Blockholders and Diversification

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Executive summary

Little is known about the relationship between blockholders and their influence on firm's level of diversification. This paper aims to contribute to already existing literature on both topics and to constitute a link between them. To do so the following research question is formed for my study: "What is the relationship between blockholders and the likelihood of firm diversification?"

I provide empirical evidence on the influence of firm's level of diversification by the presence of blockholders in a firm using a sample of 1,337 US firms. In order to present it I distinguish between two types of diversification – business and geographical, as well as computing two measures of them – the number of segments and Herfindahl index. Concerning blockholders I make a distinction between inside and outside blockholders, and as in the case of diversification I measure the presence of blockholders in two ways – by the number of inside and outside blockholders and by the percentage of shares they hold respectively.

My final data set consists of 11 variables. Based on distinction between two types of diversification and two measures of them I constructed 4 dependent variables – *Number of business segments, Number of geographical segments, Herfindahl index by business segments* and *Herfindahl index by geographical segments.* Data set includes 7 independent variables that represent the factors which may influence the level of firm's diversification, forming in total 5 variables in each analysed pattern. After performing a statistical analysis using Stata, 3 of these variables are found to have a significant relationship with *Number of business segments* and *Herfindahl index by business segments – Number of outsiders, Debt/assets* and *Assets*; and only 1 variable is found to have a significant relationship with *Number of geographical segments* and *Herfindahl index by geographical segments – Assets*.

The findings suggest that the presence of outside blockholders decrease the likelihood of firm's business diversification, while they are found to have no impact on geographical diversification. Concerning inside blockholder ownership, it is found to have no impact upon both types of diversification at all. I conclude that outside blockholders have a strong relationship with firm's level of business diversification due to the so called "principal-agent" problem between them and managers. No impact of insiders on level of diversification is still not clear. However, I suggest that it may be due to the fact that inside blockholder ownership is not such a strong tool as many researchers suppose it to be. Relatively geographical diversification it needs further investigation, because insignificant results may have to do simply with US sample and defining geographical diversification as firm activity that crosses country boarders.

1. Introduction

In every rapidly growing environment firms have to consider alternative strategies in order to develop and expand their business. Diversification is considered to be one of these strategies. By the means of diversification firm can gain a lot of benefits, like economies of scope, creation of internal markets and higher debt capacity (Chen and Ho, 2000). In spite of all these benefits, in the situation of dispersed share capital structure and separation of ownership from management diversification also has costs which stem mainly from "principal-agent" problem (Barnea, Haugen and Senbet, 1981; Denis, Denis and Sarin, 1997). It is situation when hired managers (agents) are getting out of shareholders' (principals) control and begin to behave opportunistically (Markides, 1995; Doukas and Lang, 2003).

Too much of diversification may destroy firm's value and thus jeopardize the benefits that shareholders are getting from their shares in particular firm. On account of this reasoning they are willing to monitor managers' activities regarding diversification strategies. However, not all shareholders have the power to influence managers' decisions. Only large shareholders, also known as blockholders, have a substantial ownership position in public firms which enables them to exercise their authority by monitoring managers in order to prevent them from activities that yield private benefits to them at the expense of firm value decrease (Johnson, Hoskisson and Hitt, 1993; Mallette and Fowler, 1992).

Firms with blockholder ownership attracted attention of many researchers already not for one decade. Investigation in this field started with Adam Smith and continues to this very day (Holderness, 2003). Nowadays blockholders are widespread occurrence in corporate governance and frequent phenomenon in large public firms. A lot of firms all over the world are being directed, administrated and controlled by blockholders. Holderness (2003) investigated academic literature on how prevalent are blockholders and concluded that on average public US corporations have 20 percent of inside blockholder ownership and more than half of firms have outside blockholder ownership.

Firms with blockholders prevail in majority of the countries all over the world (La Porta, López-de-Silanes and Shleifer, 1999; Morck and Steier, 2005). A lot of research has shown that blockholders play significant role both in companies and in economies as a whole (Thomsen, 2005). Unfortunately, there seems to be a lack of research focus on the topic of the influence of blockholder ownership on the level of firm diversification. Is there difference between levels of firm diversification with and without blockholder ownership structure? Do different groups of blockholders have different incentives? If yes, what is the explanation be-

hind it? In this research, I would like to merge ideas from existing literature on blockholder ownership structure and diversification. The following research question is formed for my study: "What is the relationship between blockholders and the likelihood of firm diversification?"

Before proceeding to the literature review, I will briefly sketch the outline of this thesis. It consists in total of 7 sections. The next section will summarize and discuss theoretical framework on blockholders and diversification. It will provide valuable information for formulating hypotheses, which will help in answering abovementioned research question. Section 3 elaborates on the data and measurement used for analysing relationship between blockholders and diversification. It is followed by section 4, where the results derived from the empirical analysis are discussed. Section 5 presents discussion which gives implications for theory and for practice. And finally, the section 6 will draw conclusions. Unfortunately, the research is subject to several limitations which will be addressed in last section together with recommendations for further research.

2. Overview of existing literature on blockholders and diversification

The current research proposes to link diversification level of the companies to the presence of large shareholders (blockholders) in the company. In the subsequent sections the theoretical framework is set, which will lay the foundations of the conceptual model tested empirically.

2.1. Evolution of ideas about ownership concentration

As it is well known, the beginning of systematic development of economic science concerning ownership concentration was initiated by classic work of Berle and Means "The Modern Corporation and Private Property" (Berle and Means, 1932). They formulated famous thesis about separation of ownership from control, from which it was followed that deconcentration of ownership is capable of generating many hard-to-solve problems and of affecting economic effectiveness distinctly negative. Under the conditions of dispersed share ownership activity of hired managers becomes practically uncontrolled, and they get opportunity to pursue their own interests to the prejudice of shareholders' interests – to work with low efficiency, to surround themselves with luxury goods, to raise their reward unjustifiably high, to get involved into ambitious unprofitable projects, to turn continuous expansion of firms, at the head of which they are standing, into end in itself, etc. In the image of Berle and Means contemporary corporation appeared in the form of large firm with many separate small shareholders and handful of almighty, to no one accountable managers, who appropriated the right on making decisions and managed somebody else's wealth by their own discretion.

In the first half of 1990s years new consensus point of view was expressed in the famous review "A survey of corporate governance" written by Shleifer and Vishny on the problems of corporate governance (Shleifer and Vishny, 1997). They formulated thesis, which could be named "equivalence thesis". After the detailed analysis of national features of corporate governance system in USA, Germany and Japan Shleifer and Vishny arrived at the conclusion that from effectiveness point of view, these systems can be considered approximately equivalent. None of them possesses some absolute advantages in comparison with other two. Although each of them has its own pluses and minuses, nevertheless eventual results of their activity are approximately identical. In support of their conclusion Shleifer and Vishny appealed to the idea of institutional competition. Let us assume that one or another model is more effective than the others. In that case it is possible to expect that under the pressure of competition forces the less successful systems will start moving towards more successful,

imitating the most important elements of its institutional structure. However, in practice similar rapprochement was not observed. During many decades all three compared models moved along their own trajectories without visible attempts to come down from them. This, in opinion of Shleifer and Vishny, was possible to consider as the confirmation of the fact that despite numerous national features of corporate governance models, formed in USA, Germany and Japan, all of them in the end worked equally good or, in mirror formulation, equally bad.

Approximately at the same time British researchers Franks and Mayer in their working paper "Corporate control: a comparison of insider and outsider systems" proposed general formula, which in terse form expressed main distinctive characteristics of corporate sector organization in USA, Germany and Japan (Franks and Mayer, 1994). Three characteristics were considered as crucial: 1) which of external sources of financing investments is leading; 2) where locus of control is situated; 3) on whose interests predominantly the entire activity of organization is being oriented. According to Franks and Mayer Anglo-Saxon model of corporate governance inheres predominance of capital market, control from the side of outsiders and orientation on the interests of shareholders (stockholders). Accordingly, alternative model, which is functioning in Germany and Japan, was described by them as model with predominance of banks, control from the side of insiders and orientation on the interests of stakeholders, i.e. more wide range of agents which includes, besides owners of the companies, also their workers, suppliers consumers, representatives of local communities, etc. Franks-Mayer formula rapidly gained popularity also in literature dedicated to the comparative analysis of corporate governance national systems and continues to be widely used until now.

However, already in the second half of 1990s consensus ideas, formed in the previous period, were exposed to radical reconsideration. One may speak about conceptual breakthrough, which occurred in these years. And the matter is not only in the fact that the difficulties which faced economies of Germany and Japan continued to increase and the real movements towards Anglo-Saxon model of corporate governance began to show. It is of greater importance that researchers finally caught sight of big body of country data, from which it became clear that in reality the world of corporate governance looks far from how it seemed earlier (La Porta, López-de-Silanes and Shleifer, 1999). A great deal that was perceived as a general rule, in reality turned out to be the rarest exception.

The essence of the occurred conceptual shift can be explained by taking as a starting point Franks-Mayer formula. In the light of new ideas it became clear that separating characteristics, from which this formula stems, are derivatives of more important and more fundamental factor. This factor is concentration of ownership.

2.2. Basic models of ownership concentration

Based upon the abovementioned fundamental criterion, the newest studies separate two basic models of large corporation. First, corporation with spread ownership, or, in other terms, with the wide possession of shares (the widely held corporation model). The essence of this model lies basically in "contemporary corporation" of Berle-Means. Organisation is being controlled by professional managers with loyal to them board of directors and passive mass of small shareholders. Second, corporation with the concentrated ownership, or, in other terms, with the prevailing blockholder owners (the blockholder model). In this case corporation is being controlled by the important owners, who have the capability at their own discretion to form board of directors (if necessary heading it), and also to assign and to change the top managers. Who in such corporations comes out in the role of the controlling owners? Most frequently – rich families (hence term – "family capitalism"), less frequent - government, and even less frequent – financial institutes or other non-financial corporations.

That means that in the most general form there are two ideal types of contemporary large organisations – with deconcentrated (widely held) and with concentrated (blockholder) ownership structure, each of which has its own advantages and disadvantages. Nowadays blockholder ownership model is not a rare phenomenon in large public corporations. Block-holders are widespread occurrence in corporate governance. A lot of firms all over the world are being directed, administrated and controlled by blockholders. A whole series of studies showed that out of the Anglo-Saxon world widely held form of ownership structure is en-countered sufficiently rarely. In the majority of the countries all over the world predominate the companies which have controlling shareholders – blockholders, moreover this role can play as well the state (La Porta, López-de-Silanes and Shleifer, 1999; Morck and Steier, 2005). In many companies it is possible to identify blockholder – individual or collective. A lot of leading private banks in fact have one owner. But even in these rare cases, when experts of Standard & Poor's (2007) disclosed deconcentrated ownership, there are reasons to assume the presence of collective blockholder, i.e. group of interrelated (affiliated) shareholders. The survey also shows that ownership and control during the recent years was increasing steadily.

A lot of research has shown that blockholders play significant role both in companies and in economies as a whole (Thomsen, 2005). However, there seems to be a lack of theoretical and practical focus on blockholder ownership. It gives room for further research in different fields of company activities, which may be influenced by the presence of blockholders. For example, R&D, capital expenditures, diversification, employment downsizing, etc.

2.3. Blockholders and other firm shareholders

Before going on deeply into investigating the aim of this thesis – relationship between blockholders and diversification – it is important to understand who blockholders are and why blockholder ownership is attractive to so many shareholders.

There is no unique definition of blockholder in scientific papers. All of them define blockholders as large shareholders or owners of a large part of the shares, but, however, not a lot of them specify how big this "large part of the shares" should be. In this thesis I will follow definition of Dlugosz et al. (2004) defining blockholder as a person or entity that owns directly or indirectly (through a trust or a company) a large proportion of ownership shares of the company – at least five percent.

Many papers focused on investigation of blockholders, but one of the fullest surveys was made by Holderness (2003). The most vital finding in his paper is that other shareholders do not have to worry about the presence of blockholders in their companies, especially when blockholders are being involved in company management (inside blockholders) for couple of reasons – blockholders have the same incentive as other shareholders, to increase firm's value.

Motivation for blockholder ownership. Holderness (2003) claims that there are two reasons motivating blockholder ownership. First of all, blockholders have shared benefits of control. The bigger part of shares blockholder has in the firm, the higher is the return he wants to get. To increase his returns on investments, blockholder has to increase firm's expected cash flows by the means of increasing the value of the firm. In the end that means that blockholder's incentives benefit not only him, but other shareholder as well. This motivation for blockholder ownership finds confirmation in other papers also (Shleifer and Vishny, 1986). However, it would be ridiculous to assume that blockholder ownership is motivated only by shared benefits. The second motivation for blockholder ownership highlighted by Holderness was private benefits of control. Blockholders are able to get private benefits from which other smaller shareholders are being left out. To provide example of private benefits, blockholders are more likely to be paid higher salary and to have higher degree of control. Holderness points out the fact that many surveys assume that private benefits reduce the wealth of other shareholders, however it is wrong, because private benefits not only leaving benefits of other shareholders untouched, but also may take the form of shared benefits in the end (Holderness, 2003).

2.4. Blockholders and diversification

In every rapidly-growing environment firms, which are willing to stay active in the market and to keep their competitiveness, have to consider several logical strategic alternatives. In economic practice there can be large numbers of strategic alternatives, in which firms can develop and expand themselves under certain market conditions. One of these alternatives is diversification. In economic literature one can encounter a great number of diversification definitions. However, in very broad perspective "diversification encompasses the entry of an organization – a whole firm or one of its business units – into new lines of activity" (Haveman, 1993, p. 594). It can find expression in two growth strategies – expansion of commodity assortment and expansion of market. For each firm diversification means both, new possibilities for expansion and growth and significant risk of running unknown business under unusual conditions. However, diversification can include both, new products and new markets. Diversification strategy is realized either by the mean of merger (or acquisition) with other firm or by the mean of creating new enterprise. Given that diversification has big impact on the firm's value, the presence of blockholders should affect the level of firm's diversification (Markides, 1995; Doukas and Lang, 2003).

Types of diversification. After taking decision to diversify, firm should choose one of alternative ways to do so. There are many strategic approaches. From marketing strategy perspective one can find different types of diversification, but typically these types take three forms – vertical, horizontal (business) and geographical. Vertical diversification refers to the movement along value chain. It is situation when company uses part of the resources in order to form or to acquire organisations, which will supply to this particular firm necessary materials and raw materials and/or will provide it with marketing outlets for the output. Under horizontal (business) diversification moving into new industry is understood. It can be characterized as expansion of current product assortment with new articles, which differ from those produced before, but may generate interest of existing customers. Business diversification should perform missions, which correspond with firm's know-how and experience in technologies, finances and marketing. And finally, geographical diversification is situation when firm activities cross the boarders of the country. Firm choose entry to new geographical region because of the limited growth possibilities on the local market or for purposes of global superiority.

This paper will focus its attention only on relationship of blockholders with two types of diversification – business and geographical.

Motivation for diversification. As empirical findings showed corporate diversification has not only benefits, but also costs. To benefits of diversification one can attribute economies of scope, internal capital markets and increased debt capacity (Chen and Ho, 2000). Economies of scope are a prevailing explanation for diversification. It stems from the fact that the company involved in different businesses or active in different regions can share simultaneously already existing tangible and intangible resources within it and between its subsidiaries, what as a result gives lower costs of production (Helfat and Eisenhardt, 2004). Another explanation for diversification is creation of internal capital markets. Internal capital markets in comparison with external capital markets remove the threat of information asymmetries and agency costs, what makes it possible to finance profitable projects without any problems. And lastly, diversification leads to increased debt capacity. If one of the business units or geographic regions has excess cash flows, it can be used by the firm in case of need. Due to this effect, firm will have the benefit of increased debt capacity (Melnik and Pollatschek, 1973).

Abovementioned benefits of diversification advantage the whole company, however, diversification can also assistance only individuals, in particular, managers of the firm. It is considered to be costs of diversification, also known as "agency costs". Managers may be willing to diversify company for several reasons. These reasons are managerial risk reduction and desire for increased private benefits and protection of their human capital (Hoskisson and Hitt, 1990). Amihud and Lev (1981) claim that diversification may reduce managerial risk, which includes risk of being fired or getting cut in income. When one of the firm's businesses or geographical area goes bankrupt, it will still be active in other businesses or regions. That leads to assumption that by the means of diversification managers may also diversify their employment risk, but only if profitability of the firm does not extremely suffer. The second reason for managers to seek for firm diversification is their desire for increased compensation. Dyl (1988) and Tosi and Gomez-Mejia (1989) provide evidence that diversification gives managers additional benefits, that other shareholder do not benefit from. They present relationship between level of diversification and managers' compensation. Higher levels of firm diversification unavoidably lead to bigger firm size and, of course, to more responsibilities and scope of control for managers, what in turn increases their compensation. As a result, risk reduction and increased compensation gives managers motivation to increase firm's level of diversification. However, existing literature claims that owners of the company, board of directors and other corporate governance mechanisms may keep a tight rein on managers in order to keep them from overdiversification.

Blockholder ownership and agency costs. The central component of corporate governance paradigm is "principal-agent" problem, i.e. getting hired managers (agents) out of shareholders' (principals) control and their opportunism under dispersed share capital structure and under separation of ownership from management. It gives birth to the need of representative, independent and strong board of directors. Though, unfortunately, the whole series of studies showed that effect of corporate governance theory is not that universal: out of Anglo-Saxon world dispersed form of ownership is encountered sufficiently rarely (Franks and Mayer, 1994).

Under blockholder ownership structure agency theory predicts the same principal-agent problem as under widely held (dispersed) structure. Due to low costs of ownership transfer shareholders are willing to reduce their risk by diversifying their wealth over a number of firms (Jensen and Meckling, 1976). When portfolios of shareholders become too big, they are not able any more to manage all shares on their own. That's why they resort to the help of professional managers to take control over their shares. This is the starting point of separation of ownership and managerial control, as well as principal-agent problem. Because principal (shareholder) takes into consideration that agent (manager) may take advantage of this situation, he has incentive to monitor agent's actions (agency costs) (Fama and Jensen, 1983). When shareholders have large block of shares in particular company, these incentives are much stronger (because benefits are higher than monitoring costs) than when shareholders have only small part of shares (because benefits can be smaller than monitoring costs) (Alchian and Demsetz, 1972). As it was mentioned earlier managers fancy diversification for two reasons: they can reduce the risk of being fired, because if one of the business or regions where firm is active does not succeed, they still have other business or regions, and they can increase their compensation, because diversification leads to bigger firm size and, of course, to more responsibilities (Hill and Snell, 1988; Tosi and Gomez-Mejia, 1989). That means that based on everything abovementioned, the logic of relationship between blockholders and diversification is following: if a firm has many blockholders, they will be much more monitoring managers' activities and in turn managers will have fewer incentives for diversification. Therefore it can be assumed that whenever firm has more blockholders, the lower the level of firm's diversification will be:

Hypothesis 1: *Firm's level of diversification is negatively influenced by the presence of blockholders.*

Inside and outside blockholder ownership. Existing economic literature draws its attention to the distinction of blockholders between different groups. One can find affiliated blockholders, non-officer director blockholders, officer blockholders, ESOP blockholders and outside blockholders. All of them have different set of incentives, which may determine their behaviour. For example, blockholders, who not only possess share but are also active in managing the firm, have different incentives than outside blockholders, who do not participate in managing the firm. As it mentioned above blockholders have two types of incentive – to make management of the firm better as well as to use corporate resources. Governance structure of large public companies can be divided in many ways, but the two major categories between which blockholders are being distinguished are inside and outside blockholders.

Inside blockholders are large shareholders who have a financial interest in its operating performance and they also perform a role within the company, usually with management responsibilities. They are not only getting their part of profit, but they also participate actively in company management. But do inside blockholders are widespread phenomenon in public corporations? This question does not have one clear answer, because the level of inside blockholder ownership can be influenced by many factors, such as national characteristics. But since empirical research of this paper is based on US companies, I will address my attention only to their findings. Many American studies concentrated on inside blockholder ownership and all of their results about the level of inside ownership at public corporations in the United States vary at approximately 20 percent (Mikkelson and Partch, 1989; Holderness, Kroszner and Sheehan, 1999). That means that the presence of inside blockholders in firms is significant and their decisions may influence firm's strategic orientation and value.

Literature about the impact of inside blockholder ownership on firm's level of diversification is mixed. Some find that inside ownership has negative relationship with diversification (Denis, Denis and Sarin, 1997), while others find no relationship at all (Chen and Ho, 2000). In general, agency theory suggests that inside shareholders are similar to other shareholders. In addition, inside blockholders are also usually present in the board of directors. That means that they are legally liable for failure to represent shareholder interests (Hoskisson, Johnson, Moesel, 1994). Blockholders who are also managing the company are very alert not to reduce firm value. Since overdiversification is one of the ways which can reduce value of the firm, next hypothesis can be proposed:

Hypothesis 2: *Firm's level of diversification is negatively influenced by the presence of inside blockholders.*

In comparison with inside blockholders, outside blockholders are large shareholders who have no links with the company but have a financial interest in its operating performance. They are only getting their part of profit, but they do not participate in company management. Not so many studies of blockholder ownership focused their attention on outside blockholders. One of them was made by Mehran (1995), who studied 153 randomly chosen manufacturing firms and found that more than a half of these firms had outside blockholders. That means that outside, as well as inside, blockholders have significant position in corporate governance structure and their influence on firm's strategy and value should not be left out of academic attention.

Relationship between outside blockholders and other shareholders of the company is similar as to the agent-principal problem. Since outside blockholders do not have any link with the firm, they cannot oversee the real situation of how it is being managed and that is why they are being very alert of what top management is doing. Thus, when shareholders have a substantial ownership position in a firm, like blockholders do, they are willing to exercise their authority (Johnson, Hoskisson and Hitt, 1993; Mallette and Fowler, 1992). That's why they are willing to actively monitor strategy formulation, preventing overdiversification. Thus, based on these assumptions, following hypothesis can be formulated:

Hypothesis 3: *Firm's level of diversification is negatively influenced by the presence of outside blockholders.*

Accounting performance. The question of many studies devoted to the topic of diversification is whether more diversified firms have better performance than less diversified firms. This relationship was investigated by many researchers and yet they did not come to consensus (Dubofsky and Varadarajan, 1987). Empirical evidence on this issue is mixed. On the one hand, researchers believe that firm diversification and performance is negatively correlated (Hoskisson, Johnson and Moesel, 1994; Lang and Stulz, 1994). They assume that when firms have already certain level of diversification and monitoring is quite weak managers may seek for diversification with bad or poor performance. Explanation for this is private benefit incentives explained before. By the means of firm's diversification managers are trying to reduce their risk in order to stay employed at the expense of firm performance. Their view is supported by other findings, claiming that less diversified firms have better accounting performance than more diversified firms (Hoskisson, Hitt, Johnson and Moesel, 1993). On the other hand, other studies inferred that more diversified firms outperform firms with less diversification (Michel and Shaked, 1984; Montgomery and Wilson, 1986). Results of firm performance

and level of firm diversification are mixed and it is hard to give a conclusion about their relationship (Hoskisson, Johnson and Moesel, 1994). There are different points of views on this subject – some find positive or negative relationship, other no relationship at all. However, the majority of previous findings showed that high levels of diversification led to low levels of accounting performance, so it is possible to assume that there is a negative relationship between firms' diversification and accounting performance (Hoskisson, Johnson and Moesel, 1994; Hoskinson, Hitt and Hill, 1993). Therefore, third hypothesis can be proposed:

Hypothesis 4: *Firm's level of diversification is negatively influenced by accounting performance.*

Firm leverage. Some of existing literature found positive relationship between diversification and firm's debt (Hitt, Hoskisson and Ireland, 1990; Hoskisson and Johnson, 1992). It seems that use of debt is a frequent financial strategy to fund diversification. As such, fifth hypothesis can be introduced:

Hypothesis 5: *Firm's level of diversification is positively influenced by firm's level of leverage.*

Firm size. Previous findings on diversification provide evidence that firm size has a strong positive correlation with its level of diversification (Salter and Weinhold, 1979; Gort, 1962; Gollop and Monahan, 1991). It is not surprising that larger firms are more diversified than smaller firms, because as the company gets bigger, it has to diversify its risks. Thus, it brings me to my last hypothesis:

Hypothesis 6: *Firm's level of diversification is positively influenced by firm's size.*

3. Data and measurement

This chapter will look now at the empirical part of the paper. First, it will be described how final data was collected. Second, which measures it includes. And, finally, which method was used to analyse them.

3.1. Sample

As it was already said, there was little research made before, which tested influence of blockholder ownership on the level of firms' diversification. The ones that were done didn't provide any standardized data set that can be used. That's why on the basis of available information, data set has to be constructed independently. In order to measure levels of firm's diversification and link it to the presence of blockholders in the company, data from two sources was combined. The first source included all data needed to measure the presence of blockholders in the company and the second source included all information needed to calculate the firms' level of diversification.

Though sufficient researches were made in blockholder ownership, not a lot of data is available publicly. Nevertheless, a very good data set is provided by Andrew Metrick in his paper "Large Blocks of Stock: Prevalence, Size, and Measurement" (Dlugosz, 2004). This data set is available on the website of The Wharton School of the University of Pennsylvania[1]. His data set consists of 1,913 unique firms and 7,649 firm-years. All of these firms have blockholder ownership. However, in his data set he also includes 591 firms that have no blockholder ownership. So, all in all, final data set consists of 2,504 unique firms and 8,589 firm-years. I use Metrick's data set as a starting point, because it includes very precise and full information about US companies that both – have and have not, blockholder ownership, and my goal is to make my final data set as full and comprehensive as possible. This data set distinguishes 5 groups of blockholders – affiliated blockholders, non-officer director blockholders, ESOP[2] blockholders, officer blockholders and outside blockholders. Though data is so precise, in this paper attention will be paid only to two groups of blockholders – inside (insiders) and outside (outsiders) blockholders. It is easy to do, because number of outside

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[1] http://finance.wharton.upenn.edu/~metrick/data.htm, accessed on the April 8th, 2009

[2] An Employee Stock Ownership Plan (ESOP) is an employee benefit plan which makes the employees of a company owners of stock in that company. Several features make ESOPs unique as compared to other employee benefit plans. First, only an ESOP is required by law to invest primarily in the securities of the sponsoring employer. Second, an ESOP is unique among qualified employee benefit plans in its ability to borrow money. As a result, "leveraged ESOPs" may be used as a technique of corporate finance.

blockholders is already given, and number of inside blockholders can be calculated by summing other 4 groups – affiliated blockholders, non-officer director blockholders, ESOP blockholders and officer blockholders. The paper measures the presence of blockholders in the firm with two parameters – number of above-enumerated blockholders and percentage of shares held by them. The data set covers 6 years – from 1996 till 2001.

In order to expand the first sources of data with data about firms' level of diversification, information available on COMPUSTAT North America[3] was used. Searching criteria were restricted to the first data set. First of all, searching was restricted, of course, to the same firms as were in the first data set. To find this information, as well as to combine it later with the first data set tickers[4] were used. And secondly, searching was restricted to the 6 years covered in first data set – from 1996 till 2001. Lack of COMPUSTAT reduced the number of firms with all necessary criteria to 1337 unique firms and to 7483 firm-years.

Both of these data sets have the advantage of easy cross-firm and longitudinal comparison. OLS regression model is used to estimate the longitudinal development of the aforementioned measures. The regression model is clustered (robust) around firm identity numbers.

3.2. Measures

The following variables were included into regression models:

Dependent variables – firm diversification. Analogous to the approach of other researchers (Comment and Jarrel, 1995; Denis, Denis and Sarin, 1997; Lang and Stulz, 1994) firms' level of diversification is defined using two measures – number of business and geographic segments and revenue-based Herfindahl indexes by business and geographic segments.

Number of segments. The number of business segments was calculated by the number of industries particular firm was active during the years of observations. As to the number of geographic segments, it was calculated by the number of countries a firm was active during the years of observations. These measures are readily available in COMPUSTAT and thus suitable for cross comparison among industries/countries and years.

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[3] http://wrds.wharton.upenn.edu/ds/comp/index.shtml, accessed on the 25th May, 2009

[4] A system of letters used to uniquely identify a stock or mutual fund. Symbols with up to three letters are used for stocks which are listed and trade on an exchange. Symbols with four letters are used for Nasdaq stocks. Symbols with five letters are used for Nasdaq stocks other than single issues of common stock. Symbols with five letters ending in X are used for mutual funds.

Revenue-based Herfindahl index. The revenue-based Herfindahl index is computed as the sum of the squares of each segment's revenue as a proportion of total revenue for the firm (Chen and Ho, 2000):

$$Herfindahl = \sum S_i^2, \ i = 1, 2, …, n, \text{ where}$$

$$S_i = \frac{revenue\_i}{revenue}$$

S_i – market share of firm i in the market

n – number of firms

revenue_i – share of revenue of firm i in particular segment

revenue – total amount of revenue for the firm

$0 < Herfindahl \leq 1$

Revenue-based Herfindahl index was calculated for both – business and geographic segments – in industries and countries firm was active during the years of observations respectively. It can range from 0 to 1. A small index represents high level of diversification, while big index represents low levels of diversification.

Independent variables. As independent variables, which based on literature review, should have an influence on the level of firms' diversification, 5 measures were chosen. Two of them – number of blockholders and percentage of shares held by blockholders – represent the presence of blockholders in the firm. In order to avoid multicollinearity they are used in separate regressions, as a result forming 8 different patterns. Others – debt/assets, assets and accounting performance – depict the value of the firm.

Number of blockholders. As it was mentioned before, in this paper I will distinguish blockholders among inside and outside blockholders. One of the measures calculating the presence of abovementioned blockholders is simply by calculating their number in particular firm. Since basis data set about blockholders, provided by Metrick (2004) in his paper, goes far beyond distinguishing just between insiders and outsiders, in particular distinguishing insiders among five groups, the number of inside blockholders was calculated as the sum of these groups – affiliated, non-officer director , ESOP and officer blockholders.

Percentage of blockholders' shares. The second measure of blockholders' presence in the firm can be calculated as the percentage of shares held by them. I decided to use this second measure, because the number of blockholders may be not precise measure of blockholders' presence. For example, there can be only one or two blockholders in the firm, but they can have almost all the shares, and vice versa, a lot of blockholders in sum may have few shares. Information about percentage of shares was also available from Metrick's (2004) pa-

per, though as well as with the number of blockholders, percentage of shares held by insiders had to be calculated as the sum of five other groups.

Firm leverage. Firm leverage was calculated as long-term debt divided by total assets, what as a result gives debt-to-assets ratio, which varies between 0 and 1. Firm leverage was adjusted by industry and time effects.

Firm size. Firm size was calculated by taking the logarithms of total assets. Firm size was adjusted by industry and time effects.

Accounting performance. In order to estimate relationship between diversification and accounting-based performance, several studies used different accounting-based measures – return on equity (ROE), return on investment (ROI), return on assets (ROA) and return on sales (ROS) (Hoskisson and Hitt, 1990; Hoskisson, Johnson and Moesel, 1994; Keats, 1990). But since all of these measures substitute each other, which lead to multicollinearity in regressions, in my paper I will concentrate only on one indicator – return on assets (ROA), which is being calculated as net income divided by total assets. ROA characterizes the ability of the company management to effectively use its assets so as to obtain the profit. Furthermore, ROA reflects the average profitableness, obtained to all sources of capital (own and borrowed). Values for the ROA measure were obtained from COMPUSTAT for the 6-year period following the diversification observations from 1996 till 2001.

Time dummies. Final data set observes 6 years – from 1996 till 2001. For all of them dummy variables were created and included into regression models.

Industry dummies. Information about industries was got from US government system for classifying industries – Standard Industrial Classification code list (SIC). SIC classifies establishments by their primary type of activity. Originally, SIC is a four-digit code, where first two digits give general information about industry and other two digits already go into clarifications of the industry. For this research general information about industry is enough, that's why four-digit codes were shortened to two-digit. Final data set includes 64 industries. For all of them dummy variables were created and included into regression models.

3.3. Regression patterns and method

In existing literature there is no one specific method of measuring level of firm diversification. Some tend to measure firm diversification using the entropy measure[5] (Jacquemin

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[5] The Entropy (inverse) measure of industry concentration weights each p_i by the logarithm (log) of $1/p_i$, e.g.:

$$E = {}_{i=1} \sum^{n} p_i \log 1/p_i$$

and Berry, 1979), some – number of segments, asset-based or revenue based Herfindahl index (Chen and Ho, 2000). This paper will follow Chen and Ho by using two out of three proposed measures of firm diversification – the number of business and geographic segments, and revenue-based Herfindahl index of business and geographic segments. Thus, all in all, I will have two patterns with four dependent variables measuring firm business or geographic level of diversification:

Pattern (A)

The first model measures level of firm diversification by the number of business or geographic segments. As such, firm is considered to be more diversified if it has more business or geographic segments it is active in.

Pattern (B)

The second model measures level of firm diversification by the Herfindahl index of business or geographic segments. As such, firm is considered to be more diversified if Herfindahl index of business or geographic segments is lower.

Approach of this paper is to estimate aforementioned models in a two-stage process. First, good measurements have to be established. Second, theoretical models are being tested. In order to evaluate the longitudinal development of the measurements, I use OLS regression model clustered around firm identities and random effects model also clustered around firm identities.

OLS econometric model for both of these patterns can be expressed mathematically as:

Firm business or geographical diversification = β_0 + β_1*(*number of inside blockholders*/*percentage of shares held by inside blockholders*) + β_2*(*number of outside blockholders*/*percentage of shares held by outside blockholders*) + β_3*(d*ebt/assets*) + β_4*(a*ssets*) + β_5*(*ROA*) + *u*, where

β_0, β_1, ..., β_5 – constant parameters of econometric model

u – unobserved factors

Random effects model includes everything what was in above described OLS econometric model plus unobserved effect *a*, which is assumed to be uncorrelated with all explanatory variables in all observed time periods:

Firm business or geographical diversification = β_0 + β_1*(*number of inside blockholders*/*percentage of shares held by inside blockholders*) + β_2*(*number of outside blockholders*/*percentage of shares held by outside blockholders*) + β_3*(d*ebt/assets*) + β_4*(a*ssets*) + β_5*(*ROA*) + *a* + *u*

Unobserved firm effect or a firm fixed effect a represents all factors affecting the level of firm diversification that do not change over time. Different firms have different attitudes towards diversification and they may report about their level in different methods. All these factors are usually not changing so quickly. For different reasons some firms can have different speed of diversification. This fact can be partially captured by the unobserved effect a (Wooldridge, 2002).

In empirical research one can find regression analysis with different types of data sets. Quite a lot of papers make multiple regression analysis using only cross-sectional or only time series data. Though these data sets are still being often in use, the growing number of empirical research are starting to use data sets that have both, cross-sectional and time series dimensions. In comparison with one-dimension data sets, two-dimension data sets can often shed the light on important policy questions (Wooldridge, 2002).

To analyze relationship between the presence of blockholders and firm's level of diversification panel data set on US public firms was constructed. Panel data set, which is also sometimes called longitudinal data, is a two-dimension data set that includes both, cross-firms and a six-year series dimension. The main feature of panel data set that distinguishes it from other two-dimension data sets is the fact that it follows (or at least attempts to follow) the same companies across the same selected years.

4. Results

In this section the results of the analysis will be discussed. First, I will look at the descriptive statistics with correlations of the variables, and then, at the results of hypotheses introduced before.

4.1. Overview of the tables

Table 1 presents descriptive statistics of all the variables used in OLS regressions. As you can see from the table number of observations of all variables varies from 5,519 to 7,130 what makes data set big and good enough to get significant results from the OLS regressions clustered around firm identities. The maximum number of geographical segments is almost twice higher than business segments, as well as the mean for geographical number of segments is higher than for business number of segments. Minimums and means of Herfindahl indexes are almost the same. When comparing insiders and outsiders it is clear that on the average the studied firms have more than three times more outsiders than insiders, as well as the percentage of shares held by outsiders on average is more than twice bigger than of those held by insiders. If we look at Kurtosis, we'll see that almost all variables, except Herfindahl indexes, have Kurtosis over normal distribution (equal to 3.00), what in turn means that tails of their distribution are too thin (hence too picked in the middle). Mov-

Table 1.
Descriptive statistics

Variables	Obs	Mean	Median	Min	Max	Kurtosis	Skewness
Number of business segments	6,476	2.358	2	1	10	4.151	1.224
Number of geographic segments	6,247	2.554	2	1	18	15.374	2.481
Herfindahl index by business segments	6,428	0.770	0.970	0.133	1	1.801	-0.605
Herfindahl index by geographic segments	6,216	0.767	0.847	0.126	1	1.758	-0.507
Number of insiders	5,519	0.553	0	0	6	7.019	1.710
Number of outsiders	5,519	1.793	2	0	9	3.370	0.771
Percentage of insiders' shares	5,519	0.075	0	0	0.91	8.791	2.261
Percentage of outsiders' shares	5,519	0.165	0.14	0	0.93	4.927	1.237
Debt/Assets ratio	6,963	0.565	0.585	0.002	0.992	2.317	-0.235
Assets	7,130	9580	1237.578	0.181	1051450	174.587	11.827
ROA	7,124	0.032	0.044	-8.772	1.407	612.353	-19.768

ing on to skewness, it is easy to see that the majority of the variables are positively skewed. That means that their distribution trails off in the right direction. The only variables skewed to the left are Herfindahl indexes, assets and ROA. Almost all variables, except assets and ROA, are in the limits of normal skewness distribution – variables are more or less symmetric (between – 0.60 and 2.26). Assets and ROA have high skewness: 11.82 and -19.76 respectively. That means that there are a lot of companies with relatively low assets, but there just few companies who have extremely high assets. By contrast, ROA is negatively skewed because there are a lot of companies who have high ROA, but there are relatively fewer who have low ROA.

Table 2 reports correlations of the dependent and independent variables in the regressions. Multicollinearity looks to be of no concern, because variance inflation factors are quite low (the maximum is 3.05). There is only four strong correlations – between number of business segments and Herfindahl index by business segments (-0.85), between number of geographical segments and Herfindahl index by geographical segments (-0.71), between number of inside blockholders and percentage of shares inside blockholders hold (0.77) and between number of outside blockholders and percentage of shares outside blockholders hold (0.80) – which are also all highly significant. It is not surprising that they have such a high correlations, because both – number of business/geographical segments and Herfindahl index by business/geographical segments – are measures of firm level of diversification. As well as percentage of shares held by insiders/outsiders tends to increase with the number of inside/outside blockholders within a firm. All other variables have weak or almost no correlation at all.

As it was already said before, analysis is made in two types of diversification – business and geographical. As well as, in order to get better results, two ways of measuring firm level of diversification is used – by number of segments and by Herfindahl index. And lastly, to have even better information, the presence of blockholders in the company is also measured in two ways – by number of blockholders and by shares they hold. All in all, this leads to 8 separate regressions. Tables 1 through 8 report results of clustered OLS regressions clustered around firm identity.

Tables 3 to 6 have as dependent variable number of business and geographical segments. Number of segments are being calculated simply by the number of segments firm was active in diversification observations. Tables 3 and 4 have number of business segments as dependent variable. The only difference is that Table 3 measures the presence of blockholders in numbers and Table 4 – in percentage of shares blockholders have in particular

Table 2.

Correlations of the variables

		1	2	3	4	5	6	7	8	9	10	VIF [a]
1	Number of business segments											
2	Number of geographic segments	0.160										2.08
3	Herfindahl index by business segments	-0.854	-0.176									1.13
4	Herfindahl index by geographic segments	-0.112	-0.713	0.149								2.07
5	Number of insiders	-0.052	-0.075	0.058	0.103							2.72
6	Number of outsiders	-0.109	-0.001	0.099	-0.004	-0.124						3.04
7	Percentage of insiders' shares	-0.052	-0.076	0.057	0.097	0.773	-0.146					2.74
8	Percentage of outsiders' shares	-0.104	-0.005	0.100	0.005	-0.140	0.809	-0.164				3.05
9	Debt/assets	0.290	-0.005	-0.264	0.014	-0.074	-0.081	-0.089	-0.068			1.15
10	Assets [b]	0.184	0.086	-0.155	-0.071	-0.055	-0.134	-0.065	-0.118	0.241		1.09
11	ROA	-0.001	-0.034	0.003	-0.011	-0.024	-0.023	0.002	-0.015	-0.127	-0.006	1.02

Notes: [a] VIF=Variance Inflation Factor, [b] Variable is logarithmized. N=4275.
Correlations with an absolute value greater than 0.03 have a p-value ≤ 0.05.

Table 3.

Dependent Variable – Number of business segments, the presence of blockholders is measured by number of insiders and outsiders

Independent variables	Model I β (SE)	Model II β (SE)	Model III β (SE)	Model IV β (SE)	Model V β (SE)
Number of insiders	-0.132*** (0.048)	-0.167*** (0.050)	-0.125** (0.049)	-0.014 (0.047)	-0.014 (0.047)
Number of outsiders		-0.126*** (0.025)	-0.138*** (0.024)	-0.062*** (0.021)	-0.062*** (0.021)
Debt/assets			1.996*** (0.223)	0.959*** (0.212)	0.959*** (0.213)
Assets [a]				0.319*** (0.033)	0.319*** (0.033)
ROA					0.002 (0.165)
N obs.	4,624	4,624	4,624	4,624	4,624
F-test	$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$
R^2	0.190	0.200	0.240	0.292	0.292

Notes: [a] Variable is logarithmized. * $p \leq 0.1$ ** $p \leq 0.05$ *** $p \leq 0.01$. Time and industry dummies are being included into regressions. OLS regressions are clustered around firm identities. One-sided statistical test is used.

Table 4.

Dependent Variable – Number of business segments, the presence of blockholders is measured by percentage of shares held by insiders and outsiders

Independent variables	Model I β (SE)	Model II β (SE)	Model III β (SE)	Model IV β (SE)	Model V β (SE)
Percentage of insiders' shares	-0.665 (0.421)	-0.987** (0.435)	-0.693 (0.429)	0.112 (0.416)	0.112 (0.416)
Percentage of outsiders' shares		-1.262*** (0.314)	-1.303*** (0.309)	-0.600** (0.279)	-0.600** (0.279)
Debt/assets			1.977*** (0.224)	0.946*** (0.214)	0.945*** (0.215)
Assets [a]				0.324*** (0.034)	0.324*** (0.034)
ROA					-0.003 (0.167)
N obs.	4,624	4,624	4,624	4,624	4,624
F-test	$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$
R^2	0.189	0.200	0.238	0.292	0.292

Notes: [a] Variable is logarithmized. * $p \leq 0.1$ ** $p \leq 0.05$ *** $p \leq 0.01$. Time and industry dummies are being included into regressions. OLS regressions are clustered around firm identities. One-sided statistical test is used.

Table 5.

Dependent Variable – Number of geographic segments, the presence of blockholders is measured by number of insiders and outsiders

Independent variables	Model I β (SE)	Model II β (SE)	Model III β (SE)	Model IV β (SE)	Model V β (SE)
Number of insiders	-0.070 (0.043)	-0.083* (0.044)	-0.068 (0.044)	0.015 (0.045)	0.015 (0.045)
Number of outsiders		-0.045* (0.025)	-0.048* (0.025)	0.008 (0.024)	0.008 (0.024)
Debt/assets			0.663*** (0.205)	-0.102 (0.202)	-0.120 (0.206)
Assets [a]				0.235*** (0.030)	0.237*** (0.031)
ROA					-0.139 (0.189)
N obs.	4,442	4,442	4,442	4,442	4,442
F-test	$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$
R^2	0.214	0.216	0.221	0.253	0.253

Notes: [a] Variable is logarithmized. * $p\leq0.1$ ** $p\leq0.05$ *** $p\leq0.01$. Time and industry dummies are being included into regressions. OLS regressions are clustered around firm identities. One-sided statistical test is used.

Table 6.

Dependent Variable – Number of geographic segments, the presence of blockholders is measured by percentage of shares held by insiders and outsiders

Independent variables	Model I β (SE)	Model II β (SE)	Model III β (SE)	Model IV β (SE)	Model V β (SE)
Percentage of insiders' shares	-0.353 (0.288)	-0.439 (0.301)	-0.334 (0.303)	0.268 (0.303)	0.271 (0.303)
Percentage of outsiders' shares		-0.345 (0.262)	-0.361 (0.263)	0.202 (0.251)	0.201 (0.251)
Debt/assets			0.659*** (0.203)	-0.110 (0.203)	-0.129 (0.207)
Assets [a]				0.241*** (0.030)	0.242*** (0.030)
ROA					-0.140 (0.189)
N obs.	4,442	4,442	4,442	4,442	4,442
F-test	$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$	$p<0.01$
R^2	0.214	0.215	0.219	0.253	0.254

Notes: [a] Variable is logarithmized. * $p\leq0.1$ ** $p\leq0.05$ *** $p\leq0.01$. Time and industry dummies are being included into regressions. OLS regressions are clustered around firm identities. One-sided statistical test is used.

company. Tables 5 and 6 have number of geographical segments as dependent variable. The difference between them is as well in measures of the presence of blockholders – by number and by percentage of shares respectively.

Tables 7 to 10 have as dependent variable Herfindahl index of business and geographical segments. Herfindahl index is calculated as the sum of the squares of each segment's revenue as a proportion of total revenue for the firm. Tables 7 and 8 have Herfindahl index by business segments as dependent variable. Table 7 measures the presence of blockholders by their numbers, while Table 8 – by their percentage of shares. Tables 9 and 10 have Herfindahl index by geographical segments as dependent variable, and as well, Table 9 measures the presence of blockholders by their numbers, while Table 10 – by their percentage of shares.

To estimate how the presence of blockholders influences the level of firm's diversification I used second method – random effects. Each regression also contains a full set of time and industry dummies. The estimations results are presented in tables 11 and 12, where the presence of blockholders is measured by number of blockholders and by percentage of shares blockholders hold respectively. The only variable, whose coefficients are significant and similar for all models of the OLS and random effects estimations, is *assets*. Coefficients

Table 7.

Dependent Variable – Herfindahl index by business segments, the presence of blockholders is measured by number of insiders and outsiders

Independent variables	Model I β (SE)	Model II β (SE)	Model III β (SE)	Model IV β (SE)	Model V β (SE)
Number of insiders	0.019** (0.008)	0.024*** (0.008)	0.018** (0.008)	0.004 (0.008)	0.004 (0.008)
Number of outsiders		0.018*** (0.004)	0.020*** (0.004)	0.011*** (0.004)	0.011*** (0.004)
Debt/assets			-0.327*** (0.037)	-0.200*** (0.039)	-0.199*** (0.039)
Assets [a]				-0.040*** (0.005)	-0.040*** (0.005)
ROA					0.009 (0.030)
N obs.	4,604	4,604	4,604	4,604	4,604
F-test	p<0.01	p<0.01	p<0.01	p<0.01	p<0.01
R^2	0.158	0.167	0.209	0.241	0.241
Notes: [a] Variable is logarithmized. * $p \leq 0.1$ ** $p \leq 0.05$ *** $p \leq 0.01$. Time and industry dummies are being included into regressions. OLS regressions are clustered around firm identities. One-sided statistical test is used.					

Table 8.

Dependent Variable – Herfindahl index by business segments, the presence of blockholders is measured by percentage of shares held by insiders and outsiders

Independent variables	Model I β (SE)	Model II β (SE)	Model III β (SE)	Model IV β (SE)	Model V β (SE)
Percentage of insiders' shares	0.109* (0.057)	0.158*** (0.058)	0.111* (0.057)	0.011 (0.056)	0.011 (0.056)
Percentage of outsiders' shares		0.192*** (0.048)	0.199*** (0.047)	0.112** (0.046)	0.112** (0.046)
Debt/assets			-0.323*** (0.0367)	-0.197*** (0.039)	-0.196*** (0.040)
Assets [a]				-0.040*** (0.005)	-0.040*** (0.005)
ROA					0.009 (0.030)
N obs.	4,604	4,604	4,604	4,604	4,604
F-test	p<0.01	p<0.01	p<0.01	p<0.01	p<0.01
R^2	0.157	0.168	0.209	0.241	0.242

Notes: [a] Variable is logarithmized. * $p \leq 0.1$ ** $p \leq 0.05$ *** $p \leq 0.01$. Time and industry dummies are being included into regressions. OLS regressions are clustered around firm identities. One-sided statistical test is used.

Table 9.

Dependent Variable – Herfindahl index by geographic segments, the presence of blockholders is measured by number of insiders and outsiders

Independent variables	Model I β (SE)	Model II β (SE)	Model III β (SE)	Model IV β (SE)	Model V β (SE)
Number of insiders	0.016** (0.007)	0.019*** (0.007)	0.015** (0.007)	0.000 (0.007)	-0.000 (0.007)
Number of outsiders		0.010*** (0.003)	0.011*** (0.003)	0.000 (0.003)	0.000 (0.003)
Debt/assets			-0.172*** (0.032)	-0.032 (0.034)	-0.029 (0.034)
Assets [a]				-0.043*** (0.004)	-0.044*** (0.004)
ROA					0.027 (0.024)
N obs.	4,428	4,428	4,428	4,428	4,428
F-test	p<0.01	p<0.01	p<0.01	p<0.01	p<0.01
R^2	0.380	0.383	0.397	0.442	0.442

Notes: [a] Variable is logarithmized. * $p \leq 0.1$ ** $p \leq 0.05$ *** $p \leq 0.01$. Time and industry dummies are being included into regressions. OLS regressions are clustered around firm identities. One-sided statistical test is used.

Table 10.

Dependent Variable – Herfindahl index by geographic segments (Herfindahl_g), the presence of blockholders is measured by percentage of shares held by insiders and outsiders

Independent variables	Model I β (SE)	Model II β (SE)	Model III β (SE)	Model IV β (SE)	Model V β (SE)
Percentage of insiders' shares	0.094** (0.046)	0.114** (0.047)	0.087* (0.047)	-0.024 (0.044)	-0.025 (0.044)
Percentage of outsiders' shares		0.078** (0.037)	0.083** (0.037)	-0.020 (0.036)	-0.020 (0.036)
Debt/assets			-0.171*** (0.032)	-0.030 (0.033)	-0.027 (0.034)
Assets [a]				-0.044*** (0.004)	-0.045*** (0.004)
ROA					0.027 (0.024)
N obs.	4,428	4,428	4,428	4,428	4,428
F-test	p<0.01	p<0.01	p<0.01	p<0.01	p<0.01
R^2	0.379	0.381	0.395	0.442	0.442
Notes: [a] Variable is logarithmized. * $p \le 0.1$ ** $p \le 0.05$ *** $p \le 0.01$. Time and industry dummies are being included into regressions. OLS regressions are clustered around firm identities. One-sided statistical test is used.					

of random effects *ROA* are similar with coefficients of OLS *ROA* only in regressions, where dependent variables are *Herfindahl index by business segments* and *Herfindahl index by geographical segments*. Unfortunately, all other coefficients are not similar or statistically insignificant with OLS regressions.

4.2. Results of hypotheses

Now, I will move on to the discussion of the results of hypotheses introduced before.

Blockholder ownership. Hypothesis 1 is supported only for business diversification. The presence of blockholders appears to significantly decrease business diversification. For geographic diversification, results are statistically insignificant.

Inside ownership. Hypothesis 2 cannot be supported for both types of diversification. High proportion of inside blockholders seems to have a non-significant impact on firms' level of diversification.

Outside ownership. Hypothesis 3, predicting that the presence of outside blockholders will be negatively related to firm diversification, was significant, as well as for hypothesis 1, only for business diversification. It is worth mentioning, that the presence of outside block-

Table 11.

Random effects, the presence of blockholders is measured by number of insiders and outsiders

Independent variables	Number of business segments β (SE)	Number of geographic segments β (SE)	Herfindahl index by business segments β (SE)	Herfindahl index by geographic segments β (SE)
Number of insiders	0.031	0.011	-0.003	-0.008*
	(0.035)	(0.036)	(0.006)	(0.004)
Number of outsiders	-0.014	0.027*	0.004*	-0.001
	(0.014)	(0.016)	(0.002)	(0.002)
Debt/assets	0.833***	-0.253	-0.136***	-0.009
	(0.164)	(0.165)	(0.026)	(0.020)
Assets [a]	0.318***	0.225***	-0.044***	-0.042***
	(0.026)	(0.024)	(0.004)	(0.003)
ROA	-0.052	-0.187	0.009	0.034**
	(0.126)	(0.137)	(0.020)	(0.015)
N obs. (groups)	4,624 (1,160)	4,442 (1,153)	4,604 (1,155)	4,428 (1,152)
R^2 within/between/overall	0.278; 0.255; 0.274	0.103; 0.286; 0.247	0.140; 0.219; 0.215	0.103; 0.445; 0.429
Obs. per group: min./avg./max.	1; 4.0; 6	1; 3.9; 6	1; 4.0; 6	1; 3.8; 6
Wald chi^2	1707.93	839.91	874.66	1273.65
Chi^2-test	p<0.001	p<0.001	p<0.001	p<0.001

Notes: [a] Variable is logarithmized. * p≤0.1 ** p≤0.05 *** p≤0.01. Time and industry dummies are being included into regressions. Regressions are clustered around firm identities. One-sided statistical test is used.

Table 12.

Random effects, the presence of blockholders is measured by percentage of shares held by insiders and outsiders

Independent variables	Number of business segments β (SE)	Number of geographic segments β (SE)	Herfindahl index by business segments β (SE)	Herfindahl index by geographic segments β (SE)
Percentage of insiders' shares	0.526**	0.207	-0.062	-0.079**
	(0.247)	(0.247)	(0.040)	(0.031)
Percentage of outsiders' shares	-0.117	0.366**	0.039	-0.027
	(0.158)	(0.169)	(0.025)	(0.019)
Debt/assets	0.823***	-0.260	-0.135***	-0.006
	(0.163)	(0.165)	(0.026)	(0.020)
Assets [a]	0.323***	0.229***	-0.045***	-0.043***
	(0.026)	(0.024)	(0.004)	(0.003)
ROA	-0.057	-0.189	0.010	0.034**
	(0.126)	(0.137)	(0.020)	(0.015)
N obs. (groups)	4,624 (1,160)	4,442 (1,153)	4,604 (1,155)	4,428 (1,152)
R^2 within/between/overall	0.278; 0.255; 0.274	0.103; 0.286; 0.248	0.140; 0.220; 0.215	0.104; 0.445; 0.429
Obs. per group: min./avg./max.	1; 4.0; 6	1; 3.9; 6	1; 4.0; 6	1; 3.8; 6
Wald chi^2	1713.60	842.23	877.92	1277.81
Chi^2-test	p<0.001	p<0.001	p<0.001	p<0.001

Notes: [a] Variable is logarithmized. * $p \leq 0.1$ ** $p \leq 0.05$ *** $p \leq 0.01$. Time and industry dummies are being included into regressions. Regressions are clustered around firm identities. One-sided statistical test is used.

holders, measured as percentage of shares they own, has a stronger impact on business diversification rather than the presence, measured as the number of outside blockholders.

Accounting performance. Unfortunately, hypothesis 4 did not receive any support. Low levels of accounting performance, calculated as ROA, did not significantly increase neither business, nor geographic diversification.

Firm leverage. Hypothesis 5 didn't get support in geographic diversification. High levels of firm's debt don't appear to increase its level of diversification. However, hypothesis 5 met approval among business diversification. Results for business diversification are highly significant in all 4 cases (0.959***/0.945*** using number of segments; -0.199***/-0.196*** using Herfindahl).

Firm size. Hypothesis 6 is undoubtedly supported in all 8 cases. Results are highly significant (0.319***/0.324*** using number of business segments; 0.237***/0.242*** using number of geographic segments; -0.040***/-0.040*** using Herfindahl by business segments; -0.044***/-0.045*** using Herfindahl for geographic segments). In both, business and geographic diversification, firm size does matter.

5. Discussion

A major motivation for this research was to integrate existing literature on blockholder ownership and diversification and explore relationship between them. Several implications can be made from the aforementioned hypotheses and results of the analysis. In the following section I will link theory to the results and discuss implications from two perspectives – implications for theory from the perspective of researchers and implications for practice from the perspective of other shareholders and stakeholders.

5.1. Implications for theory

Blockholder ownership and diversification. One of the central findings of this paper is that inside and outside blockholders have different impact on the observed US public firms. Inside blockholder ownership is found to have no effect with regard to diversification, while outside blockholder ownership decreases the probability of diversification. This paper contributes to controversial existing literature on whether inside blockholders have any impact on firm's level of diversification. Results found in analysis confirm the results found by Chen and Ho (2000) that there is no relationship between inside blockholder ownership and diversification. I think that the possible explanation for this insignificant relationship is that insider ownership is not such a strong governance tool as many researchers consider being. In comparison with outside blockholders, inside blockholders are involved in firm activities, usually with management responsibilities. They can see the real picture of how firm performs, and thus they are not worried that managers or other shareholders in chase of private benefits will overdiversify the firm and as a result decrease its value. Another explanation of the derived results is that firms are willing to diversify, irrelative of the inside blockholder ownership, just because they merely reached the limits of the market where they are operating and in the search of new places to grow and to develop their business, firms choose diversification.

The finding that the firm's level of diversification is negatively influenced by the presence of outside blockholders is in line with other authors who argue that relationship between outside blockholders and other shareholders of the company is similar as to the agent-principal problem (Johnson, Hoskisson and Hitt, 1993; Mallette and Fowler, 1992). Because outside blockholders are not involved in firm management, they are worried about managers and other shareholders to overdiversify the firm, and since they have a significant authority in a firm, they are willing to use it in order to influence firm's value. Thus, limiting the level of

firm diversification can be considered as a reaction to the lack of outsiders' information about firm management. However, this finding is significant only for business diversification.

That is what leads us to another finding of this paper – the fact that the presence of blockholders has different effect on business and geographical diversification. Results showed that the presence of blockholders has an impact only on business diversification, whereas geographical seems to be uninfluenced. One of the possible explanations that the presence of blockholders has no influence on geographical diversification is sample that was used for the analysis. The sample consists of US firms and firms were considered to be geographically diversified only when their activities crossed boarders of USA. We have to remember that firms may choose geographical diversification for two reasons – because of the limited growth possibilities on the local market or for the purposes of global superiority. However, global superiority is of secondary importance in geographical diversification. Mainly firms enter new geographical regions for the reason of limited growth possibilities on local market. But one should not forget that USA is a huge country with a vast territory, where single state can be comparable by the territory with a country, for example, in Europe. However, sample used in this paper analysed geographical diversification on the country level and not on state level. As a consequence, results may misrepresent the actual relationship between blockholders and diversification.

Another likely explanation for no relationship between blockholders and geographical diversification is that blockholders do not worry about managers overdiversifying firm geographically. If in the case of business diversification managers may accrue additional private benefits by getting more control over bigger range of businesses, geographical diversification in most cases presumes that manager of a parent company is not going to run subsidiary abroad. When firms decide to diversify geographically it is being assumed that another person will take over new subsidiary, more likely person from local environment or who is familiar with local culture, traditions and mentality. That means that blockholders may assume that managers will not overdiversify firm geographically since it will not create them any additional private benefits. And that is why blockholders may decide not to use their authority to limit geographical diversification.

Findings about firm size and leverage coincide with other findings (Hitt, Hoskisson and Ireland, 1990; Hoskisson and Johnson, 1992). Firm leverage increases the probability of firm to diversify, however it is being observed only in business diversification. The possible explanation for it can be that funding their new subsidiaries with leverage firms places themselves at a risk of increasing interest rate market. Creditors may be worried that they can not substan-

tially evaluate situation on foreign market, what as a result leads to their unwillingness to lend money for geographical diversification of the firm.

Results also showed that firm's size increases the level of diversification, both – business and geographical, what is in line with previous findings that discovered positive relationship between firm size and the level of firm diversification (Salter and Weinhold, 1979; Gort, 1962). When companies are getting bigger, they establish bigger capital. To keep it all in one business or in one region is quite risky, because if it goes bankrupt, shareholders will loose everything they have. So, in order to diversify the risks, shareholders together with managers are willing to diversify their business to protect themselves against unnecessary threat.

Both types of firm diversification are found to have no effect with regard to accounting performance. These results are evidence in favour of studies suggesting that accounting performance has nothing to do with firm decision to diversify. An explanation for this finding may lie in the employed sample, in particular, in the fact that it did not distinguish diversification between related and unrelated. When firm decides to diversify it may choose two paths – to keep resources in one business activity or region, such as R&D and advertising, or to move into something completely different, which will lead to the partial transfer of capital concentrated in main business or region to the new one. It can be assumed that if firm operates in related businesses or regions, accounting performance may have a significant positive relationship with diversification, because all resources are being concentrated in one place, whereas firms with unrelated diversification split their already existing resources in order to subsidize new subsidiaries, what as a result leads to lower accounting performance. Since my data set did not differentiate related diversification from unrelated, obtained results may misrepresent the reality. Thus, this question needs further investigation.

5.2. Implications for practice

Implications for practice can be considered from two points of views – non-blockholders and other firm's stakeholders. My results show that the level of diversification in firms with outside blockholders increases with their presence. This fact may influence decision of other shareholders who are willing to invest their money. Overdiversification of firm may lead to decrease of firm value, which as a result is being followed by decreased shareholders' payoffs. Since blockholders are aware of the fact that managers are willing to diversify firm in unrelated businesses, so they can get higher managerial compensation and reduce their risk of being fired, they are limiting them from overdiversification and firm value de-

crease. As such, these results are good for shareholders, because higher firm value leads to higher value of the price they are getting for their shares. Thus, firms with blockholders should be more attractive.

Implication for practice can be also given to other firm's stakeholders, such as employees, customers, suppliers, local community or other special interest groups. Though they have nothing to do with ownership they can be influenced by firm decisions. The fact that outside blockholders are present in firms can affect all of them. Outside blockholders are known to have enough of authority inside the firm that gives them the possibility to monitor managers and prevent them from overdiversification which is beyond the optimal level for the firm. As such, some firm stakeholders benefit from it, however, others do not. For example, firm managers suffer from the presence of blockholders. As was already said before blockholders are limiting their activities to prevent form unrelated diversification what implies fewer responsibilities for them and as a result smaller compensation. Thus, managers of firms with blockholders should be more afraid of blockholders' presence. However, the presence of blockholders in firm is good news for other stakeholders. As in the case with shareholders, other stakeholders benefit from the presence of blockholders. Preventing firm from overdiversification blockholders are preventing it from firm value decrease. The higher is firm value, the less there are chances for firm going bankrupt. And for stakeholders is very important that firms they are working with do not go bankrupt. If firm does not go bankrupt, stakeholders benefit from it by earning money from the relationship. But if firm collapses, stakeholders lose their rents and plus they have to spend time and money looking for new prospects. Thus, firms with blockholders should be more desirable for other stakeholders.

6. Conclusion

This paper analyzes diversification in public firms with blockholders. Blockholder is defined as a person or entity that owns directly or indirectly (through a trust or a company) a large proportion of ownership shares of the company (at least 5%). It is believed in existing literature that blockholders should have an influence on firm's strategies, one of which is considered to be diversification. To measure the level of firm diversification, the number of business and geographical segments as well as Herfindahl index by business and geographical segments were compared between US largest public firms with blockholders over a six-year period. On the basis of agency theory I argue that the presence of blockholders decreases the likelihood of mangers to diversify the firm. This paper contributes to already existing literature on blockholders and their influence on strategical managerial decisions. It differs from the majority of all other studies in the way that it goes more deeply in the subject by distinguishing different groups of blockholders, different types of diversification and using two measures to calculate the level of firm diversification.

This paper has two main findings. First of all, it is being observed that inside and outside blockholders have different influence on the level of firm diversification. Outside blockholder ownership is found to reduce the likelihood of diversification, whereas inside ownership did not. I suggest that no found impact of insiders on the level of firm diversification is because inside blockholder ownership is overestimated as a governance tool in existing literature. Derived results show that different groups of blockholders have different incentives within public firms, which have to be kept in mind for further research on the topic of blockholders. The other main finding of this paper is that blockholders have different influence on business and geographical diversification. It indicates that relationship between different types of diversification may be different, or it may be just a question of US sample. That is why this issue needs further investigation.

To conclude, I will restate research question: "What is the relationship between blockholders and the likelihood of firm diversification?" If blockholders are regarded as one big group, one can observe that their presence decreases the likelihood of business diversification. However, distinguishing blockholders between insiders and outsiders gives a difference. Insiders are found to have no impact on business diversification, whereas outsiders are decreasing level of diversification. There were no relationship found at all between geographical diversification and blockholders. However, one should be careful generalizing these results, because analysis includes only US public firms.

7. Limitations and further research

Though the collected data set is of high quality, it is a subject to several limitations, which may influence the reliability of the presented results. First of all, industry dummies are only on two-digit level. To make more sophisticated research, they can be extended to four-digit SIC codes in order to estimate whether there are differences between related and unrelated types of diversification. Secondly, there are no explicit reasons found why the presence of blockholders has no impact on geographical diversification. The data is constrained to US sample and it does not distinguish between the states as different geographical regions for diversification. And finally, there was no relationship found between diversification and accounting performance, so as to investigate if there is really no relationship between them data set can be extended with other measures of accounting performance such as ROE and ROI.

It is obvious that the relationship between blockholders and diversification needs further investigation. For instance, it is still not clear why inside blockholders have no effect on the level of firm diversification. Does the different effect of inside and outside blockholder ownership is constrained to the studied firms or is inside ownership simply not a precursor of firm diversification? Do motives for geographical diversification differ from motives for business diversification or is it a problem of sample? All in all, taking all these consideration into account by extending data set further research can bring the estimation of relationship between blockholders and diversification to much higher level.

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