержание п. 9.7.1 Правил обучения по основным образовательным программам высшего и среднего профессионального образования в СПбГУ о том, что «ВКР выполняется индивидуально каждым студентом под руководством назначенного ему научного руководителя», и п. 51 Устава федерального государственного бюджетного образовательного учреждения высшего профессионального образования «Санкт-Петербургский государственный университет» о том, что «студент подлежит отчислению из Санкт-Петербургского университета за представление курсовой или выпускной квалификационной работы, выполненной другим лицом (лицами)».

\_\_\_\_\_ (Подпись студента)

\_\_\_\_\_29/05/17\_\_\_\_\_ (Дата)

STATEMENT ABOUT THE INDEPENDENT CHARACTER OF  
THE MASTER THESIS

I, Karimov Aidar Inurovich, second year master student, Master in Corporate Finance program «Management», state that my master thesis on the topic «The relationship between private benefits of control and firm value», which is presented to the Master Office to be submitted to the Official Defense Committee for the public defense, does not contain any elements of plagiarism.

All direct borrowings from printed and electronic sources, as well as from master theses, PhD and doctorate theses which were defended earlier, have appropriate references.

I am aware that according to paragraph 9.7.1. of Guidelines for instruction in major curriculum programs of higher and secondary professional education at St.Petersburg University «A master thesis must be completed by each of the degree candidates individually under the supervision of his or her advisor», and according to paragraph 51 of Charter of the Federal State Institution of Higher Professional Education Saint-Petersburg State University «a student can be expelled from St.Petersburg University for submitting of the course or graduation qualification work developed by other person (persons)».

\_\_\_\_\_ (Student's signature)

\_\_\_\_\_29/05/17\_\_\_\_\_ (Date)

## АННОТАЦИЯ

|   |   |
|---|---|
| Автор                                       | Каримов Айдар Илнурович   |
| Название магистерской диссертации           | «Взаимосвязь частных выгод контроля и ценности компании»  |
| Факультет                                   | Высшая школа менеджмента  |
| Направление подготовки                      | 080200 “Менеджмент” (Профиль: Корпоративные финансы)  |
| Год   | 2017  |
| Научный руководитель                        | Ирина Владимировна Березинец, к.ф.-м.н., доцент   |
| Описание цели, задач и основных результатов | <p>Целью исследования является изучение взаимосвязи между частными выгодам контроля и ценностью компании. Для достижения этой цели были исследованы наиболее актуальные теоретические концепции, исследующие как подходы к оценке компании, так и способы измерения частных выгод контроля.</p> <p>Исследование проводилось на выборках российских и немецких компаний, имеющих два класса акций.</p> <p>В результате эконометрического анализа была выявлена отрицательная взаимосвязь между частными выгодами контроля и ценностью компании в России, и положительная в Германии. Различие в стоимости компании в зависимости от размера частных выгод контроля в России и Германии было изучено и подтверждено дополнительным анализом.</p> <p>Модель исследования включала в себя также переменные, характеризующие корпоративное управление в компании, такие как: доля собственности крупнейшего акционера, размер совета директоров и доля независимых директоров.</p> |
| Ключевые слова                              | ценность компании, частные выгоды контроля, корпоративное управление, компании с двумя типами акций, привилегированные акции, Россия, Германия  |

### ABSTRACT

|  |  |
|--|--|
| Master Student's Name                          | Karimov Aidar Ilurovich  |
| Master Thesis Title                            | «The relationship between private benefits of control and firm value»  |
| Faculty  | Graduate school of management  |
| Main field of study                            | 080200 “Management” (specialization: Master of Corporate Finance)  |
| Year   | 2017   |
| Academic Advisor's Name                        | Irina V. Berezinets, PhD in Physico-mathematical sciences, Associate Professor   |
| Description of the goal, task and main results | <p>The research goal of the paper is to determine the relationship between private benefits of control and firm value and to define the direction of this relation. To achieve this goal, theoretical concepts exploring firm valuation and private benefits of control were investigated, the most recent and influential researches analyzing the relationship were reviewed.</p> <p>The study was conducted based on two samples consisted of Russian and German companies with dual-class stock structure.</p> <p>Result of the econometric analysis explored the negative relationship between private benefits of control and firm value in Russia, while proved the positive in Germany. The difference in effect of private benefits of control on firm value in Russia and Germany was stressed and confirmed through the additional analysis.</p> <p>Moreover, results regarding the relationship between variables characterizing corporate governance such as the ownership of the first largest shareholder, board size and share of independent directors were determined and explained.</p> |
| Keywords                                       | firm value, private benefits of control, corporate governance, dual-class stock companies, preferred stocks, Russia, Germany   |

**TABLE OF CONTENTS**

**INTRODUCTION ..... 7**

**CHAPTER 1. FIRM VALUATION. REVIEW OF APPROACHES..... 10**

    1.1 Multiples approach ..... 10

    1.2 Fundamental valuation models..... 13

    1.3 Different approaches in literature..... 16

    Summary ..... 21

**CHAPTER 2. PRIVATE BENEFITS OF CONTROL. MEASUREMENT APPROACHES .. 23**

    2.1 Concept of Private Benefits of Control ..... 23

    2.2. Measurement of Private Benefits of Control..... 24

    2.3 Relationship between private benefits of control and firm value..... 33

    Summary ..... 39

**CHAPTER 3. EMPIRICAL STUDY ..... 42**

    3.1 Hypotheses and methodology ..... 42

    3.2 Sample selection..... 44

    3.3 Descriptive statistics..... 47

    3.4 Regression Analysis ..... 53

    Summary ..... 61

**CONCLUSION ..... 62**

**REFERENCES ..... 64**

**APPENDICES..... 73**

## INTRODUCTION

Nowadays public investors have an extensive set of instruments to assess the quality of the investment. Future prospects could be evaluated by analyzing stock performance related characteristics or through the thorough analysis of the balance sheet or corporate events. Prevalingly, official information properly reflects company's actual state, yet in some cases investors might be unaware of events connected with the corporate governance. There are firms, where controlling shareholders or managers use their position to enjoy exclusive benefits unavailable to minority shareholders. Impossibility to directly identify the presence and measure the size of those benefits disturbs investors. Especially minority shareholders could be intrigued with the relationship between these benefits and value of their stakes.

What are the rationales behind those concerns? Formally the owners of a company authorize agents to manage their resources in a way that will maximize their welfare. Perfect competition conditions imply that welfare of shareholders is maximized through increasing firm value. However, virtual circumstances deteriorate such model by including personal interests of individuals having the authority to use resources in favor of their personal welfare. Thus, management may undertake actions or projects that potentially reduce value through the excessive consumption of perquisites, unneeded acquisitions or shirking. These actions are usually initiated in companies with diffused ownership, where the management is not strictly controlled by the shareholders. In companies with the controlling shareholders, on the other side, expropriation of minority shareholders by block holders may take place, also causing potential value decrease. In academic literature, possibility to have opportunities of undertaking these actions is named as "private benefits of control". Formal description of PBC is depicted as follows: "Some value, whatever the source, is not shared among all shareholders in proportion of the shares owned, but it is enjoyed exclusively by the party in control" (Dyck, Zingales, 2004).

Usually minority shareholders who do not hold any managing positions at a company do not have any influence on the magnitude of private benefits of control. But what is more important it is impossible for them to recognize the presence of those benefits. As (Muravyev, 2007) claims: "If these private benefits could be evaluated they would immediately lose their "privacy" and minority shareholders could bring in a lawsuit against the corporation or the controlling owner". Hence, any individual or even institutional investor unable to purchase a block of shares could potentially become an owner of a company, where investors' property might be employed for management's

personal welfare increment. Despite the presence of private benefits of control, they could not be evidenced directly and their potential magnitude could be estimated only indirectly.

We therefore need to justify whether those expectations may have a real implication on a firm value. Thus, the research goal of the master thesis is to determine the relationship between private benefits of control and firm value.

The research goal will be analyzed by means of the set of research objectives stated below:

- To determine firm valuation approaches which are the most adequately relate to the goal and to define a set of factors related to firm value other than private benefits of control;
- To explore approaches to measure private benefits of control and choose one that is mostly consistent with the stated research goal;
- To conduct an empirical study to determine the relationship between private benefits of control and firm value;
- To analyze the results of the empirical study and draw final conclusion.

The object of this thesis are Russian and German public companies. The primary subject of the research is the relationship between private benefits of control and firm value.

The paper is an empirical research conducted by the employment of econometric analysis, made by using econometric tools in the Stata software.

Information was mainly gathered from several sources: theoretical articles devoted to the problem of firm value determinants; contemporary academic articles researching emerging and developed markets, where the problem of private benefits of control is discussed; analytical reports (e.g. PricewaterhouseCoopers); professional periodic literature (Journal of Accounting and Economics, Journal of Economics, Journal of Finance, The Financial Times and many others); reputable textbooks where problems of firm valuation and private benefits of control are described.

Data for the purpose of the regression analysis is assembled through the number of databases and official documents. Among databases were Thompson Reuters Eikon, Thompson Reuters DataStream, SKRIN and SPARK. In addition to databases, data is obtained from the official annual and quarterly reports of companies.

The master thesis is organized as follows. The first chapter is completely devoted to the problem of different valuation approaches. In this chapter, theoretical background of a variety approaches to firm valuation is discussed. Further, a number of researches where these approaches



are applied is presented. Eventually, in the first chapter the final choice of the firm value proxy is made.

The second chapter consists of two parts. In the first part, problem of private benefits of control is outlined and different approaches to measure PBC are discussed. In the second part, latest empirical papers, which explore the problem of private benefits of control are reviewed.

Finally, in the third part, empirical research is done. It is conducted through the consistent execution of several steps: choice of methodology, sample selection, in-depth analysis of descriptive statistics, econometric analysis and reporting of final results of the study. Based on the obtained results, managerial implication and contribution to the subject is discussed.

## CHAPTER 1. FIRM VALUATION. REVIEW OF APPROACHES.

The following chapter is fully devoted to the discussion of different valuation approaches. This chapter results in the final choice of firm value proxying approach and the inclusion of variables which have to be controlled in accordance with the chosen proxy. The chapter is structured as follows. First, theoretical background of the firm valuation topic is described. Second, the most recent papers differently proxying firm value are presented. And finally, conclusion based on the findings is made.

There are two general approaches used to value a firm. First relates to so-called multiples which are calculated by rationing market to accounting indicators. Second concerns of “intrinsic value” of a firm and calculated based on a firm’s future cash flows (Pinto, Robinson, Henry, Stowe, 2010). Both approaches are described and discussed below.

### 1.1 Multiples approach

Valuation approaches based on market indexes use the price and enterprise multiples. First group includes coefficients that express the ratio of stock price to one of the operating or accounting metrics. The second refers to the coefficients based on the market value of the whole company. When price multiples are used, investor estimates the fair share price based on number of units of the selected metric she will receive by buying one share, while when enterprise multiples are used investor counts for operational income per dollar of ownership. For each of the approaches major advantages and disadvantages are provided. The table presented in appendix 1 summarizes all the multiples that are further described below.

#### 1.1.1 Price Multiples

Price to earnings multiple is calculated by dividing market price per share by earnings per share.

$$P/E_t = \frac{MV_t}{EPS_t} \quad (1.1)$$

This multiple was first introduced by (Graham, Dodd, 1934) as an approach to seek for undervalued companies. Advantageous facet of P/E multiple is the use of the most important from investor’s point view characteristics of the company. However, valuation of unprofitable companies is impossible by using P/E multiple.

Another multiple that is used to value a company by using cash flows is *price to sales* multiple, which is represented by the ratio of market value of equity to sales.

$$Price\ to\ Sales_t = \frac{MVE_t}{Sales_t} \quad (1.2)$$

Among pros of this multiple (Damodaran, 2007) emphasizes the ability to value intangible assets. Meanwhile, (Pearl, Rosenbaum, 2013) highlight that P/S multiple should be used cautiously due to two facts. First, sales do not provide information about actual marginality of the business. Second, sales may differ dramatically among industries.

Price to book value ratio is expressed by division of market price per share by book value of equity per share.

$$P/B_t = \frac{MV_t}{BV_t} \quad (1.3)$$

Application of P/B provides a researcher with the fair valuation, as soon as neither market nor book value could be manipulated. P/B multiple doesn't serve an opportunity for valuing companies with a large stake of intangible assets. Moreover, debt of the company is not considered while using P/B.

Market to book multiple represented by the ratio of sum of market value of equity and debt to book value of equity and debt.

$$M - t - B_t = \frac{MVE_t + MVD_t}{BVE_t + BVD_t} \quad (1.4)$$

M-t-b is an extended version of P/B ratio, which additionally allows to consider debt in firm valuation. Additionally, M-t-b could be calculated for the companies with negative book value of the equity, since it is offset by the debt value (Damodaran, 2007).

Tobin's Q – is the ratio between market value of a physical assets and their replacement costs.

$$Tobin's\ Q_t = \frac{MVE + BVD_t}{BVA_t} \quad (1.5)$$

Innovation or breakthroughs in technological development can lead to an increase or decrease in the value of the company's assets. A company could be considered creating an economic value for its investors if its surplus income exceeds the difference between the market value of assets and the cost of replacing them. If the value of Tobin's Q is equal to 1, company is priced by the market at par. Value less than 1 signals that investors do not expect a company to produce the economic value. Tobin's Q ratio of more than one indicates about good expectations of investors regarding company's ability to produce value with given assets. This ratio is therefore widely used

as a performance measure or relative firm value indicator. However, replacement cost of all assets barely could be calculated and replacement costs. Tobin's Q is therefore proxied by the similar ratio with the book value of assets instead of replacement costs.

P/CF ratio is calculated as the division of market value of equity by cash flow of a company. In this equation cash flow is represented by the sum of net income and amortization.

$$P/CF_t = \frac{MVE_t}{CF_t} \quad (1.6)$$

(Pinto, Robinson, Henry, Stowe, 2010) assert that by using cash flow investor or researcher may avoid possible inconsistency while comparing different companies. First, P/CF is more stable than income based multiples, due to invulnerability to the short-term industry-specific shocks. Second, unlike P/E this multiple hardly could be manipulated.

Another approach to the valuation of company is the use of price to dividends multiple.

$$P/Div_t = \frac{Share\ Price_t}{Div\ per\ share_t} \quad (1.7)$$

Despite the fact that this ratio rarely used in firm valuation, it has a number of advantages. For example, (Weinstein, 1988) argues that unlike profit and revenue, dividends are not subject to the large-scale manipulations, they are either paid or not. In addition, the author notes that the amount of dividends does not depend on short-term shocks, which can cause a "write-off" of company profits.

### *1.1.2 Enterprise Multiples*

Enterprise multipliers are designed to measure how many units of operational income investor might gain per dollar of ownership in a company. The reason that the use of enterprise multiples may be preferable to price multipliers is that the former are less sensitive to the effect of financial leverage. One of the problems associated with deploying price ratios is an incorrect estimation of companies with a high ratio of borrowed capital. As a result, companies with the largest amount of debt could be rated higher than a company with a "healthy" capital structure. With employment of enterprise multiples, this problem is avoided. In general, there are three enterprise multiples: EV/EBITDA, EV/EBIT, EV/Sales.

Most widely used enterprise multiple is EV/EBITDA. The use of this multiple is advantageous when capital expenditures and amortization could be neglected. In researches with heterogenous samples, EV/EBITDA helps to minimize influence of factors specific for each industry (Copeland, 1983). Another positive effect from deploying this multiple is the possibility to compare

companies with negative net income. However, use of EBITDA in numerator may lead to overpricing of cash flows (Pinto, Robinson, Henry, Stowe, 2010).

Another often applied in valuation multiple is EV/EBIT, which is useful when the relative amount of capital expenditures is of concern for a researcher. Moreover, it provides more precise results while analyzing a sample of homogeneous companies.

EV/Sales is the least popular enterprise multiple and could be used for the valuation and comparison of companies with almost similar industries or where differences in capital expenditures, amortization or taxing specifics are neglectable.

## 1.2 Fundamental valuation models

The fundamental value of a company could be expressed as the projected cash flows of this company discounted at the specified discount factor. Unlike the valuation based on market multiples, models based on fundamental value are necessary to determine the “intrinsic value” of a business that may differ significantly from the market valuation. Generally, basic equation considers firm value as the sum of fundamental value of equity and fundamental value of debt.

$$V_{firm} = V_E + V_D \quad (1.8)$$

where  $V_{firm}$  – fundamental value of firm, often defined as the value of assets or value of business

$V_E$  – fundamental value of equity

$V_D$  – fundamental value of debt

Basically, there are two approaches to value equity of a firm: operating and capital. Former implies that the future discounted cash flows associated with firm’s assets are calculated and then value of debt is subtracted. Second approach suggests that cash flows to equity should be calculated from the outset.

Besides the equity valuation, the way how cash flows are treated should be determined as the next step. Basically, there are two approaches to treat cash flows: firm cash flows and residual income flows.

Thus, fundamental value could be determined in four ways, as presented in Table 1.1.

**Table 1.1. Fundamental valuation models taxonomy (Volkov, 2008)**

|                           |                 | Approaches to equity valuation                          |                                  |
|---------------------------|-----------------|---|----------------------------------|
|                           |                 | Operational   | Capital                          |
| Value creating cash flows | Cash Flows      | Discounted Cash Flows Models                            |                                  |
|                           |                 | Discounted Free Cash Flows Model<br>(DCF <sub>M</sub> ) | Dividend Discount Model<br>(DDM) |
|                           | Residual Income | Residual Income Models                                  |                                  |
|                           |                 | Residual Operating Income Model<br>(ROIM)               | Residual Earnings Model<br>(REM) |

*1.2.1 Discounted Free Cash Flows Model*

DFCM was first introduced by (Williams, 1938). Further it was popularized among professionals and currently described in the number of fundamental papers (Benninga, Sarig, 1997), (Damodaran, 2007), (Brealey, Myers, 2011). The main rationale of this model is that the value of firm equals its discounted future cash flows. DFCM could be calculated as follows:

$$V_E^{FCF} = \sum_{t=1}^{\infty} \frac{FCF_t}{(1 + k_w)^t} - D_{BV} \quad (1.9)$$

where  $V_E^{FCF}$  - fundamental value of equity

$FCF_j$  – free cash flows at date t

$k_w$  – weighted average cost of capital

$D_{BV}$  – book value of debt

DDM is one of the oldest valuation models. The model has many proponents since it is the most intuitively understandable one. Dividends, is literally, the only cash flow directly received by investors. Firm value could be calculated by using DDM.

$$V_E^{DDM} = \sum_{t=1}^{\infty} \frac{d_t}{(1 + k_e)^t} - D_{BV} \quad (1.10)$$

where  $V_E^{DDM}$  - fundamental value of equity

$d_j$  – discount factor

$k_e$  – required return on equity

Advantage of DCFM that should be outlined is its ability to precisely value companies on stable markets. (Foerster, Sapp, 2005) analyzes 120 year history of Canadian company Bank of Montreal and concluded that DCFM provides the closest estimation of value in comparison with other fundamental valuation models. Same result is obtained by (Salih, Ok, Akdeniz, 2006), who reports that DCFM shows the best valuation estimates of Turkey companies in terms of discrepancy from the actual share price. Among disadvantages, (Damodaran, 2007) notes that DCFM models lead to undervaluation and utterly conservative results, due to necessity to use low growth rates.

### 1.2.2 Residual Income Models

Residual income models are closely related to the ideas of Economic Value Added. In RIM fundamental value of equity depends on four factors: a) invested capital amount b) actual return on equity c) required return on equity d) sustainability in ability to add value.

First residual income model - ReOIM implies that fundamental value of equity comprised of two elements: book value of net assets and incremental fundamental value.

$$V_E^{ReOIM} = NA_0 + \sum_{t=1}^{\infty} \frac{ReOI_t}{(1 + k_w)^t} - D_0 \quad (1.11)$$

where  $V_E^{ReOIM}$  - fundamental value of equity

$NA_0$  – net assets at the moment of valuation

$ReOI_t$  - residual operating income

$k_w$  – weighted average cost of capital

$D_0$  – book value of debt at the moment of valuation

Calculation of REM – second residual income model involves the same procedure, but employs residual earnings instead of the residual operating income.

Major advantage of residual income models is the fact that the necessary input data is limited to the accounting statements. Unlike previously described models, the results of RIM do not rely on assumptions, since the basis of these models is the company's official data presented in the reports. In addition, number of authors (Pinto, Henry, Robinson, 2007) attribute to the advantages of this

model the possibility of using it in conditions when companies do not pay dividends or have negative cash flows.

(Penman, Penman, 2007) note that REM provides more accurate results than DCFM and valuation based on multiples. Comparing the forecasted prices of securities on the exchanges of NYSE, AMEX and NASDAQ, the authors conclude that REM are the best for valuation on short term horizons (less than 6 months). (Francis, Olsson, Oswald, 2000) measure the accuracy of the company's intrinsic value, based on a sample of English companies. Analysis revealed that the error in forecasting is 20% less for RIM than for DCFM. The authors hypothesize that rationale behind that is the necessity to make large number of assumptions in DCFM. At the same time, it has one primary shortcoming. Since the model is based on accounting data, it's quality significantly relies on the quality and completeness of information presented in official reports.

Overall, fundamental valuation models provide better proxies for firm value than market multiples forasmuch as it is based on the intrinsic value of a company with inclusion of firm-specific factors influencing the valuation. Valuation based on multiples, however, lowers the probability that the result will be skewed due to the inaccuracy of stated assumptions. Overall, chosen approach should be consistent with the research goal and objectives.

### **1.3 Different approaches in literature**

Given the aforementioned theoretical background, further practical use of those approaches is provided below. All the major researchers, studying the determinants of firm value are analyzed and presented in the following section, divided in accordance with the approach used in the researches. First, papers, where Tobin's Q used as a proxy of firm value are reviewed. Second, researches where market-to-book value is chosen to represent firm value are discussed.

#### *1.3.1 Tobin's Q ratio*

(Gleason, Klock, 2006) investigate whether different measures of intangible capital such as advertising and R&D expenses may explain changes in Tobin's Q ratio for chemical and pharmaceutical industries of the U.S. market from 1982 to 2001. Based on the sample of 7 024 observations, the authors find that advertising and R&D expenses are significantly determine the Tobin's Q ratio and explain more than 20% of this variation.

In their research (Aggarwal, Kyaw, Zhao, 2006) study the relationship between leverage and firm value. Despite the bulk of papers discussing the leverage that had been already found out the significant relationship between leverage and firm value, the authors attempt to extend this analysis



by introducing new control variables. While controlling for industry leverage effects and other concerned independent variables, they document that there is a lack of clarity regarding the relationship between leverage and firm value, proxied with Tobin's Q ratio.

Tobin's Q was used as a performance measure by (Adams, Mehran, 2003) who investigate the relationship between the board size and the performance of a company. The authors find that board independence has no influence on performance, whilst the board size has.

(Konijn, Kraussl, Lucas, 2011) investigate the effect of the presence of a multiple shareholder and shareholders' dispersion degree on a firm value. By proxying firm value with Tobin's Q ratio, the authors obtain negative correlation between blockholder dispersion and firm value, as well as for the multiple blockholders on the U.S. market. They suggest that there might be a room for private benefits of control extracted by blockholders at the expense of minority shareholders.

(Xiao, 2009) examines the relationship between agency costs and firm value based on a sample of 156 Chinese publicly listed companies which have individual ultimate owners in a period between 2002 and 2007. The author finds that the difference between control and cash flow rights properly reflect agency costs, and negatively affect firm value, proxied by Tobin's Q. The author also attempts to explore what accounts for the relationship. According to this research, the growth of agency costs leads to the stock return decrease around the announcement of the connected party transaction. For some transactions, however, this effect might be especially strong. Finally, Xiao concludes that the non-tradable share reform confirms that larger difference between cash flow and control rights leads to the more unfavorable stock response.

(Chen, Zhang, 2013) make an empirical examination of the relationship between the market valuation of firm assets, proxied by Tobin's Q and the amount of firms' asset productivity related information. The authors successfully attempt to quantify this information by means of  $R^2$ , by using the firm-specific regression of future firm's earnings. They find statistically significant positive relationship between the  $R^2$  and the value of firm assets. The researches find these results consistent with the previous ideas stating that the mapping between accounting measurement of assets and earnings gives information about the firm asset's productivity. Besides, among others, the authors scrutinize the relationship between firm value, measured by Tobin's Q ratio and other variables, as sales, ROA and other firm and industry specific vectors of variables.

(Vintila, Ghergina, 2014) studied Romanian market in regard of the association between ownership concentration and firm value. Based on a sample of local companies, traded on the

Bucharest Stock Exchange between 2007 and 2011, they estimate multivariate regression model. The authors measure out firm's value by the Tobin's Q ratio, adjusted in a such way to take into account the industry membership diversity. The ownership is considered separately for the first, second and the third largest shareholders of companies. It is done to sustain an inferior influence of first largest shareholder on firm value. The authors finally conclude that the first largest shareholder of a company discourages the existence of other investors holding large stakes.

Studying the question of boardroom diversity, (Adams, Kirchmaier, 2015) investigate how country-level factors posture for women barriers to boardrooms. The authors also demonstrate how measures of barriers explain the representation of women in the pool of directors within U.S. companies. This research results in suggestion of working full-time as an essential pre-condition for women to be a part of a boardroom. Among others the authors regress Tobin's Q on the diversity of the board, size of the board, independence and firm-level controls.

Based on the analysis of the sample consisted of 1,481 firms, (Adams, Verwijmeren, 2015) attempt to research how skills might cluster on and across boards. With further analysis of how firm performance relates to better commonality in skill sets, the authors characterize directors' skill set through the special requirement of the U.S. companies about disclosure of the experience and qualification. Firm performance is proxied by the authors with Tobin's Q ratio, which they express, in turn, as the book market of assets less the book value of equity plus the market value of equity and eventually divided by the book value of assets, which is consistent with the equation described in the previous section.

(Dah, 2016) examines the association between the corporate governance in companies and the firm value during various phases of the business cycle. Among other important results, the authors show that industry turnover and managerial entrenchment differently affect the firm value. Firm value in his research is proxied by Tobin's Q ratio.

In another paper, (Kim, Park, Suh, 2016) investigate the relationship between dividends and firm value, proxied by Tobin's Q. The authors find that the companies with the highest dividends paid are, on average, valued higher than others. Meanwhile, companies, which do not pay dividends at all, are on average valued higher than low-dividend-payers. In accordance with the findings, this relationship is very stable over the period between 1962 and 2010.

(Bhandari, Javakhadze, 2017) study how the level of corporate social responsibility of companies influences the value. The authors find that CSR perverts sensitivity of a firm value to new investments. The authors proxy the firm value with Tobin's Q, while measuring the latter as the

market value of equity, less the book value of equity, plus the book value of assets and rationed by the book value of assets.

(Glaum, Kaiser, 2017) hypothesize that the relationship between company's environmental, social and governance activities is mostly moderated by the level of disclosure. To stress this hypothesis, the authors conduct the regression analysis, while proxying ESG disclosure by the number of citations and the firm level by Tobin's Q. Final findings of the researches indicate that the firm value increases with the strengthening of ESG.

(Kim, Papanastassiou, Ngyuen, 2017) investigate how the employment of financial derivatives affect the firm value based on a sample of domestic firms, Multinational Corporations and foreign affiliates of MNCs. By using the sample totaling in 881 non-financial firms in eight countries, the authors study the relationship between corruption rate and the use of derivatives. The researches explore the impact of derivatives on firm value, proxied by Tobin's Q ratio to be positive.

### *1.3.2 Market-to-book ratio*

Market-to-book ratio was used by (Noe, Tice, 2009) who investigate the relationship between the stock liquidity and firm performance. Analyzing the sample of daily and monthly prices of stocks traded on NYSE, Amex and NASDAQ, the authors show that liquidity positively affects firm performance and operating profitability. To perform this analysis, Noe and Tice study the effect of stock trading decimalization on firm performance proxied by the market-to-book ratio. Further, they find the underlying mechanisms which could be responsible for this relationship.

(Bates, Kahle, Stulz, 2009) by analyzing the companies of the U.S. market find that the average cash-to-assets ratio for industrial companies more than doubled for two decades since 1980. The authors emphasize that by the end of 2006 the average firm could retire all debt obligations with cash holdings. One of the highlights of this paper is that excessive cash holdings could subsequently decrease the firm value, measured by market-to-book value.

Another research, where market-to-book value is used as a proxy for the profitability of the company is done by (Javed, Rao, Akram, Nazir, 2015), who examines the effect of financial leverage on different efficiency proxies. By scrutinizing the sample of 154 Pakistan textile firms over the period from 2006 to 2011, they indicate that the leverage negatively relates to the efficiency of firms. Moreover, the authors state that less borrowings will lead to the higher market-to-book value.

(Fosu, Ahmad, Coffee, 2015) assess how information asymmetry determines firm value and to what extent does this relationship is conditional on the level of leverage. The authors by using the dataset consisted of international companies drew the following hypothesizes:

H1: Information asymmetry will be negatively related to firm value

H2: The effect of information asymmetry on firm value is moderated by financial leverage

H3: The adverse effect of leverage on firm value is moderated by information asymmetry

H4: Information asymmetry will be more negatively related to firm value in the post-crisis period than in the pre-crisis period

H5: The effect of information asymmetry on firm value is higher for firms with high growth opportunities

After stressing the whole set of hypotheses, the authors find that leverage negatively affects firm value and that for information asymmetric firms, the marginal effect is significantly lower.

Among recent researches who investigated the determinants of firm value were (Yung, Jian, 2017). Based on a sample of 20,125 firm-year observations between 1998 and 2013, the authors stressed the following hypotheses:

H1: The shareholder base has a negative effect on firm value China

The authors do not reject this hypothesis and rationalize it by the possible agency conflicts between individual investors and the controlling shareholder. As a proxy of firm value Yung and Jian use book-to-market value.

Results of the literature analysis is presented on table 1.2. Conducted literature review revealed that despite the presence of the wide range of valuation approaches which could be used for measuring firm value, only a few of them is used in researches. First of all, none of the studies deploys fundamental valuation approaches. One may hypothesize that the use of DCFM and REM would be adequate for private companies, where assets should be priced by the researcher, due to absence of market information. Considering the fact, that all of the conducted researches relate to public companies, the use of market based firm value measures is suitable. Among market multiples, though, only a few valuation approaches are used for proxying firm value. Namely, Market-to-book and Tobin's Q are used to proxy the value of firm. Although, all of these measures are aimed at estimating market value of assets in comparison with their book value, use of Tobin's Q significantly prevails.

**Table 1.2 Summary of firm value proxying approaches in literature**

| <b>Multiples</b>   | <b>Application in researches</b> | <b>Enterprise Multiples</b> | <b>Application in researches</b> | <b>Fundamental Valuation</b> | <b>Application in researches</b> |
|--------------------|----------------------------------|-----------------------------|----------------------------------|------------------------------|----------------------------------|
| Price-to-earnings  | -                                | EV/EBITDA                   | -                                | DCF                          | -                                |
| Price-to-sales     | -                                | EV/EBIT                     | -                                | DDM                          | -                                |
| Price-to-book      | -                                | EV/Sales                    | -                                | ROIM                         | -                                |
| Price-to-cash flow | -                                |                             |                                  | REM                          | -                                |
| Price-to-dividends | -                                |                             |                                  |                              |                                  |
| Tobin's Q          | +                                |                             |                                  |                              |                                  |
| Market-to-book     | +                                |                             |                                  |                              |                                  |
| EV/EBITDA          | -                                |                             |                                  |                              |                                  |
| EV/EBIT            | -                                |                             |                                  |                              |                                  |
| EV/Sales           | -                                |                             |                                  |                              |                                  |

Based on the literature review, Tobin's Q ratio proved to be the most adequate ratio for proxying firm value. Furthermore, based on the reviewed literature a set of control variables is chosen for the baseline model. The table presented in appendix 3 introduces variables reflecting the baseline model.

### **Summary**

The main purpose of this chapter was to define the adequate approach for firm valuation in the context of the study of the relationship between private benefits of control and firm value. To reach the goal, in current chapter the following was done.

As a first step, theoretical background of different valuation approaches is provided. For each of the existent metrics, calculation technique is presented and major pros and cons are explained.

As a second step, thorough analysis of the current literature, which explores determinants of firm value is proposed. Finally, based on the findings, Tobin's Q ratio is chosen as the most adequate and widely used measure of private benefits of control.

## **CHAPTER 2. PRIVATE BENEFITS OF CONTROL. MEASUREMENT APPROACHES**

### **2.1 Concept of Private Benefits of Control**

According to (Nenova, 2003) topics related to private benefits of control started their development since the influence of an ownership concentration on firms' performance was mentioned. (Berle, Means, 1932) were first who suggested that the control of a company may give management an opportunity to use it in favor of their personal interests. However, intensive extension of the topic was undertaken by (Jensen, Meckling, 1976) focusing on agency problem. Many researches asserted that managers owning a stake in a company may have an ability to gain welfare disproportional with their actual ownership (Fama, Jensen, 1983), (DeAngelo, DeAngelo, 1985). In 1987 Grossman and Hart scrutinized the difference between prices of voting and non-voting shares and concluded that the presence of dual-class stock structure may be an indirect evidence of expropriation of minority shareholders in a company. Later (Barclay, Holderness, 1989) while investigating the data on acquisitions made on New-York stock market assumed that the premia paid for block trades might be a signal of presence of private benefits of control consumed exclusively by the block holders. Among those papers are (Shleifer, Vishny, 1986), (Stulz, 1987), (Harris, Raviv, 1988), (Castelino, 1990), (Zingales, 1994, 1995).

Later, Dyck and Zingales (Dyck, Zingales, 2004) depicted private benefits of control as “some value, whatever the source, is not shared among all the shareholders in proportion of the shares owned, but it is enjoyed exclusively by the party in control”.

Current literature suggests that in a company a stakeholder of private benefits of control is either a block holder or a managing party. From the one hand, block shareholders can obtain exclusive benefits inaccessible to minorities. Potentially, they can refuse welfare maximization through the increase of a firm capitalization and opt for the deliberate undermining of minority rights to increase their personal benefit. For example, block shareholders can take a management position and substantially increase compensation for themselves (Shleifer, Vishny, 1986). Besides, there is a variety of approaches for the control party to gain personal benefits, such as property theft or illegal assets and inventory liquidation for understated prices.

From the other side, managers may also use their position to manipulate the business in a way that is beneficial exclusively for them to the detriment of shareholders (Dyck, Zingales, 2004). Top management could purchase amenities or have excessive compensation. To protect themselves from losing the access to private benefits of control, managers could preventively undertake inefficient actions such as “golden parachute” to be insured in case of the possible

acquisition. (Hwang, Hu, 2009) provided an evidence that potentially, managers could get more private benefits from their position than controlling shareholders, which makes managers-owners more dangerous than ordinary block shareholders.

Although, it is merely impossible to understand what portion of PBC is related to a certain source, many authors made an attempt to provide a taxonomy of them. In accordance with the commonly accepted classification, private benefits could be divided into tangible and intangible. Tangibles include compensation or purchase of amenities, while the latter is best described by (Jensen, Meckling, 1976): *«benefits he derives from pecuniary returns but also the utility generated by various non-pecuniary aspects of his entrepreneurial activities such as the physical appointment of the office, the attractiveness of the office staff, the level of employee discipline, the kind and amount of charitable contributions, personal relations (“friendship”, “respect”, and so on) with employees, a larger than optimal computer to play with, or purchase of production inputs from friends”.*

(Ehrhardt, Nowak, 2001) examined the existence of private benefits of control in Germany. The authors derived a typology of PBC from the literature and empirically measured which of them take place in Germany. According to their study, there are three possible ways of extracting private benefits for block holders, namely: excessive management compensation (self-dealing), enjoyment through association with luxury goods (amenities) and other social benefits and amusements, valuable in small towns where companies operate (reputation). Complete taxonomy of private benefits by Ehrhardt and Nowak is shown in the table, presented in appendix 2.

Some authors highlight that private benefits could be extracted by individuals. During the period of privatization, large foreign investors might strive for acquiring local companies to create so-called “pioneer’s advantage” for themselves. The purpose of this action could be the desire of the acquirer to maximize the welfare of its current shareholders to the detriment of target’s shareholders, right up to the instant shut-down of the target company just after the acquisition (Cornelli, Li, 1997). In accordance with another taxonomy, the effect of private benefits of control on shareholders’ welfare is ambiguous. The presence of PBC may affect investors both positively and negatively (Sepe, 2010).

## **2.2. Measurement of Private Benefits of Control**

Private benefits of control by their nature imply immeasurability. (Muravyev, 2007) mentions that if PBC could be easily evaluated they would instantly lose their “privacy” and minorities could conduct a lawsuit against the controlling party or the corporation. As soon as



there is no such approach to determine exact value of PBC, while analyzing private benefits of control authors pay special attention to an approach upon which PBC are measured. Current theory suggests two approaches to measuring private benefits of control: the first one studies the premia paid for control blocks, while the second one measure the difference in prices between voting and non-voting shares, both of which will be further depicted. In two following sections, the most topical papers, where both approaches were deployed are presented.

### *2.2.1 Control premium approach*

The first attempt to estimate PBS quantitatively is undertaken by (Holderness, Barclay, 1989). Authors assume that unless welfare of a company is distributed evenly among shareholders, control block should be traded with discount due to additional expenses associated with holding the block. Otherwise, positive premia signaling that the block provides an acquirer with exclusive benefits. Analyzing 63 block trades on New-York stock market the authors conclude that the premia of at least 20% to the pre-announcement day is paid in 80% of trades.

Later (Dyck, Zingales, 2004) formalize this approach and apply it on a sample of 393 trades in 39 countries from 1990 to 2000. One of the drawbacks of the approach suggested by (Holderness, Barclay, 1989) is its' inability to distinguish private benefits of control from the natural growth. News regarding the new owner may have the positive impact on investors' expectations about future synergies with the consequent increase of premia paid. Later, many papers in which authors tried to alter this approach were published. The most noticeable are (Albuquerque, Schroth, 2009) and (Barak, Lauterbach, 2011), who suggested to calculate premia as the sum of average private benefits for a buyer and a seller.

Further development of this approach was conducted with the paper of (Albuquerque, 2009), who proposed new structural model, that according to their study solved three main problems encountered with the "control transfer" approach. First, they pointed out that the solution for the problem depicted earlier by (Dyck, Zingales, 2004) does not embody the possibility of simultaneous increase of private benefits of control with the share price. Second, the authors criticize the approach in which the discount devoted to an acquirer of the block is taken into account as a negative realization of the premia paid for buying the controlling stake. Third, it is mentioned that many studies are potentially subjects to the biasness due to the fact that private benefits of control are analyzed on in the target companies in which the controlling block was sold.

Despite the criticism of the approach proposed by (Dyck, Zingales, 2004) and (Albuquerque, Schroth, 2009), this approach is used in a large number of studies related to a wide

range of objectives, since it allows to specify the nature of premia paid. Unlike the voting premium approach, control premium paid in a transaction is a consequence of the fact that the control was transferred at a price higher than the market price. Below we will consider the number of papers where this approach to measure private benefits of control is deployed.

(Burkart, Gromb, Panunzi, 2000) develop the model for the analysis of control transfer transactions in companies with one dominant minority shareholder. An empirical study shows that direct sales of a controlling stake leads to higher private benefits of control, in distinction from acquisitions through buying company shares on the market. Despite this fact, often the parties prefer direct selling of a controlling stake to exclude the free-riding problem of the dispersed shareholders.

In their study, (Hanouna, Sarin, Shapiro, 2001) attempt to separate the cost of controlling the company from the costs related to the cash flow rights retention. Using the sample of 9,566 acquisitions of public companies in the period from 1986 to 2000 from G7 countries (US, Japan, Germany, France, Italy, UK and Canada), the authors analyze the premium paid in deals. They conclude that in the U.S., buying a stake that provides its' owner with the majority votes associated with the average premium of 20-30% which is significantly more than the price paid for a similar block that does not provide such voting power. Similar findings are made for other countries in the G7, where the median value of the premium is also at the level of 20-30%. The feature of this study in its attempt to consider countries in the context of market-oriented and bank-oriented types. According to the authors, bank oriented countries are less exposed to the agency problem and, as a result, have a smaller size of private benefits of control.

(Dyck, Zingales, 2004) construct the measure for the PBC based on the sample of 393 control transactions in 39 countries. The authors reveal that the average value of private benefits of control equals 14% and ranges between -4% and +65%. Major finding of the paper is the analysis of institutions that are the most important in curbing private benefits of control. In accordance with the research, high degree of statutory protection of shareholders associated with lower levels of private benefits of control.

Based on a sample of 250 transactions, conducted in the U.S. between 1990 and 2006, (Albuquerque, Schroth, 2009) examine the major determinants of private benefits of control. According to the results of the analysis, it is revealed that the size of the stake which is being sold has the greatest influence on the size of private benefits of control. In addition, cash on the balance sheet of the company also increases the size of private benefits of control, confirming the

hypothesis of aggravation of the agency problem due to a large amount of the free cash. Suggested evidences support the idea that the block premium or discount is dependent on the controlling block holder's ability to clash for the tender offer for the target's stock.

The topic of private benefits of control, and in particular their study based on the control premium approach, started its extensive development with the investigation of developed markets. The existence of working minority shareholders' protection mechanisms should exclude the possibility of their expropriation by the holders of controlling stakes. Many studies conducted based on the U.S. and European companies' samples indicate the ineffectiveness of the legislative system with regard to excluding the possibility of expropriation. In addition, agency problem remains essential. The number of papers demonstrates the fact that managers of the company use their power for personal enrichment purposes.

(Poulsen, 2011) presents an analytical framework to determine whether the seller or the buyer in block transactions value private benefits higher. To provide such analysis, the author tests the following hypothesizes:

H1: Absent toeholds, the transaction premium increases (or decreases) in the block's relative voting power

H2: The transaction premium increases in the presence of toeholds

While using voting rights as the vehicle for PBC, the authors find that the selling shareholders in block transactions are tend to attach more value to private benefits than the buying party does.

(Belanes, Raoudha, Omru, 2011) test the control premium approach, which had proved its validity on the U.S. market by (Barclay, Holderness, 1989) on the French market. Drawing on an extensive sample of 110 block trades, the authors highlight the simultaneous relationship between block ownership and private benefits. In this paper researches use two proxies for PBC, namely: excessive compensation of managers and the amount of related-party transactions. The authors concluded that despite the traditional assumptions of the literature, the relationship between block ownership and the size of PBC is self reinforcing rather than unidirectional.

(Barak, Lauterbach, 2011) set a goal to adapt the standard model proposed by (Holderness, Barclay, 1989) of private benefits of control for partial control transactions. Based on a sample of 54 Israeli companies, the researchers demonstrate that using the standard approach for the deals with partial control transfer of control can shift the PBC estimate by more than two times. The

adaptation proposed by the authors of this approach avoids bias in the measurement of PBCs by the control transfer approach.

Same goal is set by (Intrigano, 2012) who estimates the benefit of control based on a sample of Italian companies, given the fact that previous empirical researches evidenced high private benefits of control among Italian companies. The main idea of the research is to show that Consolidated Law on Finance introduced in 1998 significantly changed the protection of minority shareholders. The author empirically proves that the average percentage of PBC dropped to 5% of the capital. This conclusion, however, is based on the assumption that the Consolidated Law requires several years to produce the desired results. Despite the meaningful conclusion, the author did not provide any information regarding the process of isolating the effect of the new law from other macro-factors affecting the amount of private benefits of control.

(Albuquerque, Schroth, 2010) by using the modified approach of (Holderness, Barclay, 1989) developed the search model of controlling block trades, which can value the illiquidity of stakes. Proposed model considers several illiquidity dimensions. Within the first dimension, cases when a block holder is forced to sell her stake to a less efficient acquirer are highlighted. Second dimension considers the situation when a sale occurs at a fire sale price. And third implies that absent a liquidity shock, a trade could occur only when a potential acquirer arrives. Based on the sample of U.S. companies, the authors give better estimate of value of control, which includes liquidity/illiquidity estimate of the controlling stake.

Of special interest for the current research are developing countries, and in particular those that are on the stage of transition economy. (Dyck, Zingales, 2004) noted that in countries with the underdeveloped mechanisms for regulating the market for corporate control, the size and the magnitude of PBC may significantly exceed those in developed countries. Number of studies for emerging markets will be considered below, in which the PBC assessment using the control premium approach was preferable.

(Weifeng, 2008) investigates the effect of the ownership structure on the size of private benefits of control. By means of the control premium approach, the author measures the size of PBC, equal, on average to 18,52% of the value of the company in China and found a significant relationship between the presence of a controlling shareholder and the amount of private benefits of control. The research is conducted based on cases on Chinese market, where there were stock transactions which both involved the transfer of control and did not. Arguing about the main determinants of private benefits of control, the author notes that the size of a firm measured as a

natural logarithm of all total assets of a company has a positive relationship with the size of private benefits of control.

(Gianfrante, Zanetti, 2010) conduct an analysis of the banking sector in 40 countries to determine the impact of legislation on the size of private benefits of control. According to the research, the regulation of banks has a significant impact on the possibility of expropriation of minority shareholders. Depending on the level of the development of legislative initiatives, the premiums paid for the deals are ranged from -15% in the Czech Republic to 67% in Turkey.

The effect of ownership concentration on the size of private benefits of control was also confirmed for the Romanian market (Dragota, Lipara, Ciobanu, 2013). Using the regression analysis, the authors prove the hypothesis that there is positive relationship between stock liquidity and the size of the absorbed share. At the same time, number of hypotheses concerning the relationship between private benefits of control and the size of the company, the country of origin, the form of organization of the absorbed party, was rejected. The study results in the main finding, stating that the presence of a shareholder owning more than 33% of the company's shares significantly increases the size of private benefits of control.

(Byrka-Kita, Czerwinski, 2015) analyze Polish market to determine the value of private benefits of control in the period from 1996 to 2014 by using the research methodology proposed by (Holderness, Barclay, 1989). Based on the analysis of 175 transaction, where more than 5% of votes were sold, the authors empirically prove that the block premium in Poland market ranged from 4.41% to 10.52%.

(Jurfest, Paredes, Ruitort, 2015) research the Chilean market for private benefits of control and attempt to determine the relationship between reforms carried out in the country on PBC. In 2000, takeover rules of the Chilean market have been changed from the market rule, which stated that the market could be sold for any price. Based on a sample of 43 acquisitions in Chile, the authors demonstrate that PBC, as a part of the premium paid during the control transfer, felt by approximately 1/3 as a result of legislation changes.

Reviewed papers confirm that private benefits of control are of the concern for the researchers studying developed as well as emerging markets. Moreover, control premium approach is being actively used to investigate the presence of private benefits of control. However, worth noting, that the nature of this approach does not imply the possibility of effective search of relationships. Most of the studies are concentrated on the analysis of the premia determinants and on subtraction of the PBC effect on this premium.

### *2.2.2 Voting Premium approach*

The second approach to measure PBC is based on the difference between voting and non-voting shares. First who noted this difference were (Lease et al., 1983). Generally, no arbitrage principle implies that two shares providing its' holders with similar income should be equally priced. However, should the voting right be estimated by the market with the premia, it should provide it holder with additional cash flow. In further studies, the difference between the price of two types of shares is explained by the difference in voting rights or liquidity of shares. Differences in voting rights are considered either in the context of the control contest model or the possible expropriation of non-voting shareholders by voting (Mutavyev, 2007).

Currently, the most common explanation for this difference in prices was suggested by (Grossman, Hart, 1988). According to their ideas, investors, holding voting shares demand premia for their stakes, having an understanding that their stake might be crucial for establishing control over the company and extracting private benefits of control. The same year, Italian economist Castelino noted essential difference in prices of voting and non-voting shares on Milan stock exchange (Castelino, 1989). Later, Zingales while exploring PBC as a part of control contest model suggested formalized approach for valuing private benefits of control based on the estimation of the voting premium. In accordance with this model, initial owner of a company arriving at a decision of initial public offering has an opportunity to register two share classes: voting and non-voting. This mechanism admits her to sell cash flow rights and voting rights separately, thereby producing possibility of selling private benefits of control for premium. This approach was later adjusted for quantifying PBC by (Zingales, 1995). In his paper, he described three determinants of PBC: the relative size of the private benefits of control, the probability of a control contest, and the fraction of the voting stock in the company's equity.

The use of this model is preceded by the number of assumptions (Muravyev, 2007). First, a company must have two types of shares, the same in all respects, except the right to vote. Secondly, there must be a struggle in the market for gaining control over the company. Thirdly, the offer to purchase a company's stake should include both voting and non-voting shares.

Voting premium approach evolved in analyses of developed markets, where companies often issued two classes of shares to retain control over the company without additional investments. The main rationale behind issuing two classes of shares often happens to be the desire of founders to preserve private benefits, whilst increasing capitalization. (Erhardt, Nowak, 2003) cite the German market as a bright example, where most of the companies with dual class structure

in the former were controlled by families. This situation is common for the countries with developed mechanism of corporate governance and mature market economies.

After Zingales's paper was published, the further development of the voting premium approach was evolved by (Rydqvist, 1996). The author studies the influence of ownership structure on the voting premium. The empirical analysis of the Swedish market reveals that the voting premium is substantially higher in companies where the two largest shareholders have equal stakes in a company. According to the authors conclusions, it happens due to the permanent contest over control among shareholders, which is thereby confirms the idea of control contest model, suggested by (Grossman, Hart, 1988).

(Gompers, Ishii, Metrick, 2008) by using the voting premium approach quantify the relationship between the presence of an owner-manager and a firm value in the US market. By deploying regression analysis, the authors receive a significant positive relationship between the firm value and the concentration of cash flow rights in hands of managers-owners and negative with the increase in their rights to vote. Although the findings of the study do not directly indicate the relationship between PBC and firm value, it can be concluded that the size of the voting premium indirectly affects it, being a market of the existence of the control contest and consequently of private benefits of control.

Based on the voting premium approach, (Guadalupe, Perez-Gonzalez, 2010) investigate the influence of competition on private benefits of control. The authors test this effect by using two indices measuring the level of product and input market anti-competitive regulations. By using the dataset of 586 firms in 10 developed and 6 emerging markets, they present the following findings: (1) higher intensity of competition within the country leads to lower estimates of private benefits of control (2) competition reduces the dispersion of PBC (3) competition has a better impact on reducing PBC in countries prominent in weak-rule-of-law, in manufacturing industries and mostly in less-profitable firms.

Interesting results were obtained by (Holmen, 2011) who investigates the reaction of the Stockholm stock market to lifting the ban on trading for foreign investors in 1993. After new law was introduced, companies with two classes of shares started to bargain at a discount. In his study, the author stresses two hypotheses based on a sample of 208 companies:

H1: The discount at which company is being traded associated with the presence of non-voting shares

H2: Voting premium was increased after the new law was introduced

The author claims that the period after 1993 is not characterized by an increase in the expropriation of shareholders. Thus, foreign investors expect that in companies with two classes of shares there will be an expropriation of minority shareholders, regardless of the real fact pointing this out.

(Salzman, Soypak, 2017) examine how culture relates to the size of private benefits of control. As the cultural determinants, the authors choose two basic factors of organization behavior of Hofstede: the distance of power (the degree of participation in decision-making) and individualism-collectivism in society. The study tests hypotheses regarding the influence of the power distance and individualism-collectivism on the size of PBC, measure by the voting premium approach. Both of the hypotheses were not rejected. The first one testifies that the higher participation of the authorities in life of the society, the more uneven distribution of benefits among shareholders of a company will take place. The second confirms the positive impact of individualism in society on reduction of private benefits of control.

The use of two classes of shares is also common in emerging markets. Unlike developed countries, in countries where economy is still in transition, two classes of shares in companies can be used as a government step toward maintaining the control over the corporation. There is a number of studies, including the study of the private benefits of control and their measurement by using the voting premium approach, which will be discussed below.

(Saito, Silveira, 2010) analyzed 87 Brazilian companies between 1995 and 2006, attempting to determine how the introduction of tag-along right and the availability of family control are interrelated with the size of PBC. The authors by using voting premium approach conduct the regression analysis and confirm the hypothesis regarding the negative impact of the new law on the size of private benefits of control. Family control, in accordance with these results, leads to larger PBC. The authors of the study, further stress the hypothesis regarding the negative influence of the state ownership on the size of PBC. Despite the reasonable assumption that the presence of a state among shareholders should reduce the probability of takeover, this hypothesis was rejected.

The study of the Brazilian market is further extended by (Souza, Fernandes, 2014), who set the goal to measure the size of private benefits of control by using the voting premium approach. Conducted analysis revealed that the average voting premium among Brazilian companies over the period 2003-2013 was equal to 11.41%. Among the statistically significant determinants of PBC were liquidity, dividend payout, tag-along right, quality of corporate governance and the presence



of a controlling shareholder. Other studies of the Brazilian market (Fernandes, 2014), (Scherrer, Fernandes, 2016) also use the voting premium approach.

(Muravyev, Berezinets, Illina, 2014) examine the impact of size and composition of the board of directors on corporate governance, by using private benefits of control as an indicator of problems related to the corporate governance. After analyzing the sample consisting of Russian companies and having two classes of shares in the period from 1998 to 2009, the authors made the number of important conclusions for the corporate governance topic. Among other key findings of the paper are: confirmation of the preferred use of private benefits of control as a measure of corporate governance issues, non-linear dependence of performance on the size of the board of directors and the positive relationship between the number of independent directors and PBC.

The existence of a multitude of papers deploying different approaches to evaluate private benefits of control suggests that none of the approaches is universal and should be selected in accordance with the research goal and objectives. Nevertheless, each of the approaches has its pros and cons. For example, (Nicodano, Sembenelli, 2004) criticize the control premium approach in their research, claiming that it gives a biased assessment. The authors empirically prove that the model for estimating PBC through premiums in block trades underestimates PBC by 10.9%. In addition, an important drawback of this approach is the related difficulty in separating the effect of private benefits of control from the effect of the expected increase in cash flow resulting from synergies. In this regard, the thorough analysis of each trade is required in understanding the nature of premium in transactions.

At the same time, (Benos, Weisbach, 2004) note that the voting premium approach can potentially overestimate the size of private benefits of control. The fact of the presence of two classes of shares indirectly indicates about the presence of PBC, and therefore the sample of companies that have voting and non-voting shares will include a disproportionately large number of companies with large private benefits of control. Voting premium approach is also criticized by (Barak, Lauterbach, 2011). Following their arguments, the weak side of this approach is that it leads only to averaged estimation. And, finally, (Weifang, 2008) argues that the reason for rejecting the voting premium approach is its inapplicability on Chinese market, where companies were prohibited from issuing two classes of shares until recently.

### **2.3 Relationship between private benefits of control and firm value**

Ever since the principal-agent problem has been introduced, opinions regarding the effect of the controlling owner divided into two camps, because, in theory, majority shareholder may

influence the firm value differently. With respect to the first point of view, majority shareholder may be a constraint for the management to use the capital in favor of their personal interests. The second point of view states that the majority shareholders will have the opposite effect, by providing the controlling shareholders with an ability to expropriate minorities. (Jensen, Meckling, 1976) were first followers of an idea of monitoring role of controlling shareholder. They considered the problem of the ownership concentration and its' relationship with performance. Among other conclusions, authors asserted positive impact of ownership concentration on firm value. Same idea was proved by (Shliefer, Vyshny, 1986) who also found positive relationship between ownership concentration and firm performance. Others (DeAngelo, DeAngelo, 1985), (Grossman, Hart, 1988), (Harris, Raviv, 1988) analyzed this problem within the problem of deviation from "one share – one vote" structure. These authors defended the opposite. According to their studies, any deviation from "one share – one vote" structure is a sign of an expropriation. In a situation where one share corresponds to one vote, the struggle for control will help to form the most effective team of managers and the fair distribution of the private benefits of the buyer to a controlling stake among all shareholders. Conclusions of (Holderness, Sheehan, 1988) based on the empirical analysis of 114 New York companies, also contradict the assertion that majority shareholders expropriate minorities. The size of the investment, the reorganization of company's structure, profitability and the Tobin's Q are equal for the companies with concentrated and dispersed ownership structures, which indirectly indicates the absence of expropriation of minority shareholders.

It is important to note that the very fact of the existence of private benefits does not lead to inefficiency in company's processes with the consequent decrease of performance of firm value. First of all, private benefits of control can be the most effective way of obtaining additional value. In a situation where the controlling shareholder does not see a possible strategy that allows for additional profit, the acquirer, who is aware of this possibility, can effectively use it. In this situation, the overall welfare of all shareholders will be increased. Second, their presence may lead to a more intense struggle for control, also potentially improving the position of all shareholders (Grossman, Hart, 1980).

In accordance with another point of view, the presence of a majority shareholder can lead to the opposite effect, in which the controlling shareholder will own the private benefits of control to the detriment of minority shareholders. As noted by (Fama, Jensen, 1983), a company where the manager simultaneously holds the position of the controlling shareholder has the opportunity to

expropriate assets and cash flows. Concentration of the ownership in the hands of the management also reduces the probability of a successful takeover of the company, forcing the management to protect their positions (Stulz, 1988).

It is known that the presence of two types of shares may indicate the existence of private benefits of control, as it allows an owner to retain voting rights without additional investment in increasing her stake. In this regard, two types of shares could be considered as an indirect indication of PBCs. To give the better outlook on the question, dual class structure as a concept is depicted below.

Dual class stock structure is the type of share division, which implies different voting rights for different classes of shares. The result of this division is the deviation from “socially acceptable” one share – one vote structure with the further inequality among shareholders. As a result, scholars paid attention to this concept. The idea that dual class stock structure might signal about the presence of private benefits of control was first suggested by (Castellino, 1989) who noted that voting and non-voting shares trade at different price, which contradicted to established principle of financial economics. According to the fundamental principles, share price ought to reflect the present value of future dividends, discounted by the discount factor reflecting the risk premium.

From the other hand, (Alchian and Demzets, 1972) state that: “in fact, we invest in some ventures in the hope that no other stockholders will be so “foolish” as to try to toss out the incumbent management. We want him to have the power to stay in office, and for the prospect of sharing in his fortunes we buy nonvoting common stock.

Below, a set of papers, discussing the issue of private benefits of control in the context of the dual class structure companies is presented.

Among one of the most perceptible studies is the paper of (Burkart, Lee, 2008). In their research they mention that dual class stock structure could reduce the free-rider issue widely-spread in many firms with single class share structure and enhance the takeover activity, yet only when there is only one bidder.

In 2003, based on a sample of 105 IPOs on German stock market from 1970 to 1991, (Erhardt, Nowak, 2003) empirically prove that dual-class companies underperform in comparison with identical companies, having only voting shares. Authors show that the separation of voting and cash flow rights through the issuance of preferred shares is often used to create controlling structure, where private benefits will be preserved. Underperformance is revealed not only in terms

of investors' expectations, namely share price, but also in operational performance. Profitability of those companies is, on average, 4% lower than in identical companies without cash flow and voting rights separation.

After analyzing 493 companies on US market, 108 of which unified share structure, (Maury, Pajuste, 2007) conclude that the probability of a transaction directly depends on the number of factors. The authors are confident that the decision to abandon non-voting shares depends on the size of private benefits of control that the owner might potentially lose. Even though there is a lack of efficiency discrepancy between companies with dual and single class structures, the rejection of non-voting shares leads to an increase in firm value during the first year after the unification procedure.

Same results were obtained by (Gompers, 2008), who constructs and analyzes the list of US dual-class companies and further uses it to research the relationship between insider ownership and firm value. The author separately evaluates cash-flow and voting rights and by deploying single-stage regression find that increase in insider's cash-flow rights and decrease in her voting rights leads to increase of the firm value.

(Doidge, et al, 2009) analyzed a sample of 4,275 non-financial organizations with a capitalization higher than \$10 million. In their paper, they test two hypotheses:

H1: Control wedge – the difference between voting rights and control rights leads to a decrease in firm value

H2: Foreign companies traded in the US stock market have a higher firm value

The fact that tested hypotheses are not rejected indirectly suggests that the presence of PBCs in this case, described by the concentration of control in the hands of the owner and the refusal of listing on the US exchange, leads to a decrease in firm value.

More detailed examination of private benefits of control started with the studies describing the relationship between concentration of ownership on firm value. In this regard, at this moment there are many studies aimed at obtaining results on the relationship between the degree of concentration and firm value, some of which will be discussed below.

(Maury, Pajuste, 2005) demonstrate that the firm value depends on the interaction between the owners of the largest stakes of the company. The authors of the research confirm the widely spread in literature opinion that the presence of a controlling shareholders leads to a decrease in firm value. An interesting observation is made by the authors in regard of the monitoring function of the third major shareholder in the company. According to the research, a coalition of two

holders of the largest blocks of shares (>10%) adversely affects the firm value due to their potential ability to engage in the expropriation of minority shareholders. However, the presence of a third major shareholder leads to an increase in firm value, as it starts to perform a monitoring role in managing the company and prevents organization of coalitions.

(Hoi, Robin, 2010) accomplish the research regarding the determinants of firm value. In their study authors seek to understand how the proximity of the largest shareholder (whether the controller has a top executive position, a member of the board or an outside stakeholder) influences the firm value. By using as a proxy of the firm value market-to-book ratio, Hoi and Robin reveal that ownership concentration coupled with the high control proximity reduces firm value. Thus, the more the control party participating in managing the company, the more opportunities it has for the expropriation of minorities.

However, (Liu, Uchida, Yang, 2011) mention that a manager-owner, on average, had a positive effect on the company performance during the post-crisis period. In accordance with their empirical study, manager-owner restricted expropriation in companies, where government owned the stake.

(Krausel, Lucas, 2010) revisit the studies of (La Porta, et al, 2002) and (Maury, Pajuste, 2005) exclusively for the US market, demonstrating the significant negative relationship between concentration of ownership and Tobin's Q.

(Nguyen, Nielsen, 2012) use alternative estimates for private benefits of control. In order to conduct an analysis, they gather the data about 385 deaths of controlling shareholders. After identifying 115 of them as "sudden", the authors conduct an event study analysis. On average, the market reacts negatively on a death of the shareholders with a low ownership stake (-5%) and positively on a death of a holder of the large stake (+4%). Positive and significant relationship between a manager-owner and a firm value levels with the increase of manager-owner's stake. The utilized approach excluded the problem of endogeneity in relationship between firm value and ownership.

Some of the papers where the research between private benefits of control and a firm value on emerging markets was conducted has to be mentioned.

(Abdullah, Shah, Khan 2012) proved that in Pakistan controlling shareholder may have a monitoring role. Tobin's Q in such companies is significantly higher in companies with a shareholder, holding more than 50% of a stake. Same idea was proved by (Muravyev, Berezinets, Ilina, 2014). In this paper they found out significant relationship between the size of private

benefits of control and Tobin's Q. At the same time Malaysian researches do not find significance in relationship between the ownership concentration and firm value (Hassam et al. 2016).

(La Porta, et al., 2002) introduces the model aimed at testing the effects of legal protection of minority shareholders and of cash flow ownership by a controlling shareholders on the valuation of firms. By using this model, the authors tested a sample of 371 large firms from 27 wealthy economies. In accordance with this model, better protection of minority shareholders leads to a higher valuation of firms. By using Tobin's Q as a proxy of firm value, they test the following hypothesizes:

H1: Firms in more protective legal regions should have higher Tobin's Q

H2: Firms with higher cash flow ownership by the controlling entrepreneur should have higher Tobin's Q

H3: Firms with better investment opportunities should have higher Tobin's Q

H4: For the quadratic cost-of-theft function, the effect of the entrepreneur's cash flow ownership valuation is lower in countries with good investor protection.

Based on a sample of 371 large companies in 27 developed economies, the authors show that more developed protection mechanisms for minority investors have positive influence on firm value. Perfect legal protection stimulates individuals to invest more directly in companies, having the positive impact on the whole stock market.

(Belkhir, Boubaker, Derouiche, 2014) assert that for the companies with dual-class share structure excess of cash might lead to increased agency costs and consequent reduce of firm value. Large cash accounts increase the potential risk that it will be used in favor of management's personal interests.

Later, (Cheng, Huang, 2015) suggest the index to measure private benefits of control, which is based on thirteen characteristics of the organization, the CEO of the company and the industry in which a company operates. By using this indicator of PBC presence, the authors test several hypotheses regarding the negative relationship between PBC and (1) stock return, (2) firm value expressed through Tobin's Q, (3) operational effectiveness and positive with (4) leverage, (5) CEO's compensation. According to the results of the study, the authors do not reject any of the stated hypotheses. Thus, this study also confirms the possible negative relationship of private benefits of control with Tobin's Q.

Conducted review of the literature exploring the relationship between private benefits of control and different proxies of firm value could be condensed into the results presented on table 2.1 below.

**Table 2.1 Literature review of papers studying the relationship between PBC and firm value**

| <b>Dependent Variable</b> | <b>Expected Sign</b> | <b>Empirical Support</b>   |
|---------------------------|----------------------|--|
| Profitability             | +                    | Private Benefits and Minority Shareholder Expropriation. Ehrhardt, Nowak (2001)  |
| Firm Value                | -                    | Private Benefits and Minority Shareholder Expropriation. Ehrhardt, Nowak (2001)  |
| Firm Value                | -                    | Extreme Governance An Analysis of Dual Class Companies in the United States. Gompers (2008)  |
| Firm Value                | -                    | Agency Conflicts, Controlling Owner Proximity, and Firm Value. An Analysis of Dual-Class Firms in the United States. Hoi, Robin (2010) |
| Firm Performance          | -                    | Blockholder Dispersion and Firm Value. Konijn, Krausel, Lucas (2010)   |
| Firm Performance          | +                    | Corporate Governance and Firm Value During the Global Financial Crisis. Evidence from China. Liu, Uchida, Yang (2011)                  |
| Firm Value                | -                    | Firm Performance and the Nature of Agency Problems in Insiders-Controlled Firms. Evidence from Pakistan. Abdullah, Shah, Khan (2012)   |
| Firm Value                | -                    | Private Control Benefits and Corporate Performance and Policies. Chen, Huang (2015)  |

As it could be inferred from the table, there is a number of studies exploring the relationship between private benefits of control and firm performance or profitability. However, based on the analysis of the literature on firm valuation approaches, it is known that in most cases researchers use same proxies for value and performance.

Based on the analyzed literature, it is assumed that private benefits of control should negatively relate to firm value. This is an intuitive assumption, reflecting the primary concept of private benefits of control, stating that a controlling party has exclusive preferences, which should, if any, disturb minority shareholders.

### **Summary**

In this chapter, main emphasis is placed on different approaches to measure private benefits of control and to corresponding analyses which use these approaches. First approach, initially

suggested by (Holderness, Barclay, 1989) is used in a great number of papers. Those papers, however, are mostly aimed at determining the absolute value of private benefits of control and their determinants rather than at their potential impact on corporate governance, firm performance or firm value, e.g. (Dyck, Zingales, 2004), (Albuquerque, Schroth, 2009), (Poulsen, 2011), (Barak, Lauterbach, 2011), (Intrigano, 2012), (Weifeng, 2008) and others. While another approach, based on proxying private benefits of control through the voting premia, is mostly used by the researches to find a relationship between private benefits of control and other subsequent changes in company's characteristics, e.g. (Erhardt, Nowak, 2003), (Gompers, Ishii, Metrick, 2008), (Holmen, 2011), (Muravyev, Berezinets, Ilina, 2014).

In the study of the relationship between private benefits of control and the value of the firm, some papers, aimed at finding a link between PBC and the value of the company were identified. The first group of papers confirms that the presence of two types of shares indicates the intention of the owners of the company to retain private benefits of control in their hands, which causes corresponding feedback from investors. The second group of papers indicates that the concentration of the company in hands of one or two owners will lead to the subsequent expropriation of minority shareholders, also adversely affecting the value of the company. The third group of studies notes the existence of private benefits of control in emerging markets, and confirms the impact of government regulation on the magnitude of private benefits of control and the value of the company.

Given the specifics of each approach used for measuring private benefit of control, these differences are to be accounted in accordance with the research goal. As it was obtained from the comprehensive literature review, researches are tend to use voting premia as a measure of private benefits of control, while analyzing their effect on a company. In this paper, voting premium will also be used as a measure of private benefits of control due to two reasons. First, the purpose of the paper is to study the relationship between PBC and the firm value, whereas in Russia and many other countries two classes of shares can be freely traded on the market. Second, considering the possibility of applying each of the methods on the Russian market, it is important to note that by analyzing the trading history of 99 Russian companies over the period between 1997 and 2005, (Muravyev, 2007) confirmed the use of the voting premium approach with the corresponding control contest model. In this paper, following the analyzed literature, voting premium approach will be used to find the relationship between private benefits of control and firm value.



Given the fact that voting premium considers the companies with dual-class structures, of special interest will be the analysis of companies, where occurrence of preferred shares was caused by different factors. In Russia, dual class share structure was introduced in 1992 during the privatization process as a way for the government to protect their rights to manage corporations. This program was performed by using three different methods. One of them implied creating a public enterprise with an obligation to devote 25 percent of the charter capital to preferred shares, which were further distributed among employees and retirees (Muravyev, 2007). In distinction from Russia, in developed countries such as Germany, introduction of preferred shares reflected the desire of owners to preserve their private benefits of control at the expense of the new minority shareholders (Ehrhardt, Nowak, 2001). In this study, we, therefore, will be interested how the relationship between firm value and private benefits of control are differ in Russia, where the dual class structure was established as a government initiative during the privatization and in Germany, where the companies established dual class structure to attract new capital while preserving their private benefits of control by the family owners.

## CHAPTER 3. EMPIRICAL STUDY

### 3.1 Hypotheses and methodology

The main purpose of this research is to determine relationships between private benefits of control and firm value for Russian and German markets. Based on the conducted literature review, the following hypotheses were stated:

*H1: There is a negative relationship between private benefits of control and firm value*

Relationship is expected to be negative both for Russian and German companies throughout the whole period.

Of the minor, but not the least concern is the question of how the relationship between private benefits of control and firm value, if any, differs in Russia and Germany. To stress that, the hypothesis stated below is tested:

*H2: Private benefits of control have different return to firm value in Russia and Germany*

Current research aimed at determining the relationship between firm value and private benefits of control is based on the following regression model:

$$Tobin's Q_{ij} = \beta_0 + \beta_1 VP_{it} + \beta_2 X_{it} + \beta_3 Y_{it} + u_{it}, i=1,2,\dots, N; t=2005,\dots,2011, \quad (3.1)$$

where

- $VP$  – measure of private benefits of control
- $X$  – vector of variables, reflecting corporate governance
- $Y$  – vector of variables, reflecting firm's financials
- $\beta_1, \beta_2, \beta_3$  – vectors of unknown coefficients
- $u_{it}$  – random variable

As it was confirmed in the first chapter, Tobin's Q is used as a proxy for the firm value. The ratio is calculated as the sum of the market value of equity and book value of debt divided by the book value of firm's assets (Chund, Pruitt, 1994).

$$Tobin's Q_{ij} = \frac{MVE_{it} + DEBT_{it}}{TA_{it}} \quad (3.2)$$

The independent variable is the voting premium, which represents private benefits of control and calculated as the difference between the price of common and preference shares and divided by the preference share price. To calculate the average prices, mean values of bid and ask over the period between May and August is used (Muravyev, Berezinets, Iliina, 2014).

$$VP_{ij} = \frac{P_{CSh_{it}} - P_{PSh_{it}}}{P_{PSh_{it}}} \quad (3.3)$$

All the control variables comprising the basic model are grouped in two categories. In the first group, all the factors related to the corporate governance and of the concern of this thesis are considered, while the second reflects firm's financials, which affect the firm value and should be controlled.

Following variables were included in the corporate governance group: board size (BD), independent directors (ID), share of the first largest shareholder (OWNER1), difference between the share of the first and the second largest shareholders (DOWNER). Variable, which characterizes board size is represented by the actual number of directors in a company. Number of independent directors is calculated as the ratio of independent directors to the board size. Variable, reflecting the stake of the largest shareholder is the share of the first largest shareholder. Difference between stakes of the first and the second largest shareholders is the stake of the largest shareholder less the stake of the second largest shareholder.

Financial variables are included in the regression within the baseline model constructed with respect to reviewed literature: leverage (LEV), size (SZ), research and development expenses (RD) and return on equity (ROE).

Indebtness may influence firm value both positively and negatively (Konijn, Kraussl, Lucas, 2009). From the one hand, high debt could be a disciplinary factor, reducing agency costs. On the other hand, excessive debt induces larger bankruptcy costs and prevents managers from accepting profitable investments (Myers, 1977). Leverage is calculated as debt/book value of assets (Vintila, Gherghina, 2014; Dah, 2016)

$$LEV_{it} = \frac{Debt\ BV_{it}}{Total\ Assets\ BV_{it}} \quad (3.4)$$

(Short, Keasey, 1999) note that size may have positive influence on firm performance, as soon as larger companies have easier access to funds. Size is represented by the natural logarithm of total assets (Wald, 1999; Pandey, 2004; Bates, Kahle, Stulz, 2009).

$$SZ_{ij} = \ln(TA_{it}) \quad (3.5)$$

Investments in R&D represent future growth opportunities (Jaffe, 1986) and proxied by the R&D expenditures to total assets ratio (Carosi, 2015).

$$RD_{it} = \frac{R\&D\ expenditures_{it}}{Total\ Assets_{it}} \quad (3.6)$$

Additionally, model will be controlled for return on assets measured by dividing net income by the book value of assets (Abdullah, Shah, Khan, 2012; Kuzey, Uyar, 2016)

$$ROA_{it} = \frac{Net\ Income_{it}}{Total\ Assets_{it}} \quad (3.7)$$

The table below represents expected signs for the coefficients of the control variables in accordance with the reviewed literature.

**Table 3.1 Expected sign of regression coefficients for control variables**

| <b>Independent Variable</b> | <b>Expected Sign</b> | <b>Empirical Support</b>  |
|-----------------------------|----------------------|---|
| BD                          | -                    | (Ilina, Berezinets, Cherkasskaya, 2013), (Adams, Akiyol, Verwijmeren, 2015) |
| ID                          | +                    | (Adams, Kirchmaier, 2015), (Dah, 2016)                                      |
| OWNER1                      | +                    | (Dacunto, 2014)   |
| DOWNER                      | +                    | (Konijn, Kraussl, Lucas, 2009)  |
| LEV                         | -                    | (Xiao, 2009), (Vintila, Gherghina, 2014), (Kuzey, Uyar, 2016)               |
| SZ                          | +                    | (Bates, Kahle, Stulz, 2009), (Abdullah, Shah, Khan, 2012)                   |
| RD                          | +                    | (Gleason, Klock, 2006), (Ahharwal, Zhao, 2007)                              |
| ROA                         | +                    | (Krausel, Lucas, 2010), (Kim, Park, Suh, 2017)                              |

### 3.2 Sample selection

As it was discussed in the previous chapter, the relationship between private benefits of control and firm value is analyzed both for Russian and German markets. In accordance with the research goal, while constructing the sample, the main emphasis is placed on the data, necessary for calculating PBC. For the purpose of this research, the voting premium approach to measure private benefits of control is chosen, which requires a company to have traded common and preference shares. The main rationale of the voting premium approach and related control contest model implies that the difference between common shares (voting) and preference (non-voting) could be a

feasible proxy for PBC. The following condition is viable for the German and Russian markets, forasmuch as the preference shares in both countries confines investors in the same manner with only minor differences as it is discussed below.

In Germany the status of preferred shares is specified in The German Stock Corporation Act (AktG). First, preference shares offer their owners the dividend premium and the guaranteed minimum of dividends paid. Second, preferred shareholders receive dividends before ordinary shareholders. Third owners of non-voting shares have exceptional rights if company is liquidated. Fourth, dividends cumulate over the years if company unable to pay them out. This, finally, results in a substantial advantage for the preferred stocks shareholders. Fifth, in special cases, preferred shares could be converted into common.

In Russia the legal status of preference shares is defined in the standard corporate charter. First, as it is in Germany, Russian preferred shareholders have the minimum level of 10% of company's annual net profit as the dividends guaranteed. Second, preferred shareholders receive dividends before common stockholders. Third, holders of preference shares are also guaranteed to receive superior rights in the case of company liquidation. Fourth, non-voting shares might be enfranchised, temporary granting its owner with the voting right, if dividends were not fully paid. Fifth, in special cases, as in Germany, preferred shares could be converted in common.

After the comparability of preference shares in Russia and German was assessed, sample construction process was conducted. The sample of companies was collected by using the Thompson Reuters Data and which satisfy the following criteria:

- Company has dual class stock structure
- Company was traded on RTS Stock Exchange and Deutsche Boerse Stock Exchange between 2005 and 2011
- Company does not relate to the financial sector

Dual class structure is an obligatory requirement for studying the voting premium. Chosen time period reflects the desire to obtain result which will reflect the relationship over the whole period, including pre-crisis, crisis and post-crisis. And as it is done in financial studies, financial sector was not included in both sample. Eventually, two samples of 105 and 36 companies for the Russian and German markets correspondingly is constructed. The main sources of information are presented on the table 2 and are discussed below.

Thompson Reuters Datastream is used to obtain both the information about the companies, which shares are publicly traded and the prices about the shares of those companies. Missing data is

manually collected from the websites of RTS Stock Exchange and Deutsche Boerse Stock Exchange.

Accounting information about both Russian and German companies is sufficiently obtained through the sources of Thomson Reuters Datastream.

Information about the supervisory board size and the ownership concentration in Russian companies is extracted from the SKRIN and SPARK databases and complemented by the hand-picked data from annual reports. Information related to the corporate governance in Germany is obtained from annual and quarterly reports.

**Table 3.2 Data sources of data used**

| <b>№</b> | <b>Data</b>                     | <b>Sources of information</b>                        |
|----------|---------------------------------|--|
| 1        | Share prices                    | Thomson Reuters Datastream / Stock Exchange Websites |
| 2        | Accounting data                 | Thomson Reuters Datastream / Annual reports          |
| 3        | Board size (Russia)             | SKRIN / SPARK  |
| 4        | Independent Directors (Russia)  | SKRIN / SPARK / Annual reports                       |
| 5        | Ownership (Russia)              | SKRIN / SPARK  |
| 6        | Board size (Germany)            | Annual reports                                       |
| 7        | Independent Directors (Germany) | Annual reports                                       |
| 8        | Ownership (Germany)             | Annual reports                                       |

The final samples consist of 119 and 36 companies for Russian and German markets correspondingly. Russian sample is represented by 5 industries, in accordance with the SIC classification: electric power (45%), manufacturing (12%), mining (12%), telecommunications (25%), transportation (6%). German sample is comprised of 9 industries: manufacturing (8%), construction (8%), services (4%), retail (12%), public administration (4%), transportation (3%), communications (2%), electric (3%), wholesale trade (8%). Substantially lower number of observations in German companies is explained by the specifics of the German markets, where in the most of the companies with the dual class stock structure, the whole stake of common stocks is held by families. Moreover, as of June 2002, most of the companies had to reevaluate advantages of dual class structure as soon as DAX index introduced new rule, implying that either ordinary or

preferred stock of the company might be included in the index. On Russian market, as opposed to German, both preferred and common stocks are freely traded on the stock exchange.

### 3.3 Descriptive statistics

In this section, descriptive statistics of variables is presented and further discussed. The section is divided into two subsections. Russian market is discussed in the first section, German in the second. In the second section, besides the main discussion about the German market, comparison of two markets is provided.

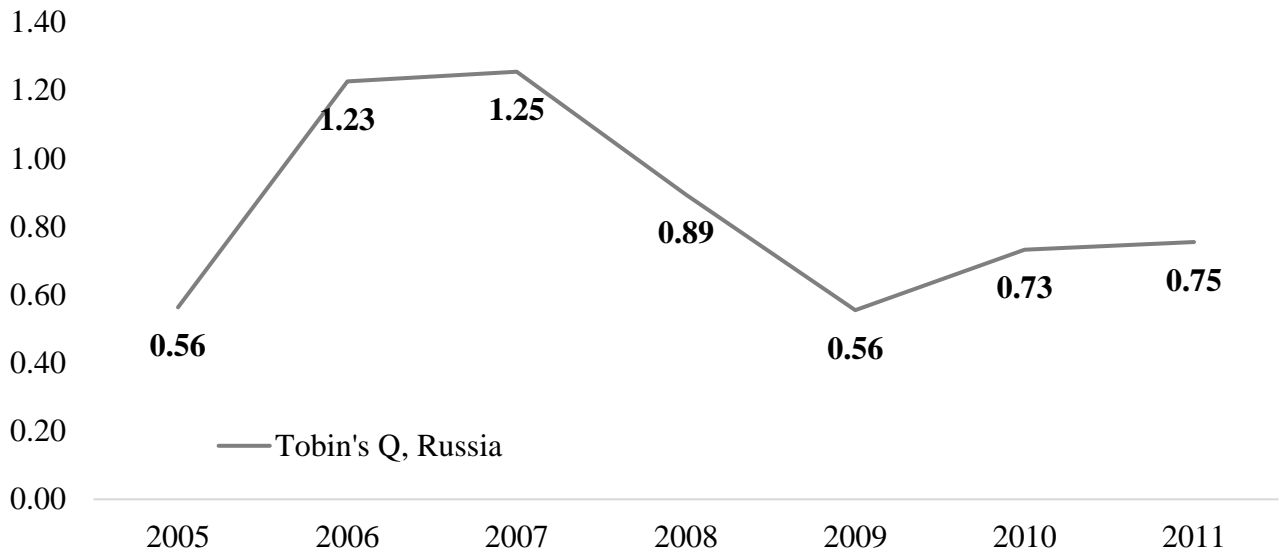
**Table 3.3 Descriptive statistics of Russian sample**

| Variable  | Mean   | Std.Dev. | Min    | Max    |
|-----------|--------|----------|--------|--------|
| Tobin's Q | 0.847  | 0.678    | 0.030  | 5.422  |
| VP        | 0.865  | 1.104    | 0.002  | 5.873  |
| BD        | 9.070  | 2.075    | 5      | 15     |
| ID        | 0.114  | 0.127    | 1      | 0.714  |
| OWNER1    | 0.535  | 0.187    | 0.0634 | 1      |
| DOWNER    | 0.387  | 0.232    | 0.001  | 0.9911 |
| LEV       | 0.233  | 0.217    | 0.001  | 1.259  |
| SZ        | 16.320 | 2.159    | 11.745 | 23.105 |
| RD        | 0.021  | 0.013    | 0.000  | 0.118  |
| ROA       | 0.792  | 0.092    | 0.004  | 0.689  |

Based on the results presented on the table above, the average Tobin's Q ratio is equal to 0.85, which means that, on average, market underprices company's assets. This observation is confirmed by the other study, in which the authors obtained very similar result of 0.82 (Ilina, Berezinets, Cherkasskaya, 2013). Among the companies with the lowest value were "Chelyabenergo", "Izhstal", "Saratovskiy NPZ", "Orenburgneft", "Rostovenergo", "Tverenergosbyt", while the highest value of Tobin's Q is observed for "SN-MNG", "Marienergosbyt", "Baltika", "Rostelekom", "Samaraenergo", "Saratovenergo", "Smolenskenergosbyt", "TRK". Dynamics of Tobin's Q changes is demonstrated on the figure 4,

and shows that on average Tobin's Q ratio was higher for the Russian market over 2005 to 2007 than during the crisis period between 2008 and 2009. The market experienced further increase in 2009 and here recovery of the economy could be hypothesized.

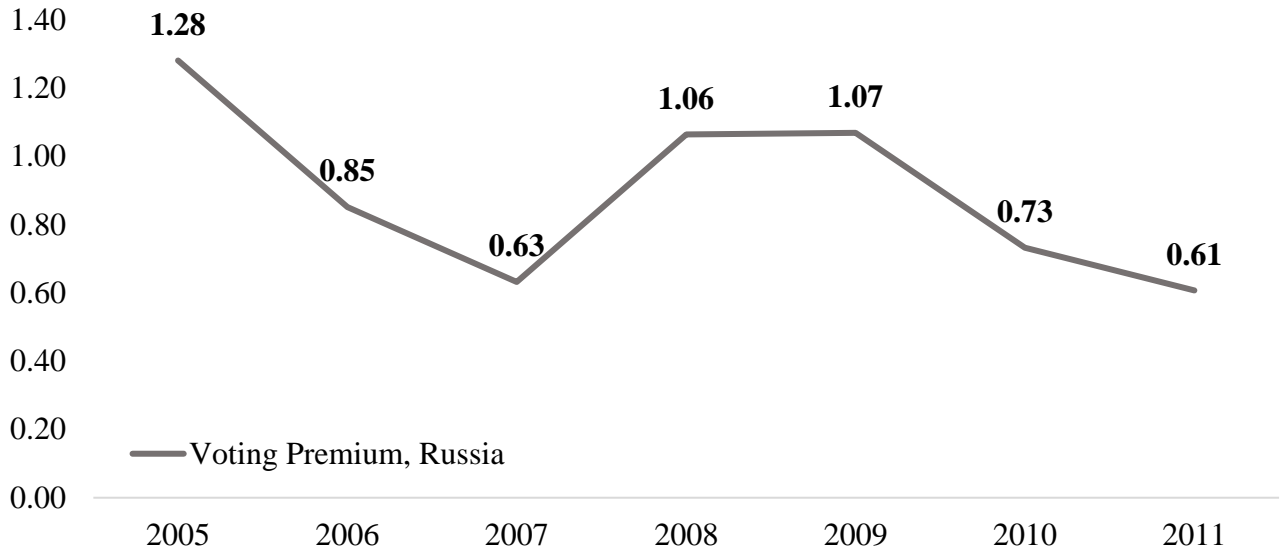
**Figure 3.1 Dynamics of average Tobin's Q changes over 2005-2011, Russian market**



The voting premium in Russian companies averages 86%. This is a quite high number, comparing this result with other similar studies of emerging markets. For example, in Brazil and South Africa, (Benos, Weisbach, 2004) report average voting premium to be 25.3% and 7.6% respectively. Russian market, however, is characterized by the significant problems in corporate governance (Goetzman, Spiegel, Ukhov 2003) and therefore might have higher average VP. Obtained number is lower than those obtained by the other researches, though. (Muravyev, Berezinets, Iliina, 2014) report that the average voting premium in Russia over the time span from 1998 to 2009 was 113%. As soon as the observation period of the current study covers pre- and post-crisis periods, it is essential to track how the financial crisis of 2008 affected the voting premium in Russia. The graph below represents the dynamics based on the collected data.



**Figure 3.2 Dynamics of average voting premium changes over 2005-2011, Russian market**



The highest value of private benefits of control was in 2005 with further double decrease in 2007 from 128% to 63%. During the crisis, another increase up to 106% and 107% is observable. In 2010 and 2011 voting premium returns back to its inferior level of 61%. There are, certainly, many factors affecting the size of private benefits of control. We may hypothesize that the control contest lowers during the crisis periods, leading to the lower size of PBC.

Russian companies on average have 9 members in supervisory board. This result corresponds to the research of (Muravyev, 2017), who based on a sample of Russian companies between 1998 and 2014 reports the average board size of 9 members. (Iwasaki, 2008), however, obtained the mean of 6.79, while analyzing the board composition of Russian companies.

Number of independent directors in Russian companies averages 12%. Among other researches, investigating corporate governance, (PriceWaterhouseCoopers, 2012) should be emphasized. In accordance with this research, average percentage of independent directors in Russia is 36%.

Estimated percentage of the largest owner's share is 53%. This number reflects the fact that the Russian companies are tend to be controlled by the single shareholder. (Berezinets, Iliina, Alekseeva) while observing the period of 2003-2009 find almost similar result of 51%. The difference between the two largest owners is equal to 38%, which implies that usually the control contest among shareholders is not intense.

As it can be inferred from the table, average leverage of Russian companies is equal to 0.23, with the minimum value of almost 0 and the maximum of 1.26. Leverage is of a special interest in this study, since the relationship between leverage and Tobin's Q ratio has been studied a lot and firm value proxy should be controlled for the indebtedness.

Size of the company, represented by the logarithm of total assets cannot be explained in economical terms.

In the next section variables related to the German market are presented. The table below demonstrates descriptive statistics of the German sample.

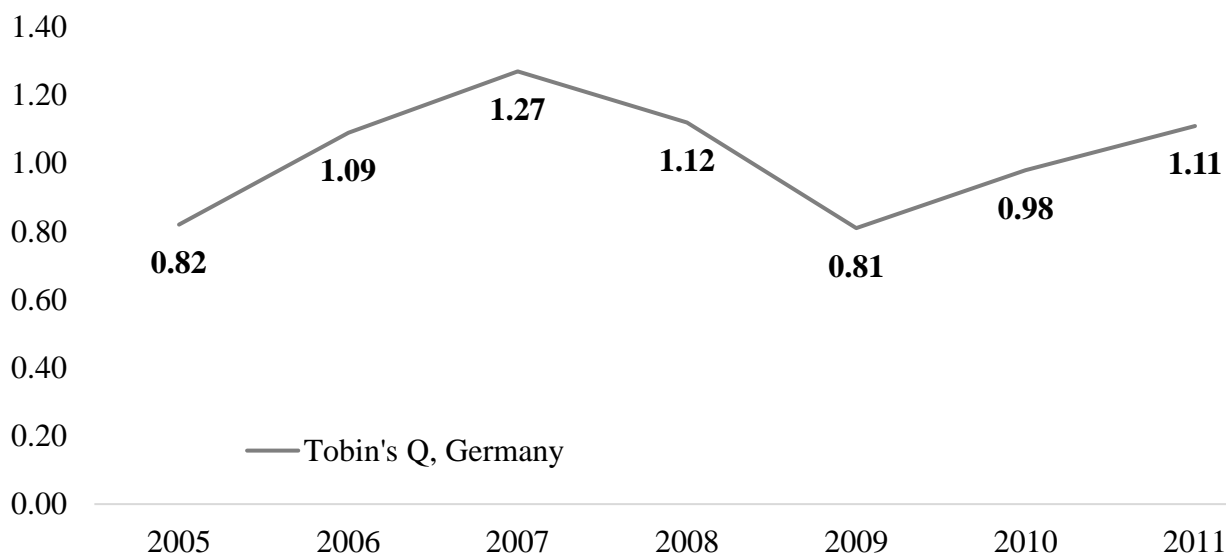
**Table 3.4 Descriptive statistics of German sample**

| Variable  | Mean   | Std.Dev. | Min    | Max    |
|-----------|--------|----------|--------|--------|
| Tobin's Q | 1.028  | 0.560    | 0.062  | 3.469  |
| VP        | 0.389  | 0.416    | 0.000  | 2.805  |
| BD        | 13.950 | 6.906    | 3      | 21     |
| ID        | 0.588  | 0.143    | 0.25   | 0.882  |
| OWNER1    | 0.415  | 0.227    | 0.067  | 0.8802 |
| DOWNER    | 0.335  | 0.254    | 0.004  | 0.8802 |
| LEV       | 0.276  | 0.153    | 0.000  | 0.617  |
| SZ        | 15.262 | 2.186    | 11.626 | 19.326 |
| RD        | 0.030  | 0.022    | 0.000  | 0.094  |
| ROA       | 0.052  | 0.041    | 0.000  | 0.208  |

The constructed sample of German companies has an average value of Tobin's Q ratio equal to 1.02. This implies that on average investors assign to companies prices higher than the book values in distinction from the Russian market. (Ghosh, 2007) reports Tobin's Q to be 1.11 in 2005 for the German market which corresponds to the obtained value, while (Dittman, Ulbricht, 2004), obtain the value of 1.5. German companies with the lowest ratio are "Biotest", "Man", "Metro", "RWE", "Sartorius", "Axa Konzern", "Fresenius", "Rheinmetall". The group of companies which is priced by the investors at a highest price contains the following companies: "Henkel", "Fulchs",

“HUGO BOSS”, “Fresenius Medical Care”, “RhoenKlinikum”. Graph shown below presents the dynamics of the average Tobin’s Q ratio over the period between 2005 and 2011 in Germany.

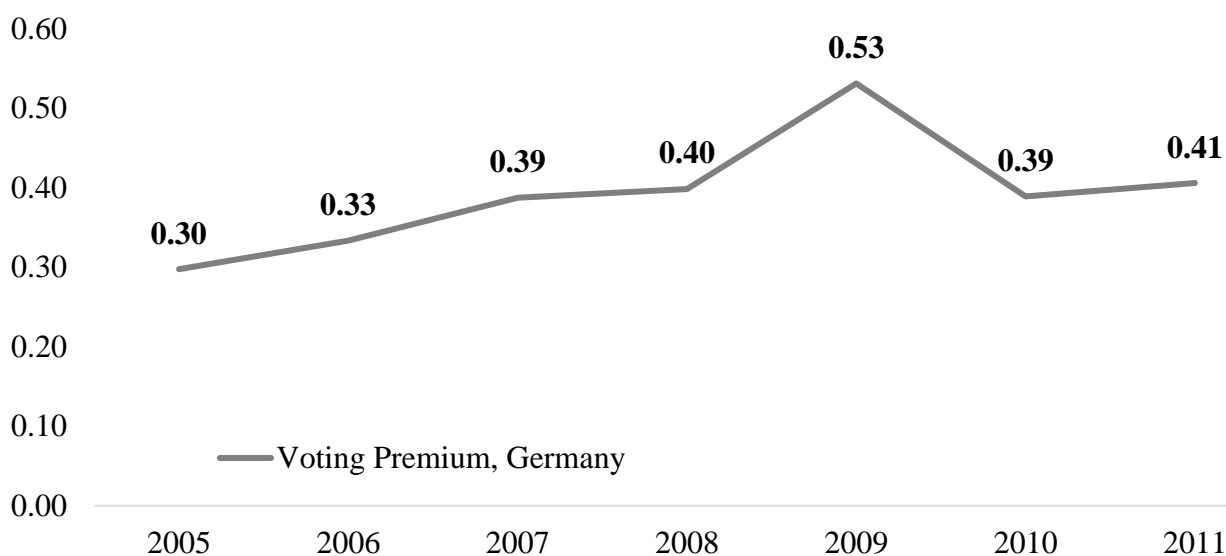
**Figure 3.3 Dynamics of average Tobin’s Q changes over 2005-2011, German market**



As it is on the Russian market, investors price companies’ assets higher until 2007, with the further decrease in 2008 and 2009, as a matter of the financial crisis. During the period between 2009 and 2011 average Tobin’s Q ratio recovered back to its pre-crisis value of 1.11.

Size of private benefits of control in Germany is relatively lower than in Russia. As it can be inferred from the figure 4, the voting premium experienced slight growth during the period between 2005 and 2008 from 30% to 40% and grew again up to 53% in 2009. Afterwards, the measure of private benefits of control returned back to the approximate value of 40%. Size of the measure of PBC in Germany averages in 38%, which is 126% lower than in Russia. In distinction from the current study, (Doidge, 2004), while estimating among other the voting premium in Germany got the value of 15.5%. (Guadalupe, Gonzalez, 2010), analyzing the timespan between 1990 and 2003 report the voting premium in Germany to be 19.3%. Such discrepancy in results could be explained by the fact that the German wave of shares unification in 2002 left only those companies, which owners are mostly concerned with preserving their private benefits.

**Figure 3.4 Dynamics of average voting premium changes over 2005-2011, German market**



Average number of supervisory board members in Germany is 14, which is significantly higher than in Russia. Average number of independent directors is equal to 58%. In spite of the fact, that in Germany, in distinction from Russia, the Corporate Governance Code doesn't state the lowest number of independent directors due to the specific of two-tier system, companies are still more concerned about keeping their supervisory board independent.

Stake of the largest shareholder in German company averages 41.3%, which is consistent with the conclusion of (Gugler, Yutoglu, 2002) that the average share of the first largest shareholder in Germany is equal to approximately 45%. (Jens Koke, 1999) report the value of 57%, also analyzing the time span between 1990 and 2000. Interestingly, despite the fact that family-owned companies prevail in Germany, largest shareholders do not tend to concentrate the power in their hands. This interpretation, however, might be biased. As it is discussed above, large stake of companies with dual class structure do not trade their ordinary shares. It should be taken into account, that should the owner of the company desire to retain the absolute power over the company, she would not have started to trade ordinary shares. In this example, therefore, it could be said, that the sample consists of the companies, where the controlling shareholders are not concerned about keeping complete control over the company. The power of those shareholder is also substantially lower than in Russia, with an average difference between the stakes of the first and the second largest shareholders equal to 33.4%.

Average size of the German companies are proxied by the logarithm of total assets and equal to 15.3. The average size of sampled companies in Germany is moderately lower than in Russia.

### 3.4 Regression Analysis

In the following section, regression analysis results are presented and discussed. The aim of the conducted analysis was to determine the relationship between private benefits of control and firm value in Russian and German markets. The regression is controlled for the variables, previously mentioned in other researchers and comprising the baseline model. The analysis is handled in three steps. First, the sample consisting of Russian companies is analyzed. Second, the same procedure is done for the German sample. Third, special emphasis is placed on the comparison of two countries and the discussion of those differences. Each sample is analyzed with respect to all three models: Pooled OLS, Fixed effects, Random Effects. In the end of each subsection, the most adequate model is chosen based on Wald, Breusch and Pagan Lagrangian, and Hausman tests.

#### 3.4.1 Russian sample

First, pooled, fixed effects and random effects regression models were constructed. Results of those models are presented in Table 3.5. All the models are significant and could be interpreted.

Voting premium, size of the first shareholder's stake, difference between the first and largest shareholders' stake and ROA are statistically significant. Obtained results are presented below.

**Table 3.5 Summary of regression analysis for the Russian sample**

| Variable | Pooled OLS | Fixed Effects | Random Effects |
|----------|------------|---------------|----------------|
| VP       | -0.104     | -0.126*       | -0.173***      |
| BS       | -0.014     | -0.009        | 0.007          |
| ID       | 1.313**    | 0.873         | 0.803          |
| OWNER1   | 2.067*     | 2.122         | 2.197*         |
| DOWNER   | -1.744**   | -1.857        | -1.580*        |
| LEV      | 0.099      | 0.900         | 0.307          |
| SZ       | 0.009      | -0.941***     | -0.059         |
| RD       | -10.67     | -27.863       | -0.450         |

**Table 3.5 Summary of regression analysis for the Russian sample (continued)**

| Variable       | Pooled OLS    | Fixed Effects | Random Effects |
|----------------|---------------|---------------|----------------|
| ROA            | 2.318**       | 0.612         | 1.940**        |
| R <sup>2</sup> | <b>0.086</b>  | <b>0.0003</b> | <b>0.1192</b>  |
| Prob > F       | <b>0.0408</b> | <b>0.0008</b> | -              |

The main finding of the conducted analysis reveals negative relationship between private benefits of control proxied by the voting premium and the firm value represented by Tobin's Q ratio. According to the reported results, it is significant in all three models at 1% level. Expected sign is in line with the literature review and allows to accept the hypothesis about the negative relationship between private benefits of control and firm value in Russia. This result proves the opinion, that the presence of PBC negatively affects firm value. (Grossman, Hart, 1988) explained that isolation of the management from the market for corporate control is not in securityholders' interest. Taking in consideration the fact that the average stake of the first largest shareholder is more than 51%, it could be concluded that in Russia, in companies with dual class stock structure, owners are tend to build up private benefits of control. Interestingly, Tobin's Q equals 0.85 and consistent with the obtained result for the voting premium. It could be assumed that investors, while having a feeling that the management of the companies might expropriate them in favor of their own interest undervalue the company.

Board size is insignificant and therefore results could not be interpreted. This result is common for other studies as well. For example (Weterings, Swagerman, 2010) report the insignificant relationship between the board size and Tobin's Q ratio for the sample of Hong Kong, Malaysian and Singapore companies. Same conclusion is made by (Rodiguez-Fernandex, 2014) who scrutinized, among others, the relationship between board size and firm value proxied by Tobin's Q. However, (Berezinets, Iliina, Cherkasskaya, 2013) find this relationship to be significant on the Russian market. The rationale behind the insignificance is the specifics of Russian corporate governance. Supervisory boards are lack of mechanisms which consistently track their performance. It could be inferred, that there is no significant relationship due to the fact, that the input of supervisory board members is not reflected in the market price of a company. Share of independent directors is insignificant and could not be interpreted.

Size of the largest shareholder stake is significantly positively relates to firm value at 10% level in pooled OLS and random effects models. Such result is consistent with the ideas of (Jensen, Meckling, 1976) and (Shliefer, Vyshny, 1986) who supported the monitoring role of shareholders. (Adams, Kirchmeier, 2015) argues that in U.S. market largest shareholder's stake has a positive influence on firm size. However, (Dacunto, 2014) finds positive relationship between the ownership concentration and firm value among French, Italian and Spanish companies. Overall, to avoid biasness in conclusion, analysis should be further conducted by applying the sample consisted of both dual and one class stock structure companies,

The difference between the stakes of the first and second largest shareholders is significant in pooled OLS and random effects model at 5% and 1% respectively. Unlike it was expected, the variable has a negative sign. Reported result correlates with the previously obtained positive relationship between the size of the first largest shareholder and firm value. Negative relationship might signal that rigid contest among two largest shareholders might decrease governance efficiency (Maury, Pajuste, 2002) or that coalition is being shaped by the largest shareholders to extract private benefits of control.

Unexpectedly, significant negative relationship between the size of the company and firm value has been found in fixed effects regression at 1% level. There might be a set of rationales behind such result. First, larger companies are usually associated with the oldest and inflexible ones. Investors, might value smaller companies to have more space for growth in the future and therefore price them higher than they price mastodons of the market. Second, large size of a company provides managers with better opportunities of expropriating shareholders, while increasing agency costs (Xiao, 2009), (Berk, Demarzzo, 2014). Same result is reported by (Black, Jang, Kim, 2002) who studies the Korean market of 1990s.

Return on assets shows significance at 5% level with the expected sign. ROA is a part of the baseline model and its relationship with the firm value is very intuitive. There is a large list of papers exploring this question, though. (Sudiyatno, 2012), (Pascareno, Siringoringo, 2014), (Asiri, Hamid, 2014) and many others

Leverage and research and development expenses are found to be insignificant and could not be interpreted.

As soon as all of the performed models are significant additional tests were needed. Based on the consequent application of Wald, Breusch and Pagan Lagrangian, and Hausman, random effects

model shows that the random effects model describes given empirical findings the most adequately for the Russian market.

### 3.4.2 German sample

**Table 3.6 Summary of regression analysis for the German sample**

| Variable             | Pooled OLS   | Fixed Effects | Random Effects |
|----------------------|--------------|---------------|----------------|
| VP                   | 0.321***     | 0.425***      | 0.321***       |
| BS                   | -0.01        | -0.116        | -0.01          |
| ID                   | 0.835**      | 0.46          | 0.835**        |
| OWNER1               | -1.557*      | 1.158         | -1.557*        |
| DOWNER               | 1.5**        | -0.089        | 1.5**          |
| LEV                  | 0.76*        | 0.413         | 0.76*          |
| SZ                   | 0.012        | -0.038        | 0.012          |
| RD                   | 7.09         | 4.3           | 7.09           |
| ROA                  | 9.78***      | 8.82***       | 9.78***        |
| <b>R<sup>2</sup></b> | <b>0.82</b>  | <b>0.73</b>   | <b>0.85</b>    |
| <b>Prob &gt; F</b>   | <b>0.000</b> | <b>0.000</b>  | -              |

Note: the symbols \*, \*\* and \*\*\* sign the variables significant at the 10%, 5% and 1% levels respectively.

Voting premium shows significant positive relationship with firm value in Germany at 1% level in pooled OLS, fixed effects and random effects regression models. This is a counterintuitive result, which shows that private benefits of control positively relate to German companies' value. The reasoning of the obtained result could be provided in two ways. First explanation considers the possibility that in Germany investors associate higher private benefits of control with the higher commitment of owners to the company. There is a such possibility, taking into account the fact, that dual class stock structure is mostly conducted within family-owned companies, which ensures investors that the presence of PBC is offset by the deeper engagement of owners in the business processes. Second explanation accepts the chance that the regression model has omitted variables,



which has not been considered. Nevertheless, the main hypothesis of the study is rejected for the German market.

Within the given sample of German companies with two classes of shares there is an absence of significant relationship between board size and firm value. This result is not consistent with papers of for example (Yermack, 1996), who finds that the board size positively relates to firm value in U.S. market. However, more recent research of (Frick, Bermig, 2009) explores this relationship to be insignificant for the list of 294 German companies, which corresponds to the regression analysis results.

Relationship between the share of independent directors is positive and significant which is consistent with the expected sign. It might be concluded that in Germany presence of independent directors implies better governance due to the impartiality of decisions made by such supervisory board.

Significant relationship between the largest shareholder's stake and firm value is found to be significant and negative at 10% level in pooled OLS and fixed effects regression models. Investors therefore tend to undervalue companies more with the growth of the largest shareholder's stake. Recent study made by (Brendel, Schwetzler, Strenger, 2016) explores this relationship over the period 2000-2003 and finds that the size of the largest shareholder positively relates to the firm value.

Relative power of the largest shareholder expressed by the average difference between stakes of the first and second largest shareholders of German companies has negative relationship with firm value in pooled OLS and random effects regression models at 10% level. Given result implies, that the contest between largest shareholders associated with the higher valuation of the companies.

Leverage used as a control variable in the basic model has the positive relationship with the firm value, which is consistent with the number of studies. (Barontini, Caprio, 2005) stress relationship between leverage and firm value for family-owned German companies and find it to be significant and negative.

Size of a company represented by the natural logarithm of total assets do not show any significant relationship with firm value and could not be interpreted, as well as the research and development expenditures. Insignificance of size of a company is also presented in papers of (Vintial, Gherhina, 2014), in which the Bucharest market is analyzed. Insignificance of these variables is clearly explained by the fact that in Germany investors value companies based on their operational performance than on the actual size of the company or their investments in research &

development. While arguing about insignificance of R&D expenses on firm values, one should consider that the companies presented in the sample are mostly stable and large companies. Unlike high-tech companies, sampled firms are not entirely dependent on new developments.

As a part of the basic model, ROA ratio is significant and positive at 1% level, which is not surprising and obtained by most of the authors, as it is presented in the discussion of the results for the Russian market.

### 3.4.3 Comparison of Russian and German samples

While comparing Russian and German samples in regard of the relationship between private benefits of control and firm value, the assumption about the different return of PBC to firm value should be first stressed. To test this hypothesis interaction term (Countrycrossvar) is introduced. To calculate it, first, binary variable (Country) is presented, which takes the value of 1 if corresponding country is Russia and 0 if not. Further, dummy variable, representing the country is multiplied by the voting premium, proxying private benefits of control.

$$Countrycrossvar_{it} = Country_{it} \times VP_{it} \quad (3.8)$$

With the inclusion of the new variable, the regression is run for the merged sample consisting of Russian and German samples. On table 3.7 obtained results are presented.

**Table 3.7 Summary of regression analysis for the merged sample**

| Variable | Pooled OLS | Fixed Effects | Random Effects |
|----------|------------|---------------|----------------|
| VP       | 0.538***   | 0.367**       | 0.389***       |
| BS       | -0.010     | -0.0161       | -0.007         |
| ID       | 1.165***   | 0.408         | 0.624          |
| OWNER1   | 1.023      | 3.044***      | 1.867**        |
| DOWNER   | -0.816     | -2.405***     | -1.318**       |
| LEV      | -0.060     | 0.329         | 0.122          |
| SZ       | -0.264     | -0.545***     | -0.056         |
| RD       | -1.495     | 2.443         | 3.807          |
| ROA      | 3.352***   | 1.729**       | 2.438***       |

**Table 3.7 Summary of regression analysis for the merged sample (continued)**

| Variable             | Pooled OLS   | Fixed Effects | Random Effects |
|----------------------|--------------|---------------|----------------|
| CountryVariable      | 0.387        | -             | 0.308          |
| Countrycrossvar      | -0.644***    | -0.537***     | -0.573***      |
| <b>R<sup>2</sup></b> | <b>0.309</b> | <b>0.078</b>  | <b>0.248</b>   |
| <b>Prob &gt; F</b>   | <b>0.000</b> | <b>0.000</b>  | -              |

Note: the symbols \*, \*\* and \*\*\* sign the variables significant at the 10%, 5% and 1% levels respectively.

Additionally, both variables (CountryVariable) and (Countrycrossvar) were tested on significance. Hypotheses stating that coefficients equal to zero were rejected. In accordance with the given results it could be concluded that private benefits of control have stronger negative return to firm value in Russia than in Germany. Specifically, for every extra unit of voting premium representing private benefits of control, firm value proxied by Tobin's Q in Russia is decreasing by 0.573 over and above the firm value in Germany in accordance with the random effects regression. Russian investors tend to react more sensitively than in Germany on the presence of private benefits of control. Weak corporate governance mechanisms inherent to Russian market cannot provide sufficient protection of minority shareholders. They therefore tend to undervalue companies which provide control shareholders with an opportunity to extract exclusive benefits.

As a next step, results of individually analyzed samples are compared. Within the comparison of the differences between Russian and German markets, variances in the relationship between firm value and other variables is interpreted. Results are shown on the table below.

**Table 3.8 Comparison of results of regression modelling for Russian and German companies**

| Variable | Russia      | Germany     |
|----------|-------------|-------------|
| VP       | Negative*** | Positive*** |
| BS       | -           | -           |
| ID       | -           | Positive**  |
| OWNER1   | Positive*   | Negative**  |
| DOWNER   | Negative*   | Positive**  |

**Table 3.8 Comparison of results of regression modelling for Russian and German companies (continued)**

| Variable | Russia     | Germany     |
|----------|------------|-------------|
| LEV      | -          | Positive*   |
| SZ       | -          | -           |
| RD       | -          | -           |
| ROA      | Positive** | Positive*** |

Note: the symbols \*, \*\* and \*\*\* sign the variables significant at the 10%, 5% and 1% levels respectively.

Main differences in results for the Russian and German market concerns the main question of the study, whether there is a relationship between private benefits of control proxied by the voting premium and firm value represented by Tobin's Q. Interestingly, the sign is different for Russia and Germany, which implies that all else being equal investors in Russia consider the presence of PBC as a signal about expropriation, while in Germany, it is perceived as a positive sign. One may hypothesize that in Germany families who issue preferred shares do so to retain control over the company that has been developing by their ancestors for ages, but not to enrich themselves to the detriment of minorities. Russian market, oppositely is not associated with the commitment of major shareholders to their firms, since they received control during the privatization program in 1990s and may be mainly interested in personal enrichment.

Board size hasn't relationship with firm value in Russian as well as in Germany, which is consistent with the papers aforementioned in this study.

Essential to mention that the share of independent directors in supervisory board is insignificant in Russia, yet has positive relationship with firm value in Germany. It may be concluded from this result that in Germany independent directors in fact positively influence decision making process, by offering their expertise and strategic advices. Russian market strives for increasing the number of independent directors, but the main question is whether these directors are really independent.

Size of the largest shareholder's stake and her power have different relationship with firm value in Russia in Germany, as well as the private benefits of control does. In Russia, within analyzed sample, the larger the stake of the major shareholder, the larger firm value, whilst lower

power of this shareholder leads to higher valuation. Opposite is true for Germany. This result again might be explained by the difference in perception in Russia and Germany. Russian investors price the companies where the largest shareholder has more power higher. It might be assumed that the lower the discrepancy between the first and the second shareholders' stake, the higher probability of the coalition formation. In Germany, from the other hand, firms where the largest shareholders have less stake and power are valued higher.

Other control variables are not of the primary interest and do not have controversial or interesting results. Return of assets ratio positively relates to firm value in both countries. Size of the company expressed by the natural logarithm of total assets is insignificant in relation to firm value, as well as research and development expenditures. Leverage is not significant for Russia and significant and positive for the German sample.

### **Summary**

In this chapter, empirical evidence for the stated goal and questions is provided. Chapter covered five main points necessary for conducting the research: hypothesis statement, methodology and sample depiction, descriptive statistics and finally regression analysis.

First, based on the deep and thorough literature review, the hypotheses are stated. In accordance with the literature, we hypothesized that negative relationship between private benefits of control and firm value should take place and that return of private benefits of control to firm value is different in Russia and Germany. Second, methodology of the analysis is provided. Methodology description included the model depiction and detailed explanation of variables used in the model and the specification of calculation approaches of the chosen variables. Third, sample selection and data gathering process were specified in the next section. Fourth, in-depth analysis of constructed samples is made in the section with descriptive statistics. Finally, the regression analysis is conducted in the last section.

Main findings of this chapter concern the relationship between private benefits of control and firm value in Russia and Germany. Controversially, in Russia PBC positively relate to firm value, while the opposite true in Germany. Moreover, the analysis revealed that private benefits of control have different return to firm value in Russian and Germany. Regression analysis introduced new findings regarding both markets, apart from the main research question. For example, opposite signs in two markets for the relationship between the stake size of the largest shareholder and firm value is obtained. Same result is reported for the relative power of the largest shareholder, expressed by the difference between the stake sizes of the first and second largest shareholders.

## CONCLUSION

The main research goal of this paper was to determine the relationship between private benefits of control and firm value as well as to define the direction of this relation. All the initially stated objectives were consecutively reached.

In the first chapter various firm valuation approaches were analyzed and discussed. Further, critical review of the most recent and actual research paper, exploring the topic of firm valuation determinants is provided. Eventually, the first chapter resulted in the final choice of the firm proxy for the purpose of this research.

The second chapter was fully devoted to the problem of private benefits of control. In this chapter a large set of literature, where PBC is discussed was investigated. In the first part of the second chapter the emphasis was put on different approaches to measure private benefits of control. In the second part, a number of papers exploring the relationship between private benefits of control and firm value were discussed.

In the third chapter, empirical study of the relationship between PBC and firm value was conducted by means of the regression analysis. The analysis resulted in several intriguing findings regarding the relationship between private benefits of control and firm value.

First of all, the hypothesis about the negative relationship between private benefits of control and firm value was accepted for the Russian market. Meanwhile, in Germany positive relationship between PBC and firm value occurred and the main hypothesis was rejected. Based on these results, it was assumed that the main rationale behind such result is the difference in perception of dual class structure companies in Russia and Germany. While in Russia preferred stocks were introduced artificially by the government, in Germany dual class structure is usually chosen by the old family-owned companies. German investors therefore tend to rely on companies with non-voting shares more than Russian. Furthermore, analysis revealed different return to firm value in Russia and Germany, which proves the conclusion that investors react on private benefits of control differently in Russia and Germany.

Besides the main research goal, several other findings regarding the relationship between the corporate governance and firm value were made. Specifically, regression result showed that, share of independent directors in supervisory board does not relate to firm value in Russia, whilst has positive relationship in Germany. Moreover, in accordance with the conducted analysis, higher share of the largest shareholder positively associated with firm value in Russia and negatively in Germany. Furthermore, the power of the first largest shareholder, measured by the difference between stake

sizes of the first and second largest shareholders negatively related to firm value in Russia and positively in Germany.

These controversial results were explained by the substantial differences in corporate governance models development background of two countries. In Germany market has been developing for more than a century, while in Russia barely two decades passed since the market economy emerged.

Based on the findings, the set of managerial implications for investors is prepared. The fact that in Russia private benefits of control not only higher than in Germany, but also negatively relate to firm value should make investors more cautious before investing. Undoubtedly, investors do their choice regarding the country to invest based on the assessment of return and risks associated with the market. Nevertheless, additional consideration of PBC and their relation to firm value will provide an investor with the valuable information regarding the quality of corporate governance in a certain country. As it was concluded, since private benefits of control have positive relationship with firm value in Germany and negative in Russia, one may conclude that she should invest in German companies with the highest size of PBC and avoid investments in Russia. In fact, an investor should use it as another tool to assess the quality of her future investments and assess PBC in relation to risk and return. It is worth noting that the problem of private benefits of control mainly matters for the long-term investors, who are of a risk of being consistently expropriated.

The master thesis contributes to existing theory by investigating the relationship between private benefits of control and firm value in the context of the comparison of emerging and developed markets. Current research provides a room for future research regarding the relationship between private benefits of control, risk and return of companies, which may assess how private benefits of control will influence short-term investors.

While discussing the contribution of the current paper, some limitations have to be considered. First of all, private benefits of control may occur not only in companies with two classes of shares, therefore should another way, applicable for all types of companies, exist it would have been used. Second, the presence of dual class structure implies the presence of private benefits of control, as soon as non-voting shares are issued during the privatization process to retain control over the company.

## REFERENCES

1. Abdullah, F., Shah, A., & Khan, S. U. (2012). Firm performance and the nature of agency problems in insiders-controlled firms: Evidence from Pakistan. *The Pakistan Development Review*, 161-182.
2. Adams, R. B., Akyol, A. C., & Verwijmeren, P. (2016). Director skill sets.
3. Adams, R. B., & Mehran, H. (2003). Is corporate governance different for bank holding companies?.
4. Adams, R. B., & Kirchmaier, T. (2015). Barriers to boardrooms.
5. Aggarwal, R., Kyaw, N. A., & Zhao, X. (2011). Financial Environment and the ValueLeverage Relation. *Journal of International Business and Economy* (2011), 12(2), 1-26.
6. Albuquerque, R., & Schroth, E. (2010). Quantifying private benefits of control from a structural model of block trades. *Journal of Financial Economics*, 96(1), 33-55.
7. Albuquerque, R., & Schroth, E. (2015). The value of control and the costs of illiquidity. *The Journal of Finance*, 70(4), 1405-1455.
8. Alchian, A. A., & Demsetz, H. (1972). Production, information costs, and economic organization. *The American economic review*, 62(5), 777-795.
9. Atanasov, V. (2005). How much value can blockholders tunnel? Evidence from the Bulgarian mass privatization auctions. *Journal of Financial Economics*, 76(1), 191-234.
10. Barak, R., & Lauterbach, B. (2011). Estimating the private benefits of control from partial control transfers: Methodology and evidence. *international Journal of corporate governance*, 2(3-4), 183-200.
11. Barclay, M. J., & Holderness, C. G. (1989). Private benefits from control of public corporations. *Journal of financial Economics*, 25(2), 371-395.
12. Barontini, R., & Caprio, L. (2006). The effect of family control on firm value and performance: Evidence from continental Europe. *European Financial Management*, 12(5), 689-723.
13. Bates, T. W., Kahle, K. M., & Stulz, R. M. (2009). Why do US firms hold so much more cash than they used to?. *The journal of finance*, 64(5), 1985-2021.
14. Bebchuk, L. A., & Kahan, M. (1990). A framework for analyzing legal policy towards proxy contests. *California Law Review*, 1071-1135.



15. Bebchuk, L. A. (1999). *A rent-protection theory of corporate ownership and control* (No. w7203). National Bureau of Economic Research.
16. Belanes, A., Djebali, R., & Omri, A. (2011). Private Benefits of Control versus block stock ownership in French firms. *Economics and Finance Review*, 1(6), 12-30.
17. Belkhir, M., Boubaker, S., & Derouiche, I. (2014). Control–ownership wedge, board of directors, and the value of excess cash. *Economic Modelling*, 39, 110-122.
18. Benninga, S., & Sarig, O. (1996). *Corporate finance: a valuation approach*. McGraw-Hill/Irwin.
19. Benos, E., & Weisbach, M. S. (2004). Private benefits and cross-listings in the United States. *Emerging Markets Review*, 5(2), 217-240.
20. Berezinets, I., Ilina, Y., & Alekseeva, L. (2013). Supervisory board structure and financial performance of Russian public companies. *Vestnik Santk-Peterburgskogo Universiteta. Seria 8. Management*, (2).
21. Berezinets, I., Ilina, Y., & Alekseeva, L. (2014). Dividends on Common and Preferred Shares: The Relationship with the Ownership Concentration in Russian Public Companies. *Ekonomski i socijalni razvoj*, 1(2), 0-0.
22. Bermig, A., & Frick, B. (2010). Board size, board composition, and firm performance: Empirical evidence from Germany.
23. Bhandari, A., & Javakhadze, D. (2017). Corporate social responsibility and capital allocation efficiency. *Journal of Corporate Finance*, 43, 354-377.
24. Brealey, R., & Myers, S. F. Allen, (2011). *Principles of Corporate Finance*.
25. Burkart, M., Gromb, D., & Panunzi, F. (1998). Why higher takeover premia protect minority shareholders. *Journal of political Economy*, 106(1), 172-204.
26. Burkart, M., Gromb, D., & Panunzi, F. (2000). Agency conflicts in public and negotiated transfers of corporate control. *The Journal of Finance*, 55(2), 647-677.
27. Byrka-Kita, K., & Czerwiński, M. (2015). Large block trades and private benefits of control on Polish capital market. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, (381), 36-49.
28. Castellino, O. (2013). On the price of different classes of shares. *PSL Quarterly Review*, 42(168).
29. Chen, Q., & Zhang, N. (2014). Accounting Measurement of Assets and Earnings and the Market Valuation of Firm Assets.

30. Chung, J., Hwang, J. H., & Kim, J. S. (2014). Block Premium and Shareholder Litigation. *Asia-Pacific Journal of Financial Studies*, 43(3), 407-431.
31. Cornelli, F., & Li, D. D. (1997). Large shareholders, private benefits of control, and optimal schemes of privatization. *The RAND Journal of Economics*, 585-604.
32. Copeland, T. E., Weston, J. F., & Shastri, K. (1983). *Financial theory and corporate policy* (Vol. 3). Reading, Mass.: Addison-Wesley.
33. Dah, M. A. (2016). Governance and firm value: The effect of a recession. *Research in International Business and Finance*, 37, 464-476.
34. Damodaran, A. (2007). Valuation approaches and metrics: a survey of the theory and evidence. *Foundations and Trends® in Finance*, 1(8), 693-784.
35. DeAngelo, H., DeAngelo, L., & Rice, E. M. (1984). Going private: Minority freezeouts and stockholder wealth. *The Journal of Law and Economics*, 27(2), 367-401.
36. DeAngelo, H., & DeAngelo, L. (1985). Managerial ownership of voting rights: A study of public corporations with dual classes of common stock. *Journal of Financial economics*, 14(1), 33-69.
37. de La Bruslerie, H. (2013). Equal opportunity rule vs. market rule in transfer of control: How can private benefits help to provide an answer?. *Journal of Corporate Finance*, 23, 88-107.
38. Dittmann, I., & Ulbricht, N. (2008). Timing and wealth effects of German dual class stock unifications. *European Financial Management*, 14(1), 163-196.
39. Doidge, C. (2004). US cross-listings and the private benefits of control: evidence from dual-class firms. *Journal of financial economics*, 72(3), 519-553.
40. Doidge, C., Karolyi, G. A., Lins, K. V., Miller, D. P., & Stulz, R. M. (2009). Private benefits of control, ownership, and the cross-listing decision. *The Journal of Finance*, 64(1), 425-466.
41. Dragota, V., Lipara, C., & Ciobanu, R. (2013). Agency problems and synergistic effects in Romania: The determinants of the control premium. *Finance a Uver*, 63(2), 197.
42. Dyck, A., & Zingales, L. (2004). Private benefits of control: An international comparison. *The Journal of Finance*, 59(2), 537-600.
43. Ehrhardt, O., & Nowak, E. (2001). *Private benefits and minority shareholder expropriation: Empirical evidence from IPOs of German family-owned firms* (No. 2001/10). CFS Working paper.
44. Ehrhardt, O., & Lahr, H. (2006). Private Benefits and the Decision to Go Public.

45. Estrin, S., & Prevezer, M. (2011). The role of informal institutions in corporate governance: Brazil, Russia, India, and China compared. *Asia Pacific journal of management*, 28(1), 41-67.
46. Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The journal of law and Economics*, 26(2), 301-325.
47. Fang, V. W., Noe, T. H., & Tice, S. (2009). Stock market liquidity and firm value. *Journal of financial Economics*, 94(1), 150-169.
48. Fatemi, A., & Pieter Krahn, J. (2000). On the valuation of common and preferred shares in Germany: New evidence on the value of voting rights. *Managerial Finance*, 26(10), 42-54.
49. Fernandes, M., & Novaes, W. (2014). *The Government as a Large Shareholder: Impact on the Voting Premium*. Technical report, Sao Paulo School of Economics, FGV, School of Economics and Finance, Queen Mary University of London and Department of Economics, PUC-Rio.
50. Fernandes, M., & de Souza, V. F. Voting Premium in the Brazilian Equity Market. *Brazilian Review of Econometrics*, 34(1), 79-96.
51. Foerster, S. R., & Sapp, S. G. (2005). The dividend discount model in the long-run: A clinical study.
52. Fosu, S., Danso, A., Ahmad, W., & Coffie, W. (2016). Information asymmetry, leverage and firm value: Do crisis and growth matter?. *International Review of Financial Analysis*, 46, 140-150.
53. Francis, J., Olsson, P., & Oswald, D. R. (2000). Comparing the accuracy and explainability of dividend, free cash flow, and abnormal earnings equity value estimates (Digest Summary). *Journal of accounting research*, 38(1), 45-70.
54. Gantenbein, P., Kind, A., & Poltera, M. (2016). Corporate Governance and the Market Value of Shareholder Voting Rights.
55. Gianfrate, G., & Zanetti, L. (2010). The Voting Premium in the Banking Industry: a Cross-country Analysis.
56. Ghosh, S. (2007). Leverage, managerial monitoring and firm valuation: A simultaneous equation approach. *Research in Economics*, 61(2), 84-98.
57. Gompers, P. A., Ishii, J., & Metrick, A. (2010). Extreme governance: An analysis of dual-class firms in the United States. *Review of Financial Studies*, 23(3), 1051-1088.

58. Gleason, K. I., & Klock, M. (2006). Intangible capital in the pharmaceutical and chemical industry. *The Quarterly Review of Economics and Finance*, 46(2), 300-314.
59. Graham, B., & Dodd, D. L. (1934). *Security Analysis: Principles and Techniques* (McGraw-Hill).
60. Grossman, S. J., & Hart, O. D. (1980). Takeover bids, the free-rider problem, and the theory of the corporation. *The Bell Journal of Economics*, 42-64.
61. Grossman, S. J., & Hart, O. D. (1988). One share-one vote and the market for corporate control. *Journal of financial economics*, 20, 175-202.
62. Guadalupe, M., & Pérez-González, F. (2010). Competition and private benefits of control.
63. Gugler, K., & Yurtoglu, B. B. (2003). Corporate governance and dividend pay-out policy in Germany. *European Economic Review*, 47(4), 731-758.
64. Hanouna, P., Sarin, A., & Shapiro, A. C. (2001). Value of corporate control: some international evidence.
65. Harris, M., & Raviv, A. (1988). Corporate governance: Voting rights and majority rules. *Journal of Financial Economics*, 20, 203-235.
66. Hassan, H., Hassan, S., Karim, N. A., & Salamuddin, N. (2016). Nonlinearity Between Ownership Concentration and Firm Value. In *Proceedings of the 1st AAGBS International Conference on Business Management 2014 (AiCoBM 2014)* (pp. 523-534). Springer Singapore.
67. Hoi, C. K., & Robin, A. (2010). Agency Conflicts, Controlling Owner Proximity, and Firm Value: An Analysis of Dual-Class Firms in the United States. *Corporate Governance: An International Review*, 18(2), 124-135
68. Holderness, C. G., & Sheehan, D. P. (1988). The role of majority shareholders in publicly held corporations: An exploratory analysis. *Journal of financial economics*, 20, 317-346.
69. Holmén, M. (2011). Foreign investors and dual class shares. In *Nordic Corporate Governance Forum Conference, Helsinki, May* (pp. 5-6).
70. Horner, M. R. (1988). The value of the corporate voting right: evidence from Switzerland. *Journal of banking & finance*, 12(1), 69-83.
71. Howell, J. W. (2014). The survival of the US dual class share structure. *Journal of Corporate Finance*.
72. Intrisano, C. (2012). Have the Private Benefits in Italian Firms Decreased?.

73. Iwasaki, I. (2008). The determinants of board composition in a transforming economy: Evidence from Russia. *Journal of corporate finance*, 14(5), 532-549.
74. Javed, Z. H., Rao, H. H., Akram, B., & Nazir, M. F. (2015). Effect of Financial Leverage on Performance of the Firms: Empirical Evidence from Pakistan. *SPOUDAI-Journal of Economics and Business*, 65(1-2), 87-95.
75. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(4), 305-360.
76. Jurfest, S. P., Paredes, R. D., & Riutort, J. (2015). Control premium and corporate regulatory changes: theory and evidence. *The Developing Economies*, 53(3), 159-187.
77. Kalay, A., Karakaş, O., & Pant, S. (2014). The market value of corporate votes: Theory and evidence from option prices. *The Journal of Finance*, 69(3), 1235-1271.
78. Kim, S., Park, S. H., & Suh, J. (2016). A J-shaped cross-sectional relation between dividends and firm value. *Journal of Corporate Finance*.
79. Kim, H. T., Papanastassiou, M., & Nguyen, Q. (2017). Multinationals and the impact of corruption on financial derivatives use and firm value: Evidence from East Asia. *Journal of Multinational Financial Management*, 39, 39-59.
80. Koke, J. F. (1999). New evidence on ownership structures in Germany.
81. Konijn, S. J., Kräussl, R., & Lucas, A. (2011). Blockholder dispersion and firm value. *Journal of Corporate Finance*, 17(5), 1330-1339.
82. Lauterbach, B., & Yafeh, Y. (2011). Long term changes in voting power and control structure following the unification of dual class shares. *Journal of Corporate Finance*, 17(2), 215-228.
83. Lease, R. C., McConnell, J. J., & Mikkelsen, W. H. (1983). The market value of control in publicly-traded corporations. *Journal of Financial Economics*, 11(1-4), 439-471.
84. Liu, C., Uchida, K., & Yang, Y. (2012). Corporate governance and firm value during the global financial crisis: Evidence from China. *International Review of Financial Analysis*, 21, 70-80.
85. Maury, C. B., & Pajuste, A. (2002). Controlling shareholders, agency problems, and dividend policy in Finland. *LTA*, 1(2), 15-45.
86. Maury, B., & Pajuste, A. (2011). Private benefits of control and dual-class share unifications. *Managerial and Decision Economics*, 32(6), 355-369.

87. Muravyev, A. (2007). *Dual class stock in Russia: what explains the price differential between common and preferred shares?* (No. 680). DIW Discussion Papers.
88. Muravyev A., Berezinets I., Ilina Y. Corporate conflicts and the firm policy in the area of employment and salary //Russian Management Journal. – 2012. – T. 10. – №. 2. – C. 3-32.
89. Muravyev, A., Berezinets, I., & Ilina, Y. (2014). The structure of corporate boards and private benefits of control: evidence from the Russian stock exchange. *International Review of Financial Analysis*, 34, 247-261.
90. Muravyev, A. (2017). Boards of directors in Russian publicly traded companies in 1998–2014: Structure, dynamics and performance effects. *Economic Systems*.
91. Nenova, T. (2003). The value of corporate voting rights and control: A cross-country analysis. *Journal of Financial Economics*, 68(3), 325-351.
92. Nguyen, B. D., & Nielsen, K. M. (2012). When Blockholders Leave Feet First: Do Managerial Ownership Affects Firm Value?.
93. Nicodano, G., & Sembenelli, A. (2004). Private benefits, block transaction premiums and ownership structure. *International Review of Financial Analysis*, 13(2), 227-244.
94. Pearl, J., & Rosenbaum, J. (2013). *Investment banking: valuation, leveraged buyouts, and mergers and acquisitions*. John Wiley & Sons.
95. Penman, S. H., & Penman, S. H. (2007). *Financial statement analysis and security valuation* (p. 476). New York: McGraw-Hill.
96. Pinto, J. E., Henry, E., Robinson, T. R., & Stowe, J. D. (2010). *Equity asset valuation* (Vol. 27). John Wiley & Sons.
97. Pivovarsky, A. (2001). *How does privatization work? Ownership concentration and enterprise performance in Ukraine* (No. 2001-2042). International Monetary Fund.
98. Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (1999). Corporate ownership around the world. *The journal of finance*, 54(2), 471-517.
99. Poulsen, T. (2011). Private benefits in corporate control transactions. *International Review of Financial Analysis*, 20(1), 52-58.
100. Rapp, M. S., & Strenger, C. (2015). Corporate Governance in Germany: Recent Developments and Challenges. *Journal of Applied Corporate Finance*, 27(4), 16-26.
101. Reese, W. A., & Weisbach, M. S. (2002). Protection of minority shareholder interests, cross-listings in the United States, and subsequent equity offerings. *Journal of financial economics*, 66(1), 65-104.

102. Rodríguez-Fernández, M. (2015). Company financial performance: Does board size matter? Case of the EUROSTOXX50 index/Rendimiento financiero de la empresa:¿ Importa el tamaño del consejo de administración? Caso del índice EUROSTOXX50. *Cuadernos de Gestión*, 15(2), 15.
103. Roger, P., & Schatt, A. (2016). Idiosyncratic risk, private benefits, and the value of family firms. *Finance Research Letters*, 17, 235-245.
104. Rydqvist, K. (1996). Takeover bids and the relative prices of shares that differ in their voting rights. *Journal of Banking & Finance*, 20(8), 1407-1425.
105. Saito, R., & Silveira, A. D. M. D. (2010). The Relevance of tag along rights and identity of controlling shareholders for the price spreads between dual-class shares: the Brazilian case. *BAR-Brazilian Administration Review*, 7(1), 01-21.
106. Salih, A. A., Ok, S. T., & Akdeniz, L. (2006). Are Stock Prices Too Volatile to be Justified by the Dividend Discount Model?.
107. Salzmann, A., & Soypak, K. (2017). National culture and private benefits of control. *Finance Research Letters*, 20, 199-206.
108. Scherrer, C. M., & Fernandes, M. (2016). *Disentangling the Effect of Private and Public Cash Flows on Firm Value* (No. 800).
109. Sepe, S. M. (2010). Private sale of corporate control: Why the European mandatory bid rule is inefficient.
110. Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of political economy*, 94(3, Part 1), 461-488.
111. Smart, S. B., Thirumalai, R. S., & Zutter, C. J. (2008). What's in a vote? The short-and long-run impact of dual-class equity on IPO firm values. *Journal of Accounting and Economics*, 45(1), 94-115.
112. Stulz, R. (1988). Managerial control of voting rights: Financing policies and the market for corporate control. *Journal of financial Economics*, 20, 25-54.
113. Vintilă, G., & Gherghina, Ș. C. (2014). The impact of ownership concentration on firm value. Empirical study of the Bucharest Stock Exchange listed companies. *Procedia Economics and Finance*, 15, 271-279.
114. Volkov D. L. (2008). *The theory of value-based management: financial and accounting aspects*. Spb.: HSE.

115. Weifeng, H., Zhaoguo, Z., & Shasha, Z. (2008). Ownership structure and the private benefits of control: an analysis of Chinese firms. *Corporate Governance: The international journal of business in society*, 8(3), 286-298.
116. Weinstein, S. (1988). Stan Weinstein's Secrets for Profiting in Bull and Bear Markets. *Homewood, Ill, Dow-Jones Irwin*.
117. Weisbach, M. S. (1988). Outside directors and CEO turnover. *Journal of financial Economics*, 20, 431-460.
118. Weterings, J. P., & Swagerman, D. M. (2011). The impact of board size on firm value: Evidence from the asian real estate industry. *Asian Journal of Business and Management Sciences*, 9(6), 22-43.
119. Williams, J. B. (1938). *The theory of investment value* (Vol. 36). Cambridge, MA: Harvard university press.
120. Xiao, S., & Zhao, S. (2009). How Do Agency Costs Affect Firm Value? Evidence from China. *Journal of economic literature*.
121. Yermack, D. (1996). Higher market valuation of companies with a small board of directors. *Journal of financial economics*, 40(2), 185-211.
122. Yung, K., & Jian, Y. (2017). Effects of the shareholder base on firm behavior and firm value in China. *International Review of Economics & Finance*, 49, 370-385.
123. Zhang, X., Liang, X., & Sun, H. (2013). Individualism–collectivism, private benefits of control, and earnings management: A cross-culture comparison. *Journal of business ethics*, 114(4), 655-664.
124. Zingales, L. (1994). The value of the voting right: A study of the Milan stock exchange experience. *Review of financial Studies*, 7(1), 125-148.
125. Zingales, L. (1995). What determines the value of corporate votes?. *The Quarterly Journal of Economics*, 110(4), 1047-1073.



## APPENDICES

### Appendix 1. Summary of multiples

| <b>№</b> | <b>Price Multiples</b> | <b>Enterprise Multiples</b> |
|----------|------------------------|-----------------------------|
| 1        | Price-to-earnings      | EV/EBITDA                   |
| 2        | Price-to-sales         | EV/EBIT                     |
| 3        | Price-to-book          | EV/Sales                    |
| 4        | Price-to-cash flow     |                             |
| 5        | Price-to-dividends     |                             |
| 6        | Tobin's Q              |                             |
| 7        | Market-to-book         |                             |

### Appendix 2. Private benefits of control taxonomy

|                        |             | <b>Type of private benefits</b>   |  |
|------------------------|-------------|---|--|
|                        |             | <b>Pecuniary ("Tunneling")</b>  | <b>Non-pecuniary</b>   |
| <b>Transferability</b> | <b>High</b> | <b>I. "Self-Dealing"</b><br>- Excessive compensation<br>- Diversion of resources<br>- Asset transfers at arbitrary prices<br>- Cheap loans and guarantees | <b>III. "Amenties"</b><br>- Winning the world series<br>- Influencing public opinion<br>- Owning a luxury brand<br>- Physical appointments |
|                        | <b>Low</b>  | <b>II. "Dilution"</b><br>- Insider trading<br>- Creeping acquisitions<br>- Freeze-out and squeeze-out<br>- Issuance of shares at dilutive prices          | <b>IV. "Reputation"</b><br>- Social prestige<br>- Family tradition<br>- Promotion relations<br>- Personal relations                        |

### Appendix 3. Control variables with expected signs

| <b>Nº</b> | <b>Control Variable</b> | <b>Expected Sign</b> | <b>Empirical Support</b>                                      |
|-----------|-------------------------|----------------------|---|
| 1         | Leverage                | -                    | (Xiao, 2009), (Vintila, Gherghina, 2014), (Kuzey, Uyar, 2016) |
| 2         | Size                    | +                    | (Bates, Kahle, Stulz, 2009), (Abdullah, Shah, Khan, 2012)     |
| 3         | R&D expenses            | +                    | (Gleason, Klock, 2006), (Ahharwal, Zhao, 2007)                |
| 4         | Return on Assets        | +                    | (Krausel, Lucas, 2010), (Kim, Park, Suh, 2017)                |