The Influence of the Degree of Bank Ownership on the Dividend Pay-Outs of German Firms

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ABSTRACT

Germany shows a remarkably concentrated ownership structure of firms, which appears to be highly shaped by strong ties between organizations and banks. As a result, banks play an important role in making business decisions. One of these decisions is the amount of money a firm issues as a dividend. In the regard of agency conflicts, the literature shows that dividends are often used to minimize agency costs. Banks as large shareholders are said to reduce those agency costs, which arise by managers who e.g. refuse to invest in positive NPVs in order to be able to issue large dividends to maximize share prices etc. It is examined that bank-controlled firms do not appear to prioritize high or stable dividends. Consequently, this paper aims to provide insides on the relationship between bank ownership and dividend pay-outs and therefore, whether banks intend to mitigate agency costs by favoring low dividend pay-outs. To investigate this matter, mixed linear models are conducted with a sample of German firms, which were listed on any German stock exchange in the years of 2006 to 2013. Evidence is found for the influence of bank ownership on the dividend pay-out of firms. It appears that the higher the percentage of shares owned by financial shareholders, the higher the dividend pay-out of the respective firm will be.

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Keywords

Dividend pay-outs, Corporate Governance, Bank Ownership, Financial Shareholder, Germany, Agency Cost, Mixed Linear Model, German Stock Exchange

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1. INTRODUCTION

In todays´ world, companies have several options to gain equity. The most common ones are probably to issue bonds or shares. When doing the latter, a company converts to a corporation and issues a predetermined amount of shares, which investors buy and thus become an owner of the company. Of course, this ownership is limited to the percentage of shares the investor holds. By distributing shares the corporation gains additional equity, which allows to again invest in new or existing products. Although shareholders provide new cash available for the corporation, the owner of the company, who mostly retains at least 50% of shares to stay in a superior position, now faces the interests of numerous investors which are seeking for a maximization of the initial investment. So the corporation receives money from shareholders but nonetheless in return the corporation obligates itself to provide a maximization of the overall shareholder value by increasing the market value of the firm and often by issuing dividends. Dividends are payments that are made per share. When and how much dividend the firm is going to distribute to shareholders is defined in their dividend policy. So when it comes to corporations, the time and amount of dividend pay-outs are one of many extremely important business decisions to undertake, since they not only provide a way to reward the companies´ shareholders, but also to signal that the company is doing well. However, there can be several reasons why companies refuse to pay dividends like for example the opportunity to invest in projects, which would maximize the overall value of the firm. Ultimately, this also provides a value extension for the shareholders, since a good doing business causes stock prices to increase. So from an investors´ perspective it is unquestionably essential to assess a firms financial position to be able to minimize the risk while investing in corporations, but they should not only focus on regularly paid dividends, but at best should be aware of the determinants of dividend pay-outs in their respective area of business and country, since these determinants can differ not only in various industries but also from country to country. According to Klaus Gugler (2003) one of these determinants can be the ownership structure of corporations, what refers to the degree of concentration of shareholders. When it comes to the ownership structure of firms, agency problems almost always occur and raise costs for the particular company and thus for their shareholders. Agency costs arise due to dispersed ownership what causes contrary prospects of the shareholders and the managers of a firm. Managers often exploit the position they occupy to either please their personal interests or to focus on the short-run businesses within the company instead of on the long-run business, which may be more profitable for the company but not for the manager in action (Easterbrook, 1984). In regard to agency problems, researchers have contrary views concerning the role of dividends in handling agency costs. On the one hand, it is argued that dividends are often used to minimize agency costs, since paying out dividends minimizes the cash available to managers (Jensen, 1986). On the other hand, it is claimed that a management often uses dividends and their positive effects to their own advantage, for example to increase stock prices (Lie, 2000). Considering that some researchers argue that large shareholders have the ability to monitor the management, the agency conflict between managers and shareholders may be reduced (Gugler & Yurtoglu, 2003). This would also imply that large shareholders have the incentive to mitigate the inappropriate use of dividends by managers.

This research paper intents to examine the influence of large shareholders in regard to the dividend pay-outs of firms. Since this study focuses on German firms, it is essential to know that the corporate government system of Germany is special as it is highly shaped by the strong ties between firms and banks (Goergen, Renneboog & Correia da Silva, 2005). Most of the German firms hold interactive relationships with banks and banks therefore often hold large amounts of shares of the particular company (Goergen et al., 2005). In view of these facts this research does not focus on any large shareholders that may contributes to the dividend pay-out decision, but on the effect of bank ownership on the amount of money that is issued as dividend.

At the moment there is less to none or relatively old research concerning the influence of banks on the dividend pay-outs regarding German firms. Goergen, Renneboog and Correia da Silva (2005) did not research the influence of banks in a broad sense; they just saw it as one variable out of many to explain the flexibility of German dividend policy. Franks and Mayer (2001) indeed took a look at the number of banks owning and controlling firms, but did not relate it to dividend pay-out. Boehmer (1998) focused on the effects bank controlled firms have on the performance of acquiring firms. Later on, Boehmer (1999) deepened his research regarding the corporate governance structure in Germany, where he also found a strong bank-company relationship. Nevertheless, he also did not connect it to the dividend pay-out of this firms (Boehmer, 1999). However, the findings of this article are largely based upon the relationship between ownership and control structures to the dividend pay-out policy Klaus Gugler (2003) examined in his research.

As a consequence, the following research question derives:

Is there an observable difference in dividend pay-outs of German firms, which can be related to their degree of bank ownership?

Sub-Question: Which factors may also influence the pay-out?

To be able to investigate the research question mentioned above, all German firms listed on any stock exchange in Germany are used as a sample and it is focused on the years 2006 to 2013. Mixed linear models will be conducted since they allow to check for a causal and linear relationship between the degree of bank ownership and dividend pay-outs. It is notable that bank ownership includes all financial shareholders rather than just banks. There are going to be two mixed linear model analyses where the variable bank ownership is coded differently. Moreover control variables, that may also influence the dividend pay-out of firms, will be included in the model in order to minimize the risk that the findings are irritated by other factors.

In this study evidence is found for the influence of bank ownership on the dividend pay-out of firms. It appears that the higher the percentage of shares owned by financial shareholders, the higher the dividend pay-out of the respective firm will be. These results are in contrast to the findings of Gugler, where he examined that bank-controlled firms do not prioritize high or stable dividends because of bankruptcy risks and the fact that banks have other incentives to minimize agency costs (Gugler, 2003). It appears that financial shareholders utilize their roles as (large) shareholders by ensuring that excess cash reserves are paid out as dividends. Hence all shareholders profit and managers have less monetary resources at disposal. There can be several reasons why financial shareholders exert this way of influence on the dividend pay-out of firms. However, this research is not able to answer these questions, but thus provides possibilities for further

research in this matter. Nonetheless, this study indicates a significant and positive relationship between bank ownership and the dividend pay-out of firms. As a result, the outcomes of this paper contribute to the literature of bank influence on firms and gives insides of the effect of this influence. In addition, investors are able to assess the dividend pay-outs of stocks based on the findings of this research. If a higher dividend pay-out is preferred, investors should buy shares from firms which are largely owned by banks.

The rest of this paper is organized as follows: Section 2 addresses the corporate governance system in Germany and the relevance of banks going with it. The section furthermore includes a literature review about the agency conflict and the relevance of dividend policy. Section 3 contains the description of the method used in this study and the detailed description of the variables included in the mixed linear model and of the sample selection. In section 4 the descriptive statistics of the variables and the results of the two mixed linear models conducted, are presented. Following this section 4 comprises the discussion of these results and finally section 5 concludes the paper.

2. CONCEPTUAL FRAMEWORK

2.1 Corporate governance in Germany and the relevance of banks

Germany's corporate governance system contrasts largely from most of the others in the world, since it marks itself with a concentrated ownership structure. This implies that most of the German firms have large shareholders, which are also called blockholders (Goergen, Manjon & Renneboog, 2008). Blockholders insist a certain degree of control and this control entails a power over the companies´ key decision-making processes (Gugler & Yurtoglu, 2002; Goergen et al., 2008). Furthermore, large shareholders are seen to be responsible to monitor the management (Goergen et al., 2005). So the concentration of ownership leads to a concentration of control.

In Germany these blocks of shares are characteristically owned by families, the state or financial firms (Gugler & Yurtoglu, 2003). Since this research is focusing on the influence of banks on dividend pay-outs, it is important to note that, when it comes to the relevance of financial firms in making business decisions, Germany is a special case. The reasons are the strong ties between organizations and banks causing that the German corporate governance system is not only highly shaped by bank influence but banks play also an important role in making business decisions (Goergen et al., 2005). Therefore the German corporate governance system is repeatedly referred to a bank-based system. German firms often develop interactive relationships with one bank, which then mostly provides needed loans and guides the management in financial issues. As a result, banks often also own shares or even blockholdings of the particular firm (Goergen et al., 2005). Consequently, banks have a significant and important influence through their positions at supervisory boards and furthermore, at annual meetings of shareholders and thus on the amount of dividends issued (Goergen et al., 2005). Another reason for the massive power of banks in Germany can be explained by the high protection of creditors (La Porta, Lopez-de-Silanes, Shleifer & Vishny, 1999).

In addition to these facts, this article is also largely based upon Klaus Guglers findings in his article about Corporate Governance and Dividend Payout Policy since he examined inter alia the impact of the ownership and control structure of a firm on the dividend pay-out policy in Austria[1]. Gugler showed that the ownership and control structure is a significant determinant of the pay-out decision of Austrian firms. He gave evidence that companies, which differ in respect to the type of their largest shareholder, showed significantly different dividend pay-out policies (Gugler, 2003). As Gugler assumed, bank-controlled firms do not prioritized the smoothing of dividends since they do not favor high or stable dividends because of bankruptcy risks and the fact that banks have other incentives to minimize agency costs (Gugler, 2003).

2.2 The agency conflict

The Agency Cost Theory deals with costs that arise due to problems between managers and shareholders, shareholders and debtholders or majority and minority shareholders. Mostly, it aims to evaluate problems that originate when the ownership and control of a firm is separated, so that agents, which are managers responsible for leading a firm, do not receive the full financial benefits of their actions since the organization is owned by principals, e.g. the shareholders (Jensen, 1986). Agents have therefore often the incentive to behave in their own interest rather than to maximize the value of the overall firm and hence, the wealth of the shareholders by investing in private goods or expensive comforts during business trips etc. Managers mostly emphasize their short-term interest, because they do not occupy their management role forever and thus have incentives to profit from their position during the period of holding it (Jensen, 1986). Even if shareholders elect board members to monitor the management in order to minimize the probability of such incentives, this still cause costs for the firm.

Some researchers argue that, since large shareholder have numerous inducements and the ability to monitor the management, the agency conflict between managers and shareholders may not be as predominant as for example in Anglo-Saxon countries and as a result blockholders often add value to the firm (Gugler & Yurtoglu, 2003), but others question and criticize this view (Cohen & Yagil, 2006). Agency costs arise due to dispersed ownership, what causes contrary prospects of principals and agents of the firm, which are in this case the shareholders and the managers. The fact that German firms show such strong ties with banks and that a monitoring effect arises through these, provides the "merit of the German (governance) system" (Goergen et al., 2005), because agency costs are said to be reduced through bank ownership and control.

2.3 The relevance of dividend policy

When it comes to dividend policy, in which companies define the way when and how much dividends are distributed to the shareholders, some researches state that dividends are often used to minimize agency costs. This assumption is substantiated by the fact that by paying out dividends, the cash available to managers to reinvest it in low- return or negative NPV investments[2] or even simply to waste it, is minimized (Jensen, 1986). It is obvious that managers naturally have more detailed and complete information about a firms future prospects than outside investors, what leads to asymmetric information (Cohen & Yagil, 2006). Managements

[1] Given that the ownership structure of Austrian and German firms are extremely similar, his findings are also applicable for the research purposes of this article (Boehmer, 1988).

[2] NPV refers to the net present value of investments.

often try to overcome these problems with signaling information to outsiders through for example special dividend announcements to show their confidence in regard to the future profitability of the firm (Gugler et al., 2002). Nevertheless, managements often use dividends and their positive effects to their own advantage rather than to maximize the overall shareholder value. Managers may issue special dividends simply to increase share prices and furthermore, attract new investors rather than to mitigate the problem of agency cost, as stated in Lie´s (2000) Access Cash Flow Theory. It is argued that managers sometimes reject to invest in positive NPV-projects to be able to pay out larger dividends or to continue paying regular dividends (Cohen & Yagil, 2006).

In contrast to Germany, Anglo-Saxon countries' dividend policy is seen as highly inflexible (Goergen et al., 2005) and the ownership structure is rather dispersed than concentrated, so that it is potentially hard for smaller shareholders to monitor the management of a firm and as a result to decrease agency problems (Gugler & Yurtoglu, 2003).

In addition to these facts, it is also notable that the German Stock Corporation Act contains a paragraph which aims to regulate the profit distribution of stock listed firms. The paragraph states that a certain amount of the annual net profit needs to be build up as a legal reserve, whereas the amount of money should not be more than 50% of the profit listed in the balance sheet. The management and supervisory board[3] therefore can decide to retain up to 50% of the annual profit within the company without consulting the shareholders (Andres, Betzer, Goergen & Renneboog, 2009). However, as long as the management board obtains the approval of the board members and the largest shareholders, they can decide to keep up more than 50% of the annual profit within the firm (Andres et al., 2009).

2.4 Hypotheses:

In view of these facts, the following hypotheses are developed:

1. Firms with a high percentage of bank ownership show low dividend pay-outs, since banks mitigate agency costs by naturally occupying a monitoring role of the overall business.
2. When firms show a bank ownership percentage of at least 25%, the relationship between bank ownership and the dividend pay-outs is even stronger.

3. METHODOLOGY

3.1 Description of the analysis & method

The research question investigated in this paper is: *Is there an observable difference in dividend pay-outs of German firms, which can be related to their degree of bank ownership?* Consequently, the sample for the study purposes of this paper consists of German firms, more precisely of all German firms listed on any German stock exchange[4]. As a result, the sample naturally entails firms of several industries. This study focuses on data of firms throughout the years from 2006 to 2013 and thus this research is a time series, cross sectional one. The data is to determine the variables relevant to this paper such as bank ownership and the dividend pay-out of firms and some control variables. Bank ownership is assumed to be the independent variable and dividend pay-out to be the dependent variable. They are assumed to be interlinked by a negative relationship. These variables are on the on hand specified by collecting data about the shareholders of each firm and on the other hand by computing the dividend pay-out ratios. Besides, control variables are included in the analysis that may also influence the dividend pay-out of firms. These are about the maturity and profitability of a firm, the degree of leverage and whether there are other types of blockholders. After the collected data of the listed firms is handled, the values of the variables are determined and the dummy variables are developed for other types of large shareholders, a mixed linear model can be performed. The mixed linear model allows to check for a causal and linear relationship between bank ownership and dividend pay-outs without the necessity of averaging the variable values. Besides, this model is chosen due to fact that it considers values of several years in one model, as it includes repeated measures. This is a great advantage towards a Regression or ANOVA analysis, since these only consider single measurement points. Additionally, the mixed linear model is also able to handle the threat of multicollinearity as long as the collinearity coefficient of the variables is below 0.9 (McCulloch & Searle, 2001). Since the model is able to include fixed and random effects, it is notable that all variables, used for the investigation of the research question, are defined as fixed effects due to the fact that these are hypothesized. There are no random effects included in this study. Two mixed linear model analyses are conducted where the variable bank ownership is coded differently. The first model includes bank ownership coded as percentage, the second model includes bank ownership coded as a discrete variable, indicating that bank ownership amounts to at least 25% of shares outstanding. An alpha of $\alpha = 0.050$ is handled to evaluate the significance of the results.

The mixed linear model for the purposes of this paper looks as follows:

$$\textit{Dividend pay-outs}_t = \alpha_0 - \beta_1 \textit{ bank ownership}_{t-1} - \beta_2 \textit{ maturity of a firm}_{t-1} + \beta_3 \textit{ profitability of a firm}_{t-1} - \beta_4 \textit{ leverage}_{t-1} + \beta_5 \textit{ other blockholders}_{t-1} + \varepsilon$$

To enable the analysis to explain a causal relationship all independent variables are lagged to the dependent variable dividend pay-outs. T can therefore be referred to the years of 2007 to 2013 and t-1 to the years of 2006 to 2012.

3.2 Variables

The main variables of this paper are the degree of bank ownership and dividend pay-outs. Although, speaking of bank ownership, the variable is a summary of all shareholders belonging to the financial sector, which includes banks, various funds, insurances and other financial companies. Given the first hypothesis, bank ownership is defined as a continuous variable in the way of executing the mixed linear model. The variable is indicated by collecting data about the percentage of shares that are hold by each shareholder of a firm. Afterwards, the percentage of shares hold by each financial institution of a particular firm is summarized to determine the overall amount of shares that is owned by financials shareholders. When executing the mixed linear model the second time, bank ownership is recoded to a discrete variable. Therefore a dummy variable is created which is

[3] Germany has a two-tier board system, which implies that a companies´ corporate governance system is composed of a management and a supervisory board. The supervisory board consists of representatives of the employees and the shareholders (Goergen et al., 2008).

[4] There are seven important stock exchanges in Germany: Börse Berlin, Börse Düsseldorf, Börse Frankfurt, Börse Hamburg, Börse Hannover, Börse München and Börse Stuttgart.

about whether or not a firm has a bank ownership of 25% or more, since it is said that business decisions of firms are increasingly dependent upon shareholders, when these hold at least 25% of shares outstanding (Goergen et al., 2008). The variables are named bank ownership and bank ownership 25% in the following. Both variables are be lagged to the dependent variable, so that the data about the shareholders of the German listed firms is derived from the years of 2006 to 2012.

The second key variable, dividend pay-outs, is similar to bank ownership also from continuous nature and is measured by computing the dividend pay-out ratio, where dividends are divided by net income for the same period. This variable is computed by taking data from the years 2007 to 2013.

Moreover, this paper additionally comprises the maturity, the profitability and the degree of leverage of a firm and whether there are other types of blockholders as control variables, thus the risks that findings are irritated by other factors is minimized. The following rates and ratios are computed for the control variables: the sales growth rate by comparing the net sales of the current and the last period, the ratio of return on assets by dividing the net income by total assets, and the leverage ratio by dividing total debt by total assets. Furthermore, information about other blockholder types is gathered and five more dummy variables are created. These five dummy variables are different types of shareholders and similar to the dummy variable bank ownership, they indicate whether or not these shareholders hold at least 25% of shares outstanding. If this is the case, the dummy variable scores 1 and if the particular shareholder type does not show an ownership of at least 25%, the dummy variables scores 0. The different types of shareholders are: Company related ownership, where employees, directors, managers and self-ownership is included; other companies; foundation and research institutes; private, individual and families as shareholders; and governmental ownership. Equally to the bank ownership variable, the control variables is lagged to the dividend pay-outs, so that the needed data of the firms is from 2006 to 2012.

3.3 Sample selection & data description

A time-series, cross-sectional research is conducted with all German firms listed on any German stock exchange in the years from 2006 to 2013. All firms that are listed at a German stock exchange need to meet the General Standard[5]. This sample is an adequate representative of the German market due to the fact that the firms listed differ not only in size and market capitalization but also in the type of their industries. For that reason, this paper should be able to conclude with a prediction that is applicable to all German firms.

Nevertheless, there are not only German firms listed at German stock exchanges, so that all foreign firms are separated from the sample. In addition, banks and insurance companies are left out since they are matters of regulation and thus not independent in deciding on their dividend policy. Moreover, it is notable that some firms have missing data concerning the dividend pay-out or any other needed information in some years, so that these are excluded in the respective year in the model of this paper.. Nevertheless, if a firm shows a missing value for the dividend pay-out, this missing value is replaced with 0, when there is 0 net income in the particular year for the respective firm. Besides, when a firm has a missing value for one year but available information for other years, it is only dismissed for the one year, where the information is missing. In addition, it is notable that extremely outlying values of a variable are also excluded from the analysis in order to ensure that the outcomes are not distorted by any seldom occurrences. These values are ascertain by using a frequency table. The dividend pay-out ratios are restricted to values from -.45 and .74, which is similar to the sales growth ratios, where outliers above -.47 and under .61 are excluded from the sample. Furthermore, the return on assets ratios are restricted to values ranging from -.16 to .20. Subsequently, an overall sample size of 1984 firms of all years is left. The information that is required for the ratios, the percentage of bank ownership and the dummy variables[6] is gathered from the database ORBIS. This study focuses on the years from 2006 to 2013.

4. RESULTS & DISCUSSION

4.1 Descriptive statistics

The means, standard deviations and medians of the continuous variables can be seen in table 1. The mean of the dividend pay-out ratios of German listed firms throughout the years from 2007 to 2013 is 16% (SD = 21%). Similarly, the mean of bank ownership percentage is at 20% (SD = 23%).

Table 1. Descriptive statistics of the continuous variables

	t = 2007-2013; (N = 1984)				
	Mean	SD	Median	Min	Max
Dividend Pay-Out Ratio $_t$	0.157	0.214	0.000	-0.44	0.74
Bank Ownership $_{t-1}$	20.374	23.166	11.385	0	87.79
Sales Growth Rate $_{t-1}$	0.063	0.184	0.059	-0.47	0.60
Return on Assets Ratio $_{t-1}$	0.031	0.060	0.033	-0.16	0.20
Leverage Ratio $_{t-1}$	0.553	0.196	0.578	0	1.19

The ratios of the control variable sales growth have a mean of 6% (SD = 18%), which is comparable to the mean of 3% (SD = 6%) for profitability[7]. The leverage ratios show a mean of 55% (SD = 20%). All these means and standard deviations are calculated from data over the years of 2006 until 2012.

The frequencies and corresponding percentages of the dummy variables can be seen in table 2. Bank ownership 25% shows that 653 firms (33.1% of the sample) have financial shareholders that own at least 25% of the outstanding shares. Furthermore, the sample included 4 (0.2% of the sample) firms, which have company related shareholders owning at least a quarter of the

[5] Firms are directly included in the General Standard when their stocks are released to the stock exchange. To make this happen firms need to assure that they provide ad-hoc-notifications, that their financial reporting is conform to the International Financial Reporting Standards and that they publish interim reports (Börse Frankfurt, 2015).

[6] The needed data of the firms encompasses their dividend pay-outs, net income, total debt, total assets, net sales, the percentage of shares hold by banks and other blockholders of the years 2006 to 2013.

[7] The profitability is computed through the return on assets ratios.

Table 2. Frequencies of the dummy variables

	t = 2007-2013; (N = 1984)	
	Frequency	Percentage (%)
Bank Ownership 25% $_{t-1}$	653	33.1
Company Related Ownership $_{t-1}$	4	0.2
Other Companies as Blockholders $_{t-1}$	1056	53.5
Foundations & Research Institutes as Blockholders $_{t-1}$	29	1.5
Individuals & Families as Blockholders $_{t-1}$	487	24.7
Governmental Ownership $_{t-1}$	32	1.6

respective firm. In contrast, 1056 firms (53% of the sample) have other companies as shareholders holding more than 25% of outstanding shares. Foundations or research institutes are blockholders in 29 firms, which amounts to 2% of the sample size. 487 firms are at least to a quarter held by individuals or families (25% of the sample). Governmental blockholders are found in 32 firms (2% of the sample). The frequencies described here are also derived from data of the years 2006 until 2012.

Table 3. Correlations of the continuous variables[8]

	t = 2007-2013				
	DPR	BOP	SGR	ROAR	LR
DPR $_t$		0.126**	.038	.263**	.001
BOP $_{t-1}$	0.126**		.029	.039	.067*
SGR $_{t-1}$	.038	.029		0.255**	.000
ROAR$_{t-1}$	.263**	.039	0.255**		-0.250**
LR $_{t-1}$	.001	.067*	.000	-0.250**	

* $p < 0.050$, ** $p < 0.001$; N = 1984

In order to get an overview of the relationships between each independent variable, a correlation analysis was conducted for all years concerned, which outcomes can be seen in table 3. The correlation matrix shows that the percentages of the dividend pay-out ratios appear to be significantly correlated on the one hand to bank ownership ($r = 0.000$; $p < 0.050$) and on the other hand to the ratios of return on assets ($r = 0.000$; $p < 0.050$), but not to the sales growth rates ($r = 0.089$) or the leverage ratios ($r = 0.966$). Furthermore, bank ownership shows also a significant correlation with the leverage ratios ($r = 0.003$; $p < 0.050$), but they appear to be not significantly correlated to the return on assets ratios ($r = 0.087$) or the sales growth rates ($r = 0.198$). The sales growth rates additionally have a significant correlation to the ratios of return on assets ($r = 0.000$; $p < 0.050$), but also no significant correlation to the leverage ratios ($r = 0.998$). Finally, the ratios of return on assets show a significant correlation to the leverage ratios ($r = 0.000$). Nevertheless, these correlations should not distort the results of the mixed linear model analysis of this paper since all correlation coefficients are below 0.9.

4.2 Results

Table 4. Output of the 1. Mixed Linear Model Conducted

	t = 2007-2013	
Source	Estimate	SE
Intercept	0.325*	0.143
Bank ownership $_{t-1}$	0.001**	0.000
Company Related $_{t-1}$[9]	-0.155	0.128
Other Companies $_{t-1}$[8]	0.001	0.010
Foundations & Research Institutes $_{t-1}$[8]	0.022	0.043
Individuals & Families $_{t-1}$[8]	-0.027*	0.012
Government $_{t-1}$[8]	-0.090*	0.039
Sales Growth Rates $_{t-1}$	-0.054	0.030
Return on Assets Ratios $_{t-1}$	1.195**	0.098
Leverage Rates $_{t-1}$	0.059*	0.027

* $p < 0.050$, ** $p < 0.001$; N = 1984

-2 Restricted Log Likelihood = 160.766

H1: A mixed linear model was used to test whether a high percentage of bank ownership of firms causes low dividend pay-outs. The percentage of bank ownership is the independent and the dividend pay-out ratio is the dependent variable in this model. Moreover, there are several control variables included in the analysis. The results of the test can be seen in table 4. The mixed linear model, which utilizes lagged repeated measures, was conducted for the years throughout 2006 to 2013. Derived from the model, the variable bank ownership has a significant effect ($F_{(1;\ 1944.888)} = 23.968$; $p < 0.050$) on the dividend pay-outs of firms as theorized. Its estimate is 0.001 ($SE_{est} = 0.000$; $t = 4.896$), which denotes a positive, linear relationship between bank ownership and dividend pay-outs. This indicates that, the higher the amount of shares hold by financial shareholders, the higher the dividend pay-out of a firm will be. Besides, the control variables of the profitability ($F_{(1;\ 1911.917)} = 147.919$; $p < 0.050$) and the degree of leverage ($F_{(1;\ 1952.057)} = 4.591$; $p < 0.050$) show a significant effect on the dividend pay-out. Profitability has an estimate of 1.195 ($SE_{est} = 0.098$; $t = 12.162$) and leverage of 0.059 ($SE_{est} = 0.027$; $t = 2.143$). Since both variables show positive estimates, they are also positively linked with the dividend pay-out ratios. The individual and family ($F_{(1;\ 1952.381)} = 5.171$; $p < 0.050$) and the governmental ownership ($F_{(1;\ 1910.144)} = 5.217$; $p < 0.050$) also show a significant effect on the dividend pay-outs, whose relationships are positive, since the estimates for the absence of both dummy variables are negative (absence of individual / family ownership: Est. = -0.027; $SE_{est} = 0.012$; $t = -2.274$; absence of governmental ownership: Est. = -0.090; $SE_{est} = 0.039$; $t = -2.284$). A negative estimate for the absence of a dummy variable implies a positive estimate for the presence of the particular variable and thus also a positive relationship. The ownership of company related shareholders ($F_{(1;\ 775.964)} = 1.462$; $p = 0.227$), of other companies ($F_{(1;\ 1952.245)} = 0.021$; $p = 0.886$) and foundation and research institutes ($F_{(1;\ 1847.829)} = 0.263$; $p = 0.608$) show no

[8] Index of table 3: P. C. = Pearsons Correlation; DPR = dividend pay-out ratios; BOP = bank ownership percentages; SGR = sales growth rates; ROAR = return on assets ratios; LR = leverage ratios

[9] The depicted estimates and standard errors describe the absence of the respective dummy variable.

significant effect on the dividends of the listed firms. The absence of company related ownership shows an estimate of -0.155 (SE_{est} = 0.128; t = -1.209), the absence of other companies´ ownership an estimate of 0.001 (SE_{est} = 0.010; t = 0.144) and the absence of foundations and research institutes as shareholders an estimate of 0.022 (SE_{est} = 0.043; t = 0.513). However, the maturity of a firm ($F_{(1;\ 1836.623)}$ = 3.195; p = 0.074) is nearly significantly related to the dependent variable. It shows an estimate of -0.054 (SE_{est} = 0.030; t = -1.787).

Table 5. Output of the 2. Mixed Linear Model Conducted

	t = 2007-2013	
Source	Estimate	SE
Intercept	0.316*	0.144
Bank ownership 25% $_{t-1}$[8]	-0.040**	0.011
Company Related $_{t-1}$[8]	-0.145	0.128
Other Companies $_{t-1}$[8]	0.002	0.010
Foundations & Research Institutes $_{t-1}$[8]	0.021*	0.043
Individuals & Families $_{t-1}$[8]	-0.025	0.012
Government $_{t-1}$[8]	-0.087*	0.039
Sales Growth Rates $_{t-1}$	-0.055	0.031
Return on Assets Ratios $_{t-1}$	1.207**	0.098
Leverage Rates $_{t-1}$	0.062*	0.028

* p < 0.050, ** p < 0.001 ; N = 1984
-2 Restricted Log Likelihood = -157.905

H2: Dividend pay-outs are even more affected by the fact that the bank ownership amounts to at least 25% of shares outstanding. In order to test this hypothesis the mixed linear model was conducted a second time, but now the continuous variable of bank ownership percentage was swapped with a dummy variable of bank ownership, which investigates the occurrence of financial shareholders that hold 25% or more of all outstanding shares. The outcomes of this test are similar to those of the previous one as it can be seen in table 5. The dummy variable of bank ownership 25% has a significant effect on dividend pay-outs ($F_{(1;\ 1955.156)}$ = 13.181; p < 0.050). The direction of the interaction again is positive, since the estimate of the nonappearance of bank ownership is -0.040 (SE_{est} = 0.011; t = -3.630). Leverage ($F_{(1;\ 1951.826)}$ = 5.003; p < 0.050), profitability ($F_{(1;1910.821)}$ = 150.428; p < 0.050), family / individual ownership ($F_{(1;1951.536)}$ = 4.420; p < 0.050) and governmental ($F_{(1;1912.102)}$ = 4.917; p < 0.050) all show significant and positive relationships (Leverage: Est. = 0.062; SE_{est} = 0.028; t = 2.237; profitability: Est. = 1.207; SE_{est} = 0.098; t = 12.265; the absence of individuals and families as shareholders: Est. = -0.025; SE_{est} = 0.012; t = -2.102; the absence of governmental ownership: Est. = -0.087; SE_{est} = 0.039; t = -2.217) with the dividend pay-outs of firms. Likewise the previous test, the ownership of company related individuals ($F_{(1;\ 775.244)}$ = 1.277; p = 0.259), other companies ($F_{(1;\ 1951.315)}$ = 0.373; p = 0.045) and foundation and research institutes ($F_{(1;\ 1844.146)}$ = 0.232; p = 0.630) have no significant effect on the dividend pay-outs. The absence of company related shareholders show an estimate of -0.145 (SE_{est} = 0.128; t = -1.130), the lack of other companies in the ownership structure has an estimate of 0.002 (SE_{est} = 0.010; t = 0.213) and the lack of foundations or research institutes as listed shareholders has an estimate of 0.021 (SE_{est} = 0.043; t = 0.482). Also similar to the previous findings the maturity of firms ($F_{(1;\ 1834.603)}$ = 3.221; p = 0.073) has a nearly significant effect on the dependent variable, whereas the variable again has a negative estimate of -0.055 (SE_{est} = 0.031; t = -1.795).

4.3 Discussion

In the following, the academic relevance of the results reported previously, is analyzed. The article by Alhorr, Moore and Payne (2008) is used as a foundation for the interpretative approaches regarding the mixed linear model.

4.3.1 Discussion of the first mixed linear model

In the first mixed linear model conducted with the bank ownership variable coded as percentages, bank ownership has a significant effect on the dividend pay-outs of firms. The variables are positively related with each other, which can be derived from the positive estimate of bank ownership. This indicates that the higher the percentage of shares owned by financial shareholders, the higher the dividend pay-out of the respective firm will be.

Similar to other studies it is found, that governmental ownership, the profitability and the degree of leverage of a firm are factors that also influence the pay-out decision of firms. In contrast though is the insignificant effect of the maturity of a firm to its dividend pay-out.

The findings of the mixed linear model are in line with the assertion that banks have significant and important influence on business decisions of firms like the amount of dividend issued (Goergen et al., 2005). Furthermore, the outcomes of the model and the correlation found between bank ownership and the degree of leverage of a firm, harmonize with the research of Goergen et al. (2005) where they inter alia examined that German firms often develop interactive relationships with one bank, which then mostly provides needed loans and guides the management in financial issues. In contrast, the findings of Gugler, where he examined that bank-controlled firms do not prioritize the smoothing of dividends since they do not favor high or stable dividends because of bankruptcy risks and the fact that banks have other incentives to minimize agency costs (Gugler, 2003), cannot be confirmed with the sample at hand.

Furthermore, the first hypothesis of this research, which stated that firms with a high percentage of bank ownership show low dividend pay-outs, can be rejected by the outcomes of the mixed linear model. It appears that financial shareholders utilize their roles as (large) shareholders by ensuring that excess cash reserves are paid out as dividends. Hence all shareholders profit and managers have less monetary resources at disposal. There can be several reasons why financial shareholders exert this way of influence on the dividend pay-out of firms. On the one hand, they could have the motivation to minimize agency cost by forcing the management to pay-out dividends. As a result, they would decrease the monetary resources available for managers to reinvest in low-return or negative NPV investments or even simply to waste it (Jensen, 1986). Consequently, financial shareholders would rather maximize the shareholder value. Besides, they could perceive dividend pay-outs as means of overcoming problems of asymmetric information. In this regard the higher dividend announcements signal outside shareholders, who have not got detailed and complete information about the future prospects of a firm, that the firms leader are confident about its future profitability (Gugler et al., 2002). These settings would align with the statement that agency costs are said to be reduced through bank ownership and control (Goergen et al., 2005).

On the other hand, financial shareholders could pursue their own interests. Since they are blockholders and are going to profit in a huge way from larger dividend pay-outs, they could utilize their position to transpire them. This would be another type of agency conflicts, where large shareholders exploit their power on the decision-making within the company to get the maximum of output possible, regardless to the welfare of the firm (Jensen, 1986). Moreover, financial shareholders may support the management in issuing dividends and using their positive effects to increase share prices (Lie, 2000). These settings would all arise agency costs for the respective company instead of mitigating them. However, this research is not able to answer these questions, but thus provides possibilities for further research in this matter.

4.3.2 Discussion of the second mixed linear model

The second mixed linear model conducted with the recoded bank ownership 25% variable, reinforces that higher dividend pay-outs can be predicted by the presence of financial blockholders. Nevertheless, the second test examines that large financial shareholders, who own at least 25% of a firm, show a stronger positive relationship to the dividend pay-outs. This can be derived from the estimates for bank ownership and bank ownership 25%, as the first has an estimate of 0.001 and the latter of 0.040. Since bank ownership of 25% has a greater estimate, it indicates a stronger positive relationship between bank ownership 25% and the dividend pay-outs. As a result, financial shareholders owning at least a quarter of the shares outstanding have a greater effect on dividends than those owning a smaller amount of shares.

Bank ownership of 25% was present in 653 firms, which amounts to 33.1% of the sample size. In addition to the significant and positive relationship of bank ownership and dividend pay-outs, this frequency allows to state that the sample aligns with the assumptions of Goergen et al. (2005). These assumptions are about frequent and interactive relationships of German firms with banks, where banks guide the management in financial issues and therefore they often also own shares or even blockholdings of the firm (Goergen et al., 2005). Due to these facts, the second hypothesis, which states that firms with a bank ownership percentage of at least 25%, show an even stronger relationship between bank ownership and the dividend pay-outs, cannot be rejected.

Moreover, the findings once more support the statements of Gugler and Yurtoglu (2002) and Goergen et al. (2008) about the fact that large shareholders insist a certain degree of control, which entails a power over the companies´ key decision-making processes. Thus, the concentration of ownership leads to a concentration of control. Nevertheless, the outcomes of the second mixed linear model conducted also are in contrast to the findings of Gugler that bank-controlled firms do not favor high dividends (Gugler, 2003).

5. CONCLUSION

The existing literature on the influence of blockholders on the companies´ key decision-making processes like the dividend pay-out, show that blockholders insist a certain degree of control of and power on the management of a corporation (Gugler & Yurtoglu, 2002; Goergen et al., 2008) and thus impacts the amount of dividends issued (Gugler, 2003). In the case of Germany, a highly concentrated ownership structure prevails (Goergen et al., 2008), where blocks of shares are mostly hold by families, the state or financial firms (Gugler & Yurtoglu, 2003). The German corporate governance system appears to be highly shaped by strong ties between organizations and banks. German firms often develop interactive relationships with one bank, which then mostly provides needed loans and guides the management in financial issues. As a result, banks have significant and important influence on business decisions through their positions within the company (Goergen et al., 2005). One of these business decisions is the time and amount of dividend pay-outs. Existing literature illustrates that that the ownership and control structure is a significant determinant of the pay-out decision of firms (Gugler, 2003). Since agency conflicts are almost always a matter of costs in corporations, which arise due to the dispersion of ownership (e.g. shareholders) and control (e.g. managers) of a firm (Jensen, 1986), large shareholders are seen to be responsible to monitor the management (Goergen, Renneboog & Correia da Silva, 2005). In the regard of agency conflicts, the literature shows that dividends are often used to minimize agency costs (Jensen, 1986). In view of the literature and additionally of the fact that bank-controlled firms do not appear to prioritize high or stable dividends (Gugler, 2003), this paper investigated the following research question:

Is there an observable difference in dividend pay-outs of German firms, which can be related to their degree of bank ownership?

To examine this question, two mixed linear models were conducted with a sample of German firms, which were listed on any German stock exchange in the years of 2006 to 2013. The model was intended to check for a causal and linear relationship between the degree of bank ownership and dividend pay-out. Additionally, control variables, that may also influence the dividend pay-out of firms, were included in the model in order to minimize the risk that the findings are irritated by other factors.

In this study, evidence is found for a significant effect of bank ownership in the dividend pay-outs of firms. Since the variables show a positive relationship with each other, what indicates that the higher the percentage of shares owned by financial shareholders, the higher the dividend pay-out of the respective firm will be. Although these findings are in line with the assumption that bank ownership actual shows an effect on the amount of dividends issued, they are in contrast to the hypothesis of this paper, which stated that firms with a high percentage of bank ownership show low dividend pay-outs. As a result of the outcomes of the mixed linear model, the hypothesis can be rejected. It appears that financial shareholders utilize their roles as blockholders by ensuring that excess cash reserves are paid out as dividends. Hence all shareholders profit and managers have less monetary resources at disposal. There can be several reasons why financial shareholders exert this way of influence on the dividend pay-out of firms. However, this research is not able to answer these questions, but thus provides possibilities for further research in this matter. Prospective studies could examine on the basis of surveys for example, how financial shareholder exert their power as large shareholders on the management of a firm and why they are favoring the pay-out of dividends.

Nonetheless, this paper gives evidence for a significant and positive relationship between the degree of bank ownership and the dividend pay-out of firms and thus constitutes a contribution to the literature of bank influence on firms and its effects. In addition, investors are able to assess the dividend pay-outs of stocks based on the findings of this research. If a higher dividend pay-out is preferred, investors should buy shares from firms which are largely owned by banks.

In view of the fact that the variable bank ownership is a summary of various financial shareholders like banks, various funds, insurances and other financial companies, this research is limited in providing information on the influence of each financial shareholder on the dividend pay-out of firms. Although the findings show a significant relationship between the grouping of the financial shareholders and the amount of money issued, this research is not able to say which shareholder type is mostly contributing to this phenomena. Moreover, it is possible that there exist other factors besides to the maturity, the profitability and the degree of leverage of a firm and the presence of other types of large shareholders, which may influence the pay-out of firms, which are not taken into account in this paper.

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