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The economic forces governing family firms
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Empirical evidence from capital structure, payout policy and diversification decisions

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Summary

Family firms are the predominant organizational structure around the world. However, little is known if and why families influence the corporate policy decisions of "their" firms. This dissertations aims to shed light on the question if and why listed German family firms differ from their non-family counterparts in terms of capital structure, payout policy and diversification decisions. Therefore a dataset covering 660 listed German firms in the 1995 to 2006 period is used.

In the empirical analysis, significant differences between these two groups of firms are found. Family firms are characterized by lower leverage, higher payout propensity and less unrelated business segment diversification. Especially the family's presence in the firm's top-management has a huge impact on corporate policy.

The desire of the family to retain the control over the firm is identified as the main "force" behind corporate policy decisions in family firms. Beneath control, risk aversion plays a role in family firms with high family ownership, but low family representation in the top-management. These results are of importance both for practitioners, e.g. capital market regulators or equity investors, and academics.

Contents

Nomenclature

AktG	Aktiengesetz, Stock Corporations Act
Bafin	Bundesanstalt für Finanzdienstleistungsaufsicht
BE	Between effects
BilMoG	Bilanzrechtsmodernisierungsgesetz
BSD	Business segment diversification
CDAX	Composite DAX
CS	Capital structure
DAX	Deutscher Aktienindex
DIV	Diversification
EBITDA	Earnings before interest, taxes, depreciation and amortization
EStG	Einkommensteuergesetz
FBL	Financial book leverage
FE	Fixed effects
FML	Financial market leverage
GAAP	Generally Accepted Accounting Principles
HGB	Handelsgesetzbuch
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
IPO	Initial public offering
IV	Instrumental variable
KapAEG	Kapitalaufnahmeerleichterungsgesetz
KontraG	Gesetz zur Kontrolle und Transparenz im Unternehmensbereich

NIBL	Non-interest bearing liabilities
OLS	Ordinary least squares
PA	Payout
para.	paragraph
RE	Random effects
S&P	Standard & Poor's
SEO	Seasoned equity offering
SIC	Standard industrial classification
TE	Treatment effects
TL	Total liabilities
U.K.	United Kingdom
U.S.	United States
$V(E)_{book}$	Book value of equity
$V(E)_{market}$	Market value of equity
WpÜG	Wertpapiererwerbs- und Übernahmegesetz
WpHG	Wertpapierhandelsgesetz
ZDP	Zero distribution profits

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1 Introduction

Berle and Means (1932) postulated that the "modern" corporation is characterized by a separation of ownership and control. However, recent research in the financial economics literature has cast doubt on their view. Family firms, which are owned and often managed by the founders and their families, are regarded as the predominant organizational structure around the world today. The following statement of La Porta et al. (1999) illustrates their importance:

> "As we look outside the United States, particularly at countries with poor investor protection, even the largest firms tend to have controlling shareholders. Sometimes the shareholder is the State; but more often it is a family, usually the founder of the firm or his descendants."[1]

Beneath the finding that family firms are a widespread phenomenon, several empirical studies on family firms also revealed that they are - at least if certain conditions are fulfilled - superior performers as compared to widely held firms. Consequently, family firms have gained increasing attention, both from academics and practitioners, over the last years. Against the background of their importance and the huge amount of literature on their performance, it is surprising that empirical studies focusing on family firms and their corporate policy decisions are sparse, with few notable exceptions.

In my empirical investigation of listed German family firms, I focus on three corporate policy decisions: Capital structure, payout policy and diversification decisions. For this, a partially hand-collected sample of firms listed in the Composite DAX of Deutsche Börse Group is used. The sample covers 660 firms during the 1995 to 2006 period. The German

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[1]La Porta et al. (1999), p. 511.

environment provides an ideal research setting for my analysis since nearly half of the listed firms are classified as a family firm according to my definition.[2]

My analysis of corporate policy decisions in family firms pursues two main objectives. First, it aims to provide insights if and how families affect the corporate policy decisions of "their" firms. Second, it addresses the question which economic "forces" govern family firms. While analyses of corporate performance of family firms focus on a highly aggregated measure, the investigation of corporate policy decisions represents a promising field of research to unveil their peculiarities. The identification of these "forces" might lead to a better understanding of the differences between family firms and their non-family counterparts.

My results are of importance, both for academics and practitioners. For example, family firms as an investment class started to gain increasing attention over the last years. Among the first to react on this demand was Deutsche Börse Group, which introduced the stock index DAXplus Family[3] to mirror the performance of listed family firms in Germany. Hence, a deeper understanding of family firms would benefit equity investors and potentially increase their interest in these firms. Furthermore, capital market regulators can only consider the needs of family firms if they have a pronounced understanding of their peculiarities. Behind the background of the comparatively large number of unlisted (family) firms in the German environment, a more detailed understanding of family firms might also help to identify reasons why unlisted family firms refrain from a listing at public equity markets. Based on that, regulatory frameworks can be adapted to increase the attractiveness of a public listing for hitherto unlisted family firms.

The principal-agent theory forms the theoretical framework of my analysis. In this context, family firms differ from their non-family counterparts along three main dimensions: They have less severe agency conflicts I and III, but a more pronounced agency conflict II. The

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[2]Several definitions for family firms are discussed in the literature. In my analysis, a firm qualifies as a family firm if the founding family holds at least 25% of the voting rights or if a member of the founding family is present in the firm's management or supervisory board. A detailed overview on the defintion applied in this dissertation is provided in chapter 2.1.2.

[3]Deutsche Börse Group calculates two indices: The DAXplus Family 30 and the DAXplus Family All Share. The DAXplus Family 30 is an index calculated by Deutsche Börse Group as price and performance index for the 30 family firms with the largest market capitalization. The DAXplus Family All Share covers a wider range of family firms. A detailed description of this index is provided by Deutsche Börse Group (2010).

reasons for the assumption of a lower agency conflict I, i.e. the conflict between the firm's owners and managers, in family firms are monitoring incentives of family shareholders and interest alignment between family shareholders and managers. Similarly, alignment of interest between family shareholder and debt providers decreases agency conflict III, i.e. the conflict between equity and debt providers, in family firms. Higher agency conflict II, i.e. the conflict between majority and minority shareholders, arises since family shareholders have both the power and incentives to extract private benefits of control from "their" firm. However, I argue that private benefits of control relevant for family shareholders differ substantially from those of other types of blockholders, e.g. institutional investors. In this context, I focus on two private benefits that are of pronounced importance for family shareholders: Risk aversion and control retention.

To investigate corporate policy decisions, I first focus on overall differences between family firms and their non-family counterparts. In a second step, the question how families influence the corporate policy decisions is analyzed. For this, I distinguish between family ownership and the representation of the family in the firm's top-management. Furthermore, different empirical tests are applied to identify the economic "force" leading to a different behavior of family firms. Of course, a large battery of robustness test is conducted to ensure that the results are not biased, e.g. by endogeneity.

To summarize, family firms gained increasing attention over the last years, both from academics and practitioners. However, most research focused on performance differences between family firms and their non-family counterparts so far. Little is known about differences in terms of corporate policy decisions. The motivation for my analysis of German family firms is to shed light on the question if, how and why family firms behave differently as compared to their non-family counterparts in terms of capital structure, payout policy and diversification decisions.

1.1 Research questions

This section summarizes the research questions of my dissertation. The first two questions are subdivided for the three single corporate policy decisions which are considered in this dissertation. The last question is not subdivided since it deals with the overall "force"

behind decisions in family firms. Consequently, results obtained for all separate corporate policy decisions will be employed to answer this third question.

Since I am interested in whether, how and why family firms adapt their corporate policy, I divide my research questions in three parts. The first part focuses on overall differences between family firms and their non-family counterparts.

Question 1: Do family firms differ from non-family firms in terms of corporate policy decisions?

Question 1a: Do family firms differ from non-family firms in terms of capital structure decisions?

Question 1b: Do family firms differ from non-family firms in terms of payout policy decisions?

Question 1c: Do family firms differ from non-family firms in terms of diversification decisions?

After overall differences, I focus on the question how families influence the firm's corporate policy, i.e. either by their equity ownership stake or by playing an active role in the firm's top-management.

Question 2: How do families influence corporate policy decisions?

Question 2a: How do families influence the capital structure decision?

Question 2b: How do families influence payout policy decisions?

Question 2c: How do families influence diversification decisions?

Finally, the question why family firms adapt their corporate policies is addressed. From an agency theory perspective, family firms might adapt their corporate policy, by and large, either because of lower agency conflict I or III or because of higher agency conflict II. This distinction is important since the extraction of private benefits of control (higher agency conflict II) can lead to sub-optimal corporate policy decisions in family firms, e.g. by hindering firm growth. On the contrary, an adaptation of corporate policy due to lower agency conflict I or III represents an optimal response to the different governance system in family firms. Hence, the identification of the "force" behind differences between family

and non-family firms is of huge importance. Consequently, the final question raised in this dissertation is the following:

Question 3: Why do families influence the corporate policy of "their" firms?

In section 4.2, testable hypothesis based on the research questions presented above are formulated. The results are presented in chapter 5.

1.2 Structure

This section provides an overview on the structure of this dissertation and briefly summarizes the most important aspects of all chapters.

First, the motivation, the research questions and the structure of this dissertation are described in this chapter. **Chapter 2** deals with the theoretical framework of my analysis. For this, the first important aspect that is addressed is the definition of a family firm (section 2.1). Unfortunately, there is no wildly accepted definition in the literature. Consequently, I provide an overview on different definitions applied in empirical research on family firms. Based on this, crucial aspects which were used that distinguish a family firm from a non-family firm are identified. My definition of a family firm, which is applied throughout the whole dissertation, is deduced afterwards. Furthermore, I focus on the theoretical background and especially on peculiarities of family firms from an agency theory perspective in this chapter (section 2.2). For this, a general overview on agency theory is provided, followed by a detailed description of differences between family firms and their non-family counterparts in terms of agency conflict I, i.e. the conflict between owners and managers of the firm, agency conflict II, i.e. the conflict between large and small shareholders and agency conflict III, i.e. the conflict between debt and equity providers. Furthermore, relevant aspects of the German institutional environment, i.e. its bank-based financial system, its two-tier board system, accounting requirements and aspects of payout regulation and taxation are presented (section 2.3).

Chapter 3 summarizes the empirical literature on family firms which is relevant for this dissertation. First, the seminal work of Berle and Means (1932) postulating the separation of ownership and control in listed companies is described (section 3.1). However, recent

empirical literature casts doubt on this view. Especially family firms are nowadays seen as a highly relevant exception of the separation of ownership and control. Second, the strand of literature dealing with family firms and corporate performance is described (section 3.2). In this context, recent research focusing on succession decisions in family firms and discrepancies between family ownership and control are considered. Third, and most relevant for this dissertation, empirical work dealing with family firms and corporate policy decisions is summarized (section 3.3). For this, I consider empirical literature about capital structure, payout policy and diversification decisions in family firms.

After the overview on relevant literature, **chapter 4** deals with the dataset, the hypotheses, the research design and the methodology of the empirical analysis. First, I present the dataset applied in this dissertation (section 4.1). This dataset consists of listed German firms over the period 1995 to 2006, leading to a total number of 660 firms. In this context, the composition of the sample, e.g. the commonness of family firms as well as the distribution of the sample firms over different industries and over time, is illustrated. Second, the research hypothesis are deduced from theoretical considerations and formulated in a testable manner (section 4.2). Third, the research design and the relevant variables for the empirical analysis are introduced (section 4.3). Thereby, I define the dependent variables measuring the corporate policy decisions and the relevant control variables for the regression analysis. Furthermore, important methodological aspects for the empirical tests are discussed. Fourth, the estimation methods applied in the empirical analyses are described (section 4.4). In this context, I discuss both the drawbacks and advantages of different panel regression models. A special focus lies on methods that are able to alleviate (or at least lower) concerns of endogeneity, i.e. the matching and the instrumental variable approach.

Chapter 5 presents the empirical results. First, I show descriptive results for the corporate policy decisions, ownership and board structures and other firm characteristics (section 5.1). Second, the results for the hypothesis constructed in chapter 4 are provided. The outcome for capital structure decisions, payout policy and diversification decisions are presented separately (in the sections 5.2, 5.3 and 5.4). Furthermore, a large battery of robustness tests for every corporate policy decision as well as empirical test settings that allow for the investigation why family firms adapt their corporate policy are discussed.

This chapter concludes with a discussion of the limitations of the empirical analysis (section 5.5).

Chapter 6 provides a summary of the main results, possible avenues for future research and a discussion on the contribution and the implications for theory and practice of this dissertation.

2 Theoretical framework

2.1 Family firm definition

The following sections deal with the definition of the term "family firm" is. Unfortunately, this is not straightforward since there are many different aspects that have to be considered and no commonly accepted definition exists so far. Consequently, I first present an overview on different definitions that were used in the (empirical) literature on family firms. After that, I describe important aspects identified in the literature and deduce the family firm definition used for my empirical work.

2.1.1 Definitions in the literature

Following Shanker and Astrachan (1996), a family firm is an organization that is owned and often managed by one or multiple family members. However, there is no consensus on the exact definition of a family firm. Hence, in the empirical literature on family firms numerous different definitions were used. This section provides an overview on these different definitions and tries to identify critical aspects for the separation of family firms from their non-family counterparts.

The first important distinction that has to be made is the one between **founding** families and "normal" families. Founding families are the founder(s) of the company and their families (i.e. their relatives and descendants). Normal families are individual shareholders which have no relation to the founder(s) of the company.

Another critical aspect in defining a family firm is to find objective criteria for the distinction between family and non-family firms. Two criteria which are regularly used are *family*

ownership and *family management*. However, the required threshold for family ownership and / or the degree of participation in the firm's management have to be defined. Furthermore, some definitions require that both criteria exist at the same time, while others are based on either family ownership or family management. Sometimes it is even required that the founder is still active in the firm, either as CEO or in the management (*founder involvement*). Another aspect recently discussed to define family firms more accurately is related to the question which family generation, i.e. the founder(s) themselves or their descendants, is involved in the firm, either as shareholder or manager (*family generation*).

The difficulties arising with the definition of a family firm are reflected in the different definitions used in the literature on family firms. Table 2.1 summarizes the definitions of the most important papers which are relevant for this dissertation.[1] The definitions are divided in those for U.S. family firms and for firms outside the U.S. capital market.[2]

Table 2.1: Overview on Family Firm Definitions

Author(s)	Country	Family firm definition
Studies for the U.S. capital market		
Johnson et al. (1985)	U.S.	CEO of the firm is the company's founder. However, they do not explicitly classify these firms as family firms.
Morck et al. (1988)	U.S.	Member of the founding family is among the top two officers.
Holderness and Sheehan (1988)	U.S.	Individual shareholder owns the majority of the company's stocks.
Slovin and Sushka (1993)	U.S.	CEO of the firm is the company's founder. However, they do not explicitly classify these firms as family firms.
Yermack (1996)	U.S.	CEO is from a family which either founded the company or acquired control during a takeover.
McConaughy et al. (1998)	U.S.	CEO is either the founder or a descendant of the founder.
Mishra and McConaughy (1999)	U.S.	CEO is the founder or related to the founder.
Ang et al. (2000)	U.S.	Single family owns more than 50% of the firm's shares.
Anderson et al. (2003)	U.S.	Founding family has an equity ownership stake.
Anderson and Reeb (2003*a*)	U.S.	Founding family has equity ownership and / or is present in the board of directors.
Anderson and Reeb (2003*b*)	U.S.	Founding family is present in the firm.

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[1]Of course, this overview is not exhaustive since not all papers dealing with family firms are represented. However, I focus on those papers which are discussed in later sections of this thesis. A similar overview of family firm definitions is provided by Miller et al. (2007).

[2]Ownership concentration is usually higher outside the U.S. capital market. Hence, required thresholds for family ownership are often smaller in these capital markets.

Author(s)	Country	Family firm definition
Anderson and Reeb (2004)	U.S.	Founding family has equity ownership and / or is present in the board of directors.
Perez-Gonzalez (2006)	U.S.	At least one of the following criteria has to be fulfilled: (a) An individual holds at least 5% of the firm's voting rights; (b) Two or more individuals, related by blood or marriage, are either directors, officers, or shareholders; (c) The founder is an executive or director.
Villalonga and Amit (2006)	U.S.	Firms whose founder or a member of the family by either blood or marriage is an officer, a director, or the owner of at least 5% of the firm?s equity, individually or as a group. Several additional definitions are applied: 1. One or more family members are officers, directors; 2. There is at least one family officer and one family director; 3. The family is the largest voteholder; 4. The family is the largest shareholder; 5. One or more family members from the 2nd or later generation are officers, directors, or blockholders; 6. The family is the largest voteholder and has at least one family officer and one family director; 7. The family is the largest shareholder and has at least 20% of the votes; 8. One or more family members are directors or blockholders, but there are no family officers; 9. The family is the largest voteholder, has at least 20% of the votes, one family officer and one family director, and is in 2nd or later generation (Villalonga and Amit (2006), p. 413).
Hu et al. (2007)	U.S.	The founder or her family maintains a presence in senior management, on the board, or as significant shareholder.
Miller et al. (2007)	U.S.	True family businesses are defined as those firms which have multiple family members as insiders (officers or directors) or large owners (5% or more of the firm's equity) at the same time or over the life of the company as family descendants. Contrary, *lone founder businesses* are defined as those in which an individual is one of the company's founders with no other family members involved, and is also an insider (officer or director) or a large owner (5% or more of the firm's equity).
Villalonga and Amit (2010)	U.S.	Four alternative definitions: 1. Founder or a member of his or her family by either blood or marriage is an officer, director, or blockholder, either individually or as a group; 2. Only family firms, according to definition 1, in their second or later generation which are family managed (those whose CEO is the founder or a member of the founding family); 3. Like definition one, but all families, not only founding families are considered and a ownership threshold of 5% is included; 4. Combination of defintions two and three.

Author(s)	Country	Family firm definition
Villalonga and Amit (2009)	U.S.	Firms in which the founder or a member of his or her family by either blood or marriage is an officer, director, or blockholder (over 5%), either individually or as a group. Furthermore, they distinguish between first-generation (*founder-controlled*) firms, and second or later-generation firms (*family firms proper*).
Fahlenbrach and Stulz (2009)	U.S.	The firm's CEO is the company founder.
Gomez-Mejia et al. (2010)	U.S.	Two or more directors must have a family relationship and family members must hold at least 10% of the firm's voting stocks.

Studies for international capital markets

La Porta et al. (1999)	27 countries	The controlling shareholder is an individual and has more than 20% of the firm's voting rights (either direct or indirect).
Faccio and Lang (2002)	13 European countries	The ultimate owner which possesses more than 20% of the firm's cashflow or control rights is either an individual or an unlisted firm.
Claessens et al. (2002)	8 East Asian countries	A firm is family owned if the largest ultimate shareholder is a family group.
Gugler (2003*b*)	Austria	A family holds the largest stake in the firm (based on ultimate ownership)
Cronqvist and Nilsson (2003)	Sweden	A family is the controlling minority shareholder of the firm.
Maury and Pajuste (2005)	Finland	The largest shareholder of the firm is a family and has at least 10% of the voting rights.
Barontini and Caprio (2006)	11 European countries	Largest shareholder at the 10% cut-off is a family **and** the family controls more than 51% of direct voting rights, or controls more than the doubleof the direct voting rights of the second largest shareholder.
Maury (2006)	13 European countries	The largest controlling shareholder has a holding at least 10% of the voting rights and is a family, an individual, or an unlisted firm.
Sraer and Thesmar (2007)	France	The founder or a member of the her family is a blockholder with more than 20% of the firm's voting rights.
Andres (2008)	Germany	A firm must fulfill one of the following criteria to qualify as a family firm: 1. The founder and/or family members hold more than 25% of the voting shares; 2. The founding family is represented on either the executive or the supervisory board.
Ellul (2009)	36 countries	A firm in which the founder, or descendants of his/her family (either by blood or through marriage), is a blockholder (10% cut-off), either individually or as a group.
De Cesari (2009)	Italy	Firms that are controlled by an Italian individual investor or by an Italian unlisted firm are defined as family-controlled.

Author(s)	Country	Family firm definition
Setia-Atmaja et al. (2009)	Australia	A firm has to fulfill five criteria to qualify as a family firm : 1. There exists a dominant shareholder who is identified as a founding member involved in the management of the company and has a direct interest of greater than 20% of voting shares; 2. The dominant shareholder is the CEO or key member of the board (i.e. Managing Director or Chairperson); 3. The dominant shareholder continues to be the dominant shareholder and board member during the observation period, i.e. 2000 to 2005; 4. At least one other related party is a member of the board, and; 5. The dominant shareholder, in conjunction with other related parties, holds more than 30 per cent of the voting shares in the company directly or indirectly.
Bennedsen and Nielsen (2010)	14 European countries	*Family-controlled* firms are firms where the largest ultimate owner is a family. *Family managed* firms are firms where the CEO, honorary chairman, chairman or vice-chairman is a member of the controlling family.

Source: Own work
This table gives an overview on family firm definitions used in the empirical literature. Since it is beyond the scope of this dissertation to summarize all definitions, emphasis is put on papers which are of importance for this work. A similar overview is provided by Miller et al. (2007). The definitions are based on the own descriptions of the author(s) and are partly simplified. If more than one definition is applied, this table only summarizes their main definition. However, additional definitions which are of major importance (e.g. Villalonga and Amit (2006) or Miller et al. (2007)) are mentioned as well.

As can be seen in table 2.1, the definitions of a family firm vary among the different papers. While early papers on family firms mostly focused on just one aspect to define a firm as a family firm (cf. Morck et al. (1988) and Holderness and Sheehan (1988)), recent empirical research applies more sophisticated definitions (cf. Villalonga and Amit (2006) and Miller et al. (2007)).

In early studies, the main aspect of importance was the involvement of the founders (*founder involvement*) in their businesses (e.g. Johnson et al. (1985) or Slovin and Sushka (1993)). However, these studies did not explicitly deal with family firms but focused on the effect of founder CEOs instead.

The first papers dealing explicitly with family firms defined those either by *family own-*

ership or *family management.* For example, Holderness and Sheehan (1988) apply a definition that is purely based on family ownership, while Morck et al. (1988) ignore family ownership and focus on family management. The required threshold for family ownership varies, but most studies for the U.S. capital market require 5% ownership, while those focusing on capital markets outside the U.S. impose higher thresholds.[3] These two approaches of defining a family firm were common until the early 2000s (e.g. McConaughy et al. (1998), Mishra and McConaughy (1999), Ang et al. (2000) and Anderson et al. (2003)). Later, some authors combined these two approaches by requiring either family ownership or family management (cf. Anderson and Reeb (2003*a*), Anderson and Reeb (2003*b*), Villalonga and Amit (2006) and Andres (2008)).

However, in the last years doubts arose if these "simple" ways of defining a family firm are appropriate. Among the first to address this concern were Villalonga and Amit (2006), who did not only apply one definition in their analysis, but explicitly test if the results hold true for nine additional definitions (cf. table 2.1). Especially, they notice that the aspects that can qualify a firm as a family firm may have different effects on the outcome. In their study on firm performance, they show ...

> "... which forms of family ownership, control, and management make family
> firms more or less valuable. The overall conclusion is that whether family
> firms are on average more or less valuable than nonfamily firms depends on
> how these three elements enter the definition of a family firm."[4]

This finding is of huge importance since - as pointed out before - prior definitions were either based on *family management*, *family ownership* or a combination of these two aspects. Hence, the results of different papers have to be interpreted behind the background of the applied family firm definition. In this vain, Miller et al. (2007) argue that inconclusive findings for superior family firm performance may - at least in part - be attributed to different family firm definitions.

Another important aspect that was not considered for the definition of a family firm for

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[3]Examples for the 5% threshold in the U.S. are Anderson et al. (2003) or Villalonga and Amit (2006). Outside the U.S. thresholds are usually higher, with many studies requiring 20% family ownership (cf. La Porta et al. (1999), Faccio and Lang (2002), Sraer and Thesmar (2007) or Setia-Atmaja et al. (2009)) For Germany, Andres (2008) uses a 25% threshold.

[4]Villalonga and Amit (2006), p. 414.

a long time is the *family generation*. While the impact of company founders on different aspects was analyzed in detail, little is known about the influence of later generation family members. This question was first addressed by Villalonga and Amit (2006) and Miller et al. (2007). The latter distinguish between *lone founder businesses* and *true family businesses* and demonstrate that this distinction has a huge influence on the question whether family firms exhibit superior performance. Similar results are reported by Villalonga and Amit (2009) who distinguish between first-generation (*founder-controlled*) firms and second or later-generation firms (*family firms proper*).

To summarize, the definition of a family firm is not straightforward. However, as recent literature has shown, its impact on the results is fundamental. Hence, the distinction between different aspects of family firms, e.g. *family ownership* and *family management*, is of huge importance and was largely neglected in prior literature. Furthermore, there are good reasons to believe that first generation family firms differ substantially from second or later generation family firms. As Miller et al. (2007) state, ...

> "... results are especially sensitive to the distinction between "lone founder" businesses like Microsoft with no family of the founder in the business, which do outperform, and businesses like Comcast that have founders present with other family members serving as owners or managers, which do not outperform. This distinction has been blurred in prior research that places lone founders and family founders in the same category."[5]

2.1.2 Applied definition

As described in section 2.1.1, the definition of a family firm is not straightforward and consensus in the literature is still missing. However, several aspects that are important for the definition of a family firm were identified by previous research. These aspects can be summarized as follows:

Huge impact of the definition: The definition is of huge importance and results from empirical work with different underlying definitions should be compared with caution. Family firms per se are very heterogeneous (cf. Miller et al. (2007)). For the

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[5]Miller et al. (2007), p. 831.

purpose of my empirical analysis, i.e. the comparison of corporate policy decisions between family firms and their non-family counterparts, this heterogeneity is crucial. For example, alignment of interest between shareholders and managers is especially high in firm with both family management and ownership (cf. chapter 2.2.2). Consequently, a proper research design must be capable of considering this intra family firm heterogeneity.

Family ownership: The most self-evident approach to classify a firm as a family firm is by using family ownership. Early studies on family firm only focused on this aspect. Consequently, a proper family firm definition must consider family ownership as a possibility - at least among others - to qualify a firm as a family firm.

Family management: Beneath family ownership, family management plays an important part. Recent empirical work on family firms often focuses on firms still run by the founder. Furthermore, the families' possibilities to influence corporate policy decisions are much stronger if they are represented in the firm's top-management.

Family generations: The distinction between first and second or later generation family firms is important because empirical work has shown that these types of family firms differ systematically (cf. Miller et al. (2007)). While first generation family firms are usually run by the founders themselves, second or later generation firms are mainly in the hands of their descendants.

Another aspect that is of importance for the definition of a family firm is the distinction between *individual* and *founding family* ownership. Early studies on family firms mainly focused on individual ownership of investors not related to the founder of the firm (cf. La Porta et al. (1999) or Faccio and Lang (2002)). However, more recent empirical work on family firms frequently concentrates on *founding* family ownership (cf. Anderson and Reeb (2003*a*) or Villalonga and Amit (2006)). Several reasons support the usage of founding family instead of individual ownership. By and large, these reasons are:

Undiversified equity: The undiversified wealth the founding family in terms of their investment in the firm is assumed to have important implications for their attribution towards risk (cf. section 2.2.3). However, this holds only true for founding family ownership and not for individual ownership. Rich individuals who invest their wealth

in firms often hold equity position in more than one firm. On the contrary, founding families hold - in general - only an equity stake in "their" firm.

Interest alignment: Interest alignment between managers and shareholders decreases agency conflict I (cf. section 2.2.2). This alignment is especially high if the separation of ownership and control, as described by Berle and Means (1932), is low. For founding family firms, interest alignment is expected to be high since members of the founding family are often both shareholders and represented in the firm's top-management. For a individual shareholder, this does not hold true since they are rarely involved in running the firm.

Endogeneity: Empirical results for founding family ownership (and hence a definition of a family firm that relies on founding family ownership) are less likely affected by (potential) endogeneity. For example, a performance study based on individual ownership faces the problem that individuals might especially invest in well performing firms ("reverse causality"). For founding family ownership, this line of argumentation does not hold true since the founder (and her family) are invested in the firm since its incorporation. Of course, a definition based on founding family ownership can not completely solve the problem of endogeneity.[6] The topic of endogeneity will be discussed in detail in section 4.4.2.

Consequently, I focus on *founding* family ownership and management.[7]

A proper definition of a family firm has to account for several different aspects. Since a single definition is not able to fulfill this purpose, my research design is based on several steps, which are described below. The construction of the family firm variables is described in detail in section 4.1.2 and summarized in table Appendix 1.

In a **first step**, I apply a family firm definition based on both founding family ownership and management. In this context, a firm qualifies as family firm if the founding family either has an ownership stake of at least 25% (in terms of voting rights) or is represented in

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[6]The main aspect which can not be resolved by the usage of founding family ownership is that the founders' decisions to sell their equity stakes may not be independent of certain firm characteristics, e.g. their expectations about future firm performance.

[7]To simplify matters, I will use the terms family ownership and family management in the reminder of this dissertation. However, whenever the term family ownership or family management is used without any further comment, it always refers to founding family ownership or founding family management.

the firm's management or supervisory board (cf. section 4.1.2 for a detailed description).

In principle, this definition follows the existing literature (e.g. Anderson and Reeb (2003*a*) or Villalonga and Amit (2006), cf. section 2.1.1 for a detailed overview), but the ownership threshold is adapted for the more concentrated ownership structures in Germany. As pointed out in section 2.1.1, this is common practice for studies outside the U.S. capital market.[8] The threshold of 25% was not chosen randomly but because it is an important ownership barrier in the German environment. For several important decision, the German law requires a 75% majority at the annual shareholders' meeting.[9] For example, this is necessary for a liquidation of the company (cf. §262 para. 1 AktG) and for the change of its constitution (cf. §179 para. 2 AktG). Hence, a 25% ownership stake enables the shareholder to inhibit these resolutions (so called "Sperrminorität").

In a **second step**, I analyze the effects of *family management* and *family ownership* in my empirical analysis. As mentioned before, family management and ownership are important characteristics of family firms. However, their impact on corporate policy decisions may be of different magnitude or even contrary. For this, I use dummy variables for the participation of the family in the firm's management and supervisory board as well as a variable measuring the ownership stake of the family (cf. section 4.1.2 for a detailed description).

A member of the management board with pronounced importance is the CEO. The reason for this argumentation is that CEOs are especially important for corporate decision making, as for example demonstrated by Bertrand and Mullainathan (2003). Furthermore, founder CEOs are special in a number of ways: they often consider the firm as their lifetime achievement and might show a strong commitment to the firm rather than enjoying the "quiet life", leading to a high desire for control retention (cf. section 2.2.3 for a more detailed discussion of control retention). Founder CEOs might have superior technological skills or firm specific knowledge, or even more entrepreneurial talent in comparison to descendant or non-family CEOs (cf. the overview on the literature dealing with succession decisions in chapter 3.2.3 in this context). Moreover, founder CEOs have shaped their organizations from the very beginning and might therefore have an especially strong

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[8]For example, Andres (2008) uses a 25% threshold for the German capital market as well.

[9]Cf. section 2.3.2 for a detailed description of the role of the annual shareholders' meeting in the German environment.

influence on corporate decision making.[10]

In a **third step**, I subdivide family firms into two subgroups in my empirical analysis: *First generation* and *Second or later generation* family firms. This distinction explicitly considers the finding of Miller et al. (2007) and Villalonga and Amit (2009) that family firms are very heterogeneous and that the distinction between first and second or later generation family firms is of huge importance. First generation family firms are denominated as *founder-controlled firms*. Second or later generation family firms are named *real family firms* (cf. section 4.1.2 for a detailed description).[11] While founder-controlled firms are almost exclusively dominated by the founder, real family firms are characterized by a significant participation of non-founder family members. This is illustrated by the following ownership facts: The average ownership of the founder in founder-controlled firms is 29%, whereas it is only 5% in real family firms. Non-founder family members hold on average 40% of the voting rights in real family firms. In contrast, they own on average less than 2% in founder-controlled firms.[12] Hence, all family firms belong to one of these two subgroups. A firm which does not fulfill the criteria of a family firm is not able to qualify as a *founder-controlled firm* or *real family firm*.

One aspect that is worth mentioning is the difference between family firms and insider ownership firms. Insiders are generally defined as the firm's top-management. In the German environment with its two-tier board system, members of the management and supervisory board are usually classified as insiders. I refer to this definition of insider ownership as "active insider ownership". Furthermore, the ownership of former members of the supervisory and management board can be classified as insider ownership as well (I refer to that as "insider ownership").[13] In an Anglo-Saxon environment, members of the board of directors are seen as firm insiders. Insider ownership firms were the focus of a

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[10]Cf. Fahlenbrach and Stulz (2009) for a similar argumentation about the special capabilities of founder CEOs. See Bertrand et al. (2008) for the "quiet life view" of CEOs and Adams et al. (2005) for empirical evidence on the strong decision power of founder CEOs.

[11]In principle, this procedure follows Miller et al. (2007). However, their nomenclature and definition of first and second or later generation family firms are slightly different.

[12]Of course, there are other possibilities to separate real family firms from founder-controlled firms. According to my definition, the ownership stake or management involvement of members of the founding family except the founder herself alone must be sufficient to qualify a firm as a family firm. Of course, the founder may have an ownership stake or management role in these firms as well.

[13]The German Entrepreneurial Index (GEX) uses a definition of insider ownership that includes the ownership of current and former members of the firm's supervisory and management board and their families (cf. Achleitner et al. (2005) and Achleitner and Ampenberger (2006)).

Figure 2.1: Family, Insider and Individual Ownership

Founding-Family Ownership

Active Insider Ownership

Founder Management Board	Member of Management Board
Founder Supervisory Board	Member of Supervisory Board

Founder Former Management Board	Former Member of Management Board
Founder Former Supervisory Board	Former Member of Supervisory Board

Insider Ownership

Founder without Active Role	Individual without Active Role
Founder Employee	Employee

Individual Ownership

Source: Own work

considerable strand of literature (cf. Morck et al. (1988), McConnell and Servaes (1990), Holderness et al. (1999) or - more recently - Kaserer and Moldenhauer (2008)). However, they are not the focus of this dissertation.

The differences between the discussed ownership concepts, i.e. founding family ownership, individual ownership and (active) insider ownership, are illustrated in figure 2.1. As can be seen, the concepts of family, (active) insider and individual ownership have a considerable interference. Hence, it is not straightforward to disentangle the effects of family ownership and insider ownership. To account for this problem, I present robustness tests for my results that aim to fulfill this purpose (cf. chapter 5).

2.2 Agency theory and family firms

2.2.1 Agency theory in general

Agency theory - or more accurately principal/agent theory - is part of the New Institutional Economics. Since a comprehensive overview of this widespread theory shell not be the

focus of this dissertation, I briefly summarize those aspects that are important for the theoretical framework of my analysis.[14] The main idea behind agency theory is that people have different motivations and act in a rational way in order to maximize their individual utility. Another important aspect of the theory is that incomplete markets are assumed. In particular, information is not complete and possibly asymmetric distributed between different actors in the market. Furthermore, the world is characterized by uncertainty. In the theoretical setting, a principal hires an agent to work on his behalf. In the context of a company, the principal are the owners, i.e. the shareholders. The agent is, of course, the hired manager of the firm. In a firm with separation of ownership and control, shareholders hire external managers to run "their" firm. The motivation of the shareholders is to maximize their utility, e.g. their wealth.[15]

Although the problems arising with separation of ownership and control were already described in the 1930s by Berle and Means (1932), the first to express the conflicts between principals and agents in the context of a firm in a formal way were Ross (1973) and Jensen and Meckling (1976) in the 1970s. In general, the principal-agent relationship is characterized by two major problems:

The **first** problem in the principal-agent relationship, which I will refer to as *divergence-of-interest*, arises because the principal and the agent persuade different goals and desires and because it is impossible or at least expensive for the principal to monitor the agent, i.e. to supervise the behavior of the agent. Hence, it is difficult for the principal to judge if the agent behaves according to his will or if he tries to maximize his own utility. In this context, one has to separate between a situation in which the agent can not judge on the behavior of the agent (*hidden action*) or on the outcome of the agent's actions (*hidden information*). Since the agent has more information about his actions and their outcome than the principal, he can use this informational advantage to maximize his utility (*moral hazard*).

In the context of the shareholder-manager relationship, the manager has different possibilities to maximize his utility at the cost of the shareholder. In the following, I shortly

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[14] A very good overview on all aspects of agency theory can be found in Eisenhardt (1989).

[15] As chapter 3.1 points out this view shaped by Berle and Means (1932) does not necessarily hold true for all modern corporations, especially outside the U.S. capital market. Furthermore, the situation in family firms is different: In those firms managers and owners often belong to the same family. A detailed discussion of the consequences arising from that is given in 2.2.2.

summarize the main possibilities of the agents to maximize their utility:

Managerial myopia: Managers and shareholders can have different horizons for the evaluation of investment projects. While shareholders are often assumed to be long-term orientated, managers may optimize the outcome of their work on the short run since their time in the firm is limited (*short-termism*). Hence, they might prefer short time projects even if more profitable long term projects are available, leading to less shareholder value. In a similar vain, Stein (1988) argues that managers have incentives to prefer short over long term projects in order to avoid hostile takeovers. He refers to that as *managerial myopia*. Other aspects beneath takeover threats have been discussed as reasons for short term orientation as well, including short term trading by institutional investors and the short-term focus of security analysts.[16] However, it is important to note that short-termism can not only be caused by managers, but by shareholders as well. If shareholders have short investment horizons, they benefit from short-termism of the management. In a different context, similar arguments for short term orientation can be found for politicians who have a limited time in their current occupation as well (cf. Gersbach (2004)).

Effort: The manager can determine his effort which is difficult to be monitored by the shareholders. Hence, the agent may reduce his effort in order to maximize his utility. For example, the manager could use the time to engage in different projects like taking a seat in the supervisory board of another firm. However, one aspect against choosing a low effort level is that manages might be intrinsic motivated (cf. Jensen and Meckling (1976) or Levinthal (1988)).

Consumption on the job: The managers have incentives to spend the earnings of the firm on their own behalf. Since the shareholders can not monitor all decisions of the managers, they are forced leave them a margin concerning business decisions. However, the managers can use this margin to maximize their utility which is, for example, influenced by their status or by non-monetary aspects of their job. Hence, they can use earnings created by the firm (and belonging to the shareholders) to increase their utility. One way to realize this is the usage of a huge office, a expensive

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[16]Examples of the huge literature on managerial myopia are Narayanan (1985), Stein (1989). A comprehensive overview is provided by Laverty (1996).

business car or jet or frequent business travels.[17] Furthermore, managers might favor friends or relatives as business partner (e.g. as suppliers) instead of choosing business ties based on rational (market) reasons like costs or quality.

Self-dealing: Beneath the selfish (but legal) expropriations of shareholders by *consumption on the job*, the managers might also have motivations to increase their utility at the cost of the shareholders in an illegal fashion. For example, they might engage in insider trading, i.e. by using private information on the firm for trading activities, or directly steal money, either by purloining assets or money of the company or by selling assets below their fair value to an accomplice.

Empire building: In a similar vain, the status of managers may be linked to the size of the firm they are working for. Hence, they have incentives to increase firm size or sales, independent of the question if this increases shareholder value or not. A popular way to engage in *empire building* are takeovers of other firms (cf. Jensen (1986), Jensen (1988) or Andrade et al. (2001)). Jensen (1988) argues that the danger of *empire building* increases with the free cash flow available to the decision margin of the managers. Hence, reducing free cashflow available to managers can provide a potential solution for (costly) empire building. A promising method to realize this reduction is to commit managers to periodical cash outflows, e.g. by increasing interest rate obligations or dividend expectations by the capital market (cf. Rozeff (1982) or Easterbrook (1984))[18].

The **second** problem in the principal-agent relationship arises due to their different attitudes toward risk. In this context, it is regularly assumed that shareholders are risk neutral since they hold a diversified (market) portfolio, while managers are risk averse (cf. Eisenhardt (1989)). The view of risk averse managers is, by and large, based on three arguments. First, managers invest their human capital in the firm and have to bear a higher systematic risk than the shareholders who did not invest their human capital (cf. Fama (1980)). Second, managers face the threat of a loss of their job. Third, beneath their human capital, managers are often forced to hold an equity stake in the firm

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[17]Of course, a business jet, for example, is not always a form of consumption on the job. This holds only true if the jet is not needed by the manager to fulfill the tasks given to him by the shareholders.

[18]Dividend payments are voluntary and hence a weaker commitment compared to interest rate payments. However, it is assumed that the capital market reacts negatively on dividend cuts, what commits firms to sustain their dividend policy in the long run (cf. for example Grullon et al. (2002)).

they manage, e.g. because of stock-based compensation. Hence, based on their different risk preferences, shareholders and managers might (rationally) favor different investment projects to maximize their utility.

In order to solve or at least mitigate agency conflicts between shareholders and manager, different aspects are discussed in the literature.

Interest alignment: As argued by Jensen and Meckling (1976), ownership in the hands of managers provides a possible solution for agency conflicts between managers and shareholders. Since managers become owners, the interests of the managers converge towards the interests of the other shareholders. For example, destroying shareholder value by empire building becomes costly for the managers as well if they own part of the company. Another way to align the interests of managers and shareholders is performance based compensation. If the compensation of managers depends for example on the shareholder value (which is the main interest of the shareholders), interest divergences between principals and agents are reduced.[19]

Monitoring: One natural solution for most problems arising from divergence-of-interest between shareholders and managers is monitoring. However, monitoring is very expensive. As shown by Grossman and Hart (1980) in their theoretical model, the free rider problem leads to a situation in which monitoring becomes unattractive for all shareholders.[20] However, Shleifer and Vishny (1986) show that the presence of a large blockholder changes monitoring incentives from a theoretical point of view. Contrary to single small shareholders in an atomistic ownership structure, large blockholder have incentives for and engage in monitoring.

Bonding costs: Beneath *interest alignment* and *monitoring*, *bonding costs* can mitigate conflicts between managers and shareholders. *Bonding costs* are costs managers take upon themselves at the expense of their own utility. For example, a manager can voluntary choose to increase the transparency of his actions, e.g. by more frequent

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[19]However, the topic of performance based compensation is rather complex in its practical application. For example, it is not straightforward to identify a good "benchmark" to measure the effort and success of a manager. For a recent overview on this topic, cf. Fahlenbrach (2009*b*).

[20]The free rider problem arises because all shareholders are interested in the maximization of their shareholder value. Since it is not necessary that all shareholders monitor the management, every shareholder would benefit - at no cost - from the monitoring of another shareholder. Since monitoring is costly and no efficient method to compensate those shareholders that engage in monitoring exists, no shareholder will start monitoring.

or detailed reporting to the shareholders or by voluntary increasing the performance based part of his compensation, at cost of the fixed part.

As pointed out, the presence of large blockholder is of huge importance for *monitoring* incentives. Furthermore, *interest alignment* through managerial ownership reduces conflicts between shareholders and managers.

So far I focused on one specification of a principal agent conflict, i.e. the conflict between shareholders and managers. I will refer to that conflict as **agency conflict I** from now on. Beneath the agency conflict I, there exists another principal agent setting in firms: The conflict between large (majority) and small (minority) shareholders. Following the existing literature (e.g. Villalonga and Amit (2006)), I will denominate this the **agency conflict II**.

Large shareholders may use their power to extract *private benefits of control* from the firm, at the cost of small minority shareholders. However, the incentives for the expropriation of private benefits of control are closely linked to the large shareholder's identity. For institutional investors, so called "tunneling" may be of relevance. Tunneling is the transfer of wealth out of the firm at the benefit of the controlling shareholders (cf. Johnson et al. (2001)). Other means of private benefits of control are diversification and the bailing out of weak affiliates (cf. Holmen and Knopf (2004)). A detailed discussion of tunneling and other aspects of private benefits of control in the context of blockholders is provided by Barclay and Holderness (1989) or Shleifer and Vishny (1997).

While for institutional blockholders, which belong to many small owners, incentives for the extraction of private benefits may be less pronounced (since the benefits are diluted among the individual owners), the situation is different for large individual blockholders who directly benefit from the extraction (cf. Faccio et al. (2001), Morck and Yeung (2003), Miller and Le Breton-Miller (2006)) and Villalonga and Amit (2006)). One particular type of an individual shareholder are families who might have high incentives for expropriation of private benefits of control. Section 2.2.3 discusses the role of private benefits in the context of family shareholders in detail.

Beneath the conflict between shareholders and management (agency conflict I) and between large (majority) and small (minority) shareholders (agency conflict II), there exists

another conflict in firms that can be seen as a principal agent problem: The conflict between equity and debt providers. I will refer to that as the **agency conflict III**. Thereby it is argued that shareholders can expropriate debt providers by investing in riskier projects. While shareholders profit from the payoff of riskier projects, debt providers have to bear the main risk (cf. Anderson et al. (2003), Fama and Miller (1972) and Jensen and Meckling (1976)). The rationale behind that is that shareholders own a call option on the firm. If the value of the firm is higher than its debt obligations, they exercise the call option. Hence, more risky investments and hence more volatility in the value of the firm increase the present value of their call option. On the other side, the debt providers can not profit from higher volatility since their claim on the firm is capped. Contrary, higher risk leads to a higher probability that the firm can not fulfill its debt obligations. As a consequence, debt providers have huge incentives to ensure that shareholders and management do not invest in too risky projects. Common ways to mitigate this conflict are monitoring by debt providers and covenants.[21]

I will focus on agency conflicts I, II and - to some extend - III in family firms throughout my dissertation.[22] Of course, there exist several other agency conflicts in firms, like, for example between external stakeholders and the management. Figure 2.2 illustrates the different agency conflicts present in a firm which are relevant for my work.[23]

In the following sections, I will discuss why agency conflict I, II and III are different in family firms compared to their non-family counterparts. Several characteristics of family firms have important consequences for these agency conflicts, which in turn influence corporate policy decisions.

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[21]However, it is difficult for debt providers to take direct influence on investment projects from a legal point of view. Hence, they might require a higher compensation in the form of higher interest rates if conflicts between shareholders and debt providers are high (cf. Anderson et al. (2003)).

[22]An alternative theory in the context of family firms is *stewardship theory*. This theory, based on the work of Donaldson (1990), Donaldson and Davis (1991) and Davis et al. (1997), can be seen as advancement of the agency theory. The main rationale behind this theory is the view that managers do not behave selfish but in the best interest of the firm (and its shareholders). However, since my work focuses on agency theory, a detailed discussion of stewardship theory is beyond the scope of this dissertation. A comprehensive discussion of stewardship theory is provided by Velte (2010).

[23]Of course, there are several other conflicts which can be denominated as agency conflict, which are not considered here. However, my theoretical framework focuses on agency conflict I, II and III.

Figure 2.2: Agency Conflicts in a Firm
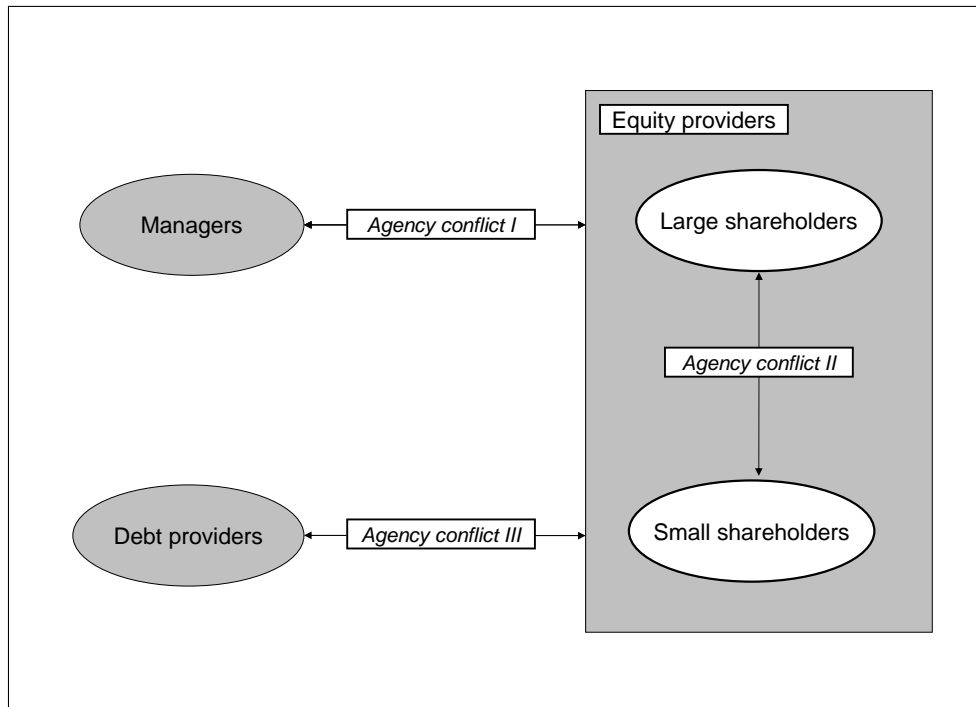
Source: Own work

2.2.2 Agency conflict I in family firms

It is a wide spread assumption in the literature on family firms that agency conflict I is less severe in these firms (cf. Anderson and Reeb (2003*a*) or Villalonga and Amit (2006)). The rationale for this assumption is twofold: First, less separation of ownership and control, which is typical for family firms, increases interest alignment between owners and managers. And second, family shareholders are usually large blockholders with high monitoring incentives (cf. Shleifer and Vishny (1986)). In the following, these aspects are described in detail:

Higher interest alignment: Family firms typically have ownership and control - at least partly - in the hands of the family.[24] For example, Faccio and Lang (2002) find that in more than two thirds of family controlled firms family members play an active role in the firm's management. A detailed review of the related literature is

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[24]The rationale behind this argument is that non-founding family private blockholder are usually not represented in the firms top-management. In these firms, hired managers with diverging interests run the firm. In firms still owned by the founders or their relatives, family representation in the top-management is common (cf. section 3.1). Hence, interest alignment between managers and (family) shareholders is assumed to be higher in these firms.

given in section 3.1. Since ownership and control are less separated in family firms, interests between (family) shareholders and (family) managers tend to be aligned. In a firm that has only family ownership and management, interests would be perfectly aligned. Consequently, agency conflict I is assumed to be lower in family firms in which the family is both owner and represented in the top-management.

Monitoring incentives of family shareholders: Family or - in general - individual blockholders have high incentives for monitoring the management, as demonstrated by Shleifer and Vishny (1986). They show that monitoring incentives are high in firms with a large blockholder and many small shareholders. Hence, in these firms agency conflict I as described by Jensen and Meckling (1976) is less severe due to the monitoring of the large shareholder. As argued by Villalonga and Amit (2006), families have even higher monitoring incentives than for example institutional blockholders which are characterized by an atomistic ownership structure. Hence, their benefits from monitoring are diluted among the owners, decreasing monitoring incentives. Furthermore, monitoring is less costly for family shareholders if members of the family are involved in the firm's top-management since informational asymmetries are smaller in this case. Consequently, family blockownership is assumed to decrease agency conflict I.

Hence, there are good reasons to believe that agency conflict I is less severe in family firms than it is in non-family firms, especially if the family is both a large owner and represented in the firm's top-management.

2.2.3 Agency conflict II in family firms

Although agency conflict I is less severe in family firms, agency conflict II might be more pronounced (cf. Villalonga and Amit (2006)). The rationale behind that is that family shareholders can use their power in the firm to extract private benefits of control, at the cost of minority shareholders. Although other blockholders can use their power to extract private benefits as well, family firms differ in two important dimensions: *First*, they have high motivation for the extraction of private benefits since they benefit from them directly. In the case of an institutional blockholder like an investment funds, private benefits are

diluted among the owners of the funds (cf. Villalonga and Amit (2006)). *Second*, the way private benefits are extracted is different for family firms and firms with other types of blockholder. While institutional blockholders might engage in, for example, *tunneling* (cf. section 2.2.1), I argue that two aspects that can be seen as private benefits of control are of major importance for family shareholders: **Risk aversion** and **control retention**. In the following, the reasons why these two aspects are crucial for family shareholders are explained.

Risk aversion

Risk aversion means that family shareholders are risk averse and not - as literature suggests for diversified shareholders - risk neutral (cf. Eisenhardt (1989)). By and large, there are three reasons why family shareholders are assumed to be more risk averse than other types of shareholders, i.e. their undiversified equity portfolio, their undiversified human capital and family reputation as a non-financial motivation.

Family firms are assumed to have a largely **undiversified** (or at least under-diversified) **equity portfolio**. Anderson et al. (2003) use Forbes Wealthiest Americans data to show that the founding families in their dataset of S&P-500 firms for the period 1993 to 1998 invest on average 69% of their financial wealth in the family business. Holmen et al. (2007) obtain a similar result for Swedish data. They use the extensive disclosure requirements on tax returns in Sweden ("offentlighetsprincipen") to analyze the portfolio diversification of large family shareholders in publicly listed Swedish firms between 1988 and 1991. Based on this detailed data, Holmen et al. (2007) report that family shareholders invest on average about 50% of their personal wealth in the family business (median value of 52%). Moreover, they can even show that the range of personal wealth invested in the family business is between 0.4% and 147%, i.e. some family shareholders even leveraged themselves to buy shares in the family business. Although detailed information on the portfolio diversification of founding families in my dataset is missing (including the financial wealth invested in private firms), it is reasonable to assume that they are also undiversified shareholders like in the U.S. or Sweden.

Furthermore, family managers active in the firm face a second problem: Beneath their

wealth, they have **undiversified human capital**. Even worse, their human capital and their wealth are linked to the same asset, their firm. For example, Fama (1980) shows that under-diversified managers try to influence the firms capital structure in a way that reduces their firm-specific risk (i.e. by decreasing firm leverage). Since family ownership is often accompanied by family management, there are good reasons to believe that these families try to reduce their firm specific risk by influencing the firm's corporate policy decisions.

The third aspect in favor of higher risk aversion in family firms is the family's **reputation concern**. The reputation of the family is closely linked to the firm (cf. Miller and Le Breton-Miller (2006)).[25] Thereby, it is argued that the reputation of the founders and their descendants depends on the fortune of their firm (cf. Ward (2004)). Since they face the danger of a decreased reputation, they might try to reduce firm risk in order to avoid bankruptcy (which is the worst case for their reputation).

To summarize, there are reasons to believe that risk aversion is higher in family firms. Hence, controlling family shareholders might influence corporate policy decisions in order to decrease risk at the firm level. This is one aspect of private benefits of control in family firms. The other relevant aspect in this context is control retention.

Control retention

Beneath risk aversion, **control retention** is a crucial aspect for family shareholders. There exist several peculiarities of family firms which support the view that family shareholders want to keep control over "their" firm in the long run. These peculiarities can be categorized in long-term orientation, emotional investment and family nepotism.

First, **long-term orientation** is one of the most important differences between family firms and non-family firms. While other types of shareholders are often focused on capital gains in the short run, family firms have a longer investment horizon. Empirical evidence for this long-term orientation is for example provided by Block (2009). In a theoretical model, James (1999) demonstrates in a two period model that investment horizons of

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[25]As Miller and Le Breton-Miller (2006) point out, this is especially the case if the name of the founder is still represented in the firm's name. Examples for this in my sample are Sixt AG, Wacker Chemie AG or Fielmann AG.

families are longer than those of small (atomistic) shareholders. In order to ensure that the family has an influence on the choice of the investment projects, it is important for them to keep the control over their firm. For example, Franks et al. (2009) show that family ownership in Continental Europe is enduring. They analyze information on the ownership structure of the 1.000 largest private and exchange-listed firms (in terms of sales) in Germany, Italy and France at two points of time, in 1996 and 2006. One interesting result of their study is that of all family firms in 1996, 74% (Germany), 78% (Italy) and 64% (France) are still family firms in 2006. This is a strong indication for the long-term commitment of family shareholders, at least in a Continental European institutional setting.

Second, and closely linked to long-term orientation, families see their firm as an **emotional investment**. In this context, family firms are often regarded as a family asset that has to be given from one generation to the next (cf. Becker (1976), Becker (1981), Chami (1999) and Casson (1999)). Thereby it is important to note that not only passing the wealth, but the family firm itself to following generations is of huge importance. Consequently, it is necessary for the family to stay in control over the firm. Otherwise, the family could pass on only wealth created by the firm, but not the firm as a family asset itself. Beneath control, the survival of the firm is a major aspect for family shareholders. Their emotional investment further increases the probability for family risk aversion, which was discussed in chapter 2.2.3.

Third, **family nepotism** is often found in family firms. Nepotism means that entrepreneurs favor to hire their relatives as employees. Bertrand and Schoar (2006) state this as follows:

> "[F]ounders may derive utility from seeing relatives involved in the business, they may decide to hire key managers from within their kinship network rather than turn to more talented professional managers."[26]

Among the first to analyze both the occurrence and the effects of family nepotism was Barnett (1960). He finds that Cantonese entrepreneurs who immigrated in the U.S. used their family network to hire employees for their firms, especially for important positions.

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[26]Bertrand and Schoar (2006), p. 78.

He concludes that this behavior might hinder firm growth in the long run. This nepotism exists because the firms' founders usually want to avoid to give important positions (and hence control) to persons they do not fully trust. Since family networks are closely linked, they provide the ideal employee pool in such a situation. Of course, family firms which are listed do engage external managers. However, even in these firms it is common that members of family are present in the firm's top-management (cf. section 5.1.1). Of course, family nepotism may hinder performance and - as a consequence - decrease shareholder value (cf. Bertrand and Schoar (2006)).

Altogether, several aspects common in family firms support the view that families are reluctant to give up control over "their" firm. Hence, they might influence business policy in a way that ensures or even maximizes their control over the firm.

To summarize, family shareholders have incentives to extract private benefits of control from "their" firm. However, these private benefits differ substantially from potential private benefits of control of other types of blockholders. By and large, family shareholders might try to extract benefits in the form of risk aversion and control retention. Furthermore, the incentives for the extraction of private benefits of control are higher for family shareholders as for institutional blockholders since they have a diffuse ownership structure themselves, leading to a dilution of the benefits (cf. Villalonga and Amit (2006)). As a consequence, agency conflict II, i.e. the conflict between large (controlling) and small (minority) shareholders, might be more pronounced in family firms than in firms with other types of blockholders or an atomistic shareholders structure.

2.2.4 Agency conflict III in family firms

The last agency conflict that is of relevance for this dissertation is agency conflict III, i.e. the conflict between equity and debt providers. Family firms exhibit lower agency conflict III than their non-family counterparts. The line of argumentation here follows the one for agency conflict I and II. Especially, family **long-term orientation** and **reputation** lead to an alignment of interests between (family) shareholders and debt providers. Since firm survival is of crucial importance for the family, they might be more willing to maximize firm value instead of shareholder value (cf. Anderson et al. (2003)). Furthermore, the

presence of the family over a long period of time creates strong ties between them and debt providers, what decreases informational asymmetries and increases trust.

Second, family reputation is of importance for this conflict. Since families are concerned about their long-term reputation, they are less likely to engage in exploitive actions because they know that this would have negative implications for the future.[27] Hence, they are less likely to hazard the trust the debt providers might have gained.

Consequently, the relationship between controlling family shareholders and debt providers is - contrary to the case of an institutional blockholder or an atomistic shareholder structure - characterized by less informational asymmetries, a higher level of trust and less divergence of interests. In such a situation agency conflict III is less pronounced.[28]

2.2.5 Summary

To summarize, family firm characteristics lead to differences in the levels of agency conflicts within these firms. Among those characteristics are less separation of ownership and control, monitoring incentives, undiversified equity, undiversified human capital, reputation concerns, long-term orientation, emotional investment and nepotism. As a consequence of these characteristics, agency conflicts in family firms are significantly different as compared to widely held firms or firms dominated by institutional blockholders. In particular, theoretical considerations suggests that:

Agency conflict I, i.e. the conflict between shareholders and managers, is **lower** in

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[27]Of course, hired managers also know that exploitive actions have negative implications for the future. However, their time in the firm is limited. Hence, the "present value" of an exploitive action leading to a gain today and to a loss in the future may be positive for them, contrary as for a family which plans to pass the firm to the next generation.

[28]Contrary to lower agency conflict I and higher agency conflict II, which are expected to influence all analyzed corporate policy decisions, lower agency conflict III is only considered for the analysis of capital structure decisions in family firms. However, Brockman and Unlu (2009) argue that the agency cost of debt have an impact on payout policy (cf. Smith and Warner (1979) and Kalay (1982) for a similar argumentation). In their international study, they find that payout increases with the creditor rights in a country. They relate this finding to the fact that high creditors lead to less payout restrictions in debt contracts. In this vain, it could be argued that family firms have higher payout ratios because of lower agency conflict III and hence less restrictions on payout in debt contracts. However, I assume that this is not relevant in the German context since German law restricts payout effectively (cf. §150 and §233 AktG), what reduces the need for additional restrictions by creditors. In this context, Leuz et al. (1998) demonstrate that direct dividend constraints in debt contracts are not common in Germany. Consequently, I assume payout policy in Germany to be independent of the agency costs of debt (agency conflict III). However, a more detailed investigation of agency conflict III and payout policy is a possible extension of my analysis.

family firms.

Agency conflict II, i.e. the conflict between controlling (family) shareholders and small minority shareholders, is **higher** in family firms.

Agency conflict III, i.e. the conflict between equity and debt providers, is **lower** in family firms.

As discussed by Villalonga and Amit (2006), the incentives for the expropriation of private benefits of control are especially high for individual or family shareholders. However, individual shareholders might mitigate agency problem I more effectively than other types of blockholders. To summarize, they state that ...

> "If, on the other hand, the large shareholder is an individual or a family, it has greater incentives for both expropriation and monitoring, which are thereby likely to lead Agency Problem II to overshadow Agency Problem I."[29]

These different levels of agency conflicts within family firms - as suggested by theoretical arguments presented in this section - can affect their corporate policy decisions. Possible consequences for corporate policy decisions as well as related hypotheses are presented in section 4.2.

The question if and how family firms change their corporate policy decisions due to their differences in terms of agency conflicts is ex ante not clear, but of huge importance. While corporate policy adjustments due to higher agency conflict II may negative consequence for family firms, e.g. for their growth, adaptations due to less pronounced agency conflict I and III represent an optimal response to the different governance system in family firms.[30]

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[29]Villalonga and Amit (2006), p. 387.

[30]However, it is important to note that I do not focus on performance differences between family firms and their non-family counterparts in the empirical sections of this dissertation. The reason for not considering performance differences in my empirical part is twofold: First, family firms and firm performance is a wildly discussed topic in the empirical literature on family firms (cf. section 3.2). Second, firm performance is influenced by numerous aspects and not only by agency conflicts. Furthermore, firm performance is a highly aggregated measure. Policy decisions are better suited to analyze agency conflicts since the effects of agency conflicts are more straightforward. Beneath that, agency conflicts lead to (at least partly) different predictions for the policy decisions considered in this dissertation.

2.3 The institutional environment

In the following, I describe characteristics of the German financial system that are of importance for this dissertation. These are that Germany is still rather a bank- than a market-based financial system. Furthermore, ownership structures are still very concentrated, in contrast to countries with more developed capital markets like the U.S. As a consequence, family firms are a very common and important phenomenon for the German capital market. Other important aspects are the two-tier board system and payout regulation and taxation in Germany.[31]

2.3.1 The German financial system

This section summarizes the most important aspects of the German financial system.[32] One of the main characteristics of the German financial system is that it is rather bank- than market-based (cf. Wenger and Kaserer (1998) and Gorton and Schmid (2000)) with widespread relationship lending (cf. Elsas and Krahnen (2004)). Furthermore, the level of capital market development and investor protection falls short of Anglo-Saxon countries (cf. La Porta et al. (1998), La Porta et al. (1999), La Porta et al. (2000b) and Theissen (2004)). For example, La Porta et al. (1998) calculate a shareholder rights (or anti-director) index for 49 different countries around the world.[33] For Germany, the index takes the value of one, i.e. the second lowest possible value. As comparison, only Belgium has a lower index (with an index value of zero), and the mean of the index over all countries is three. However, the index calculated by La Porta et al. (1998) is based on investor protection in the 1990s. In recent years several regulatory initiatives (partly driven by EU directions) have continuously increased transparency, investor protection and accountability in the German financial system. Although in many aspects legal rules have been adjusted towards a market-orientated system, some rules still lack enforcement and

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[31]Of course, there are other aspects relevant and characteristic for the German institutional environment. However, I focus only on those aspects that play an important role for my empirical study. A comprehensive, more detailed overview on the German financial system is provided by Krahnen and Schmidt (2004). An excellent overview on investor protection and market regulation can be found in Nowak (2004). Ballwieser (2009) provides a comprehensive overview on accounting regulation in Germany.

[32]The following section is partly based on Ampenberger et al. (2009).

[33]The index can take values from zero to six with zero being the lowest and six the highest investor protection.

the fundamental structure of the German bank-based financial system remained largely unchanged (cf. Goergen et al. (2008)).

In the German environment, bank loans are the predominant source of external financing. Traditionally, the German financial system is characterized by long-term lending relationships between so called 'house-banks' and industrial firms (cf. Elsas and Krahnen (2004)). House-banks are regarded to be the main lender of a firm with better long-term information, as compared to an equivalent arm's length bank. Following Greenbaum and Thakor (1995) and Boot (2000), such relationship lenders (house-banks) might have stronger incentives for the collection of information about the borrower (that is often proprietary in nature) and learn from repeated interactions with the same customer over time and across products. Bank loan contracts commonly include extensive debt covenants and collateral requirements (cf. Boot (2000)). Hence, a common view is that house-banks engage in tight creditor monitoring. Moreover, in the case of financial distress banks form so called bank-pools and are actively involved in the restructuring process (cf. Brunner and Krahnen (2008) and Jostarndt and Sautner (2010)). The banks' strong position in the case of financial distress is supported by a relatively creditor-friendly bankruptcy code in Germany (cf. La Porta et al. (1998), Davydenko and Franks (2008) and Jostarndt and Sautner (2010)). Beneath their shareholder rights index, La Porta et al. (1998) also define a creditor rights index.[34] This index takes a value of three for Germany, with the mean over all countries being 2.3. Finally, with respect to the absence of a viable corporate bond market public debt plays only a limited role in the financing of German companies. Those aspects suggest that banks are likely to exercise control over the firms they finance, play a major role in monitoring their borrowers and in restructuring them in the case of financial distress. La Porta et al. (2000b) state this as follows:

> "Germany and some other German civil law countries have developed banking systems because they have strong legal protection of creditors, particularly of secured creditors. Without such rights German banks would have much less power."[35]

While the so far mentioned aspects are relevant for both small and medium-sized and

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[34]The index can take values from zero to four with zero being the lowest and four the highest creditor protection.

[35]La Porta et al. (2000b), pp. 18-19.

large, exchange-listed firms, there are some other reasons why German universal banks are viewed to play an important role in the corporate governance of listed firms: (i) Banks are allowed to hold direct equity stakes in industrial firms, (ii) bankers are frequently members of the supervisory board and (iii) banks are allowed to exercise proxy-voting rights on behalf of their customers at the annual shareholder meeting. While some authors argue that the involvement of universal banks in the firm's governance structure (at least regarding their role as large shareholders) is value-enhancing (cf. Gorton and Schmid (2000)), others are more critical with respect to the ubiquitous influence of German universal banks on industrial firms' decision making (cf. Wenger and Kaserer (1998) and Dittmann et al. (2010)). Especially, Dittmann et al. (2010) provide recent evidence that banks' shareholdings in industrial firms have dramatically decreased over time and that bankers on the supervisory boards of industrial firms rather destroy than create value. Moreover, they argue that the bankers use their supervisory board membership to promote their own business rather than to engage in the monitoring of the management.

The institutional setting of a country and its level of shareholder and creditor protection play an important role in corporate policy decision making. Since most empirical studies on corporate policy decision focused on economies with comparable high levels of investor protection (cf. chapter 3), an analysis for Germany may provide new insights in this context. According to the "law and finance" literature, the institutional setting (such as legal origin, level of investor protection, legal enforcement, level of economic and financial development, corporate ownership patterns etc.) is a major determinant for corporate policy choices (cf. La Porta et al. (1998), La Porta et al. (1999) and La Porta et al. (2000b)).

Especially the firms' capital structure choices are largely influenced by the institutional setting of the country. Hence, it is not surprising that pioneering international evidence on country-specific factors affecting capital structure by Rajan and Zingales (1995) has recently been complemented by several studies. Demirgüç-Kunt and Maksimovic (1999) argue that institutional differences between developing and developed economies (such as the development stage of the stock market and the banking system, the existence of government subsidies and underlying legal infrastructure) explain a large proportion of financing patterns. Several other recent studies have indicated that even within developed

economies like the U.S. or Western European countries institutional factors affect financing patterns and corporate policies. Moreover, cross-sectional firm-specific determinants of capital structure vary by country (cf. Brounen et al. (2006), Fan et al. (2005) and De Jong et al. (2008)). Just recently, Antoniou et al. (2008) examine differences in capital structure between market-based economies (the U.K. and the U.S.) and bank-based economies (France, Germany and Japan) while simultaneously controlling for firm-specific factors. The following firm-specific factors are important for capital structure choices independent from the financial orientation of the company: firm size and the tangibility of assets positively affect firm leverage, while increases in profitability, growth options and share price performance decreases firm leverage. Nevertheless, the findings of Antoniou et al. (2008) confirm that (i) the lessons learned from the experience of a particular type of economy cannot necessarily be generalized to firms operating in other types of economies and (ii) in deciding on a firm's financing mix, managers need to consider not only firm-specific factors but also general market conditions. They conclude that ...

> "... the capital structure of a firm is heavily influenced by the economic environment and its institutions, corporate governance practices, tax systems, the borrower-lender relation, exposure to capital markets, and the level of investor protection in the country in which the firm operates."[36]

Such a conclusion further motivates an empirical study of capital structure decisions of family firms that focuses on a bank-based economy rather than a market-based economy.

In terms of diversification decisions, the institutional setting may also play an important role. For example, Lins and Servaes (1999) analyze the value effect of diversification in the U.K., Germany and Japan. They document a significant diversification discount in the U.K. (15%) and Japan (10%), but find no significant diversification discount for Germany. Fauver et al. (2003) find no negative value effects of diversification in countries with less developed and internationally separated capital markets. However, the opposite is true for more developed capital markets. Again, this further motivates a comparison of diversification decisions between family and non-family firms for Germany, mainly because all prior studies focused on the U.S. capital market. A more detailed discussion of the value effects of diversification and literature on diversification decisions in family firms is

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[36]Antoniou et al. (2008), p. 59.

provided in section 3.3.3.

For corporate payout policy, La Porta et al. (2000a) highlight the importance of the institutional setting. They show that dividend payments are increasing in investor protection and decreasing in agency costs. They use the cross-country heterogeneity in terms of agency costs associated with the institutional setting for an international study on dividend policy of more than 4,000 firms from 33 countries. They argue that agency costs can influence dividend decisions in two ways: minority shareholders might "pressure" corporate insiders to distribute cash (outcome model) or firms might pay dividends in order to favor future investors in the event of seasoned equity issues (substitute model). They conclude that in line with the "outcome model of dividends" firms in countries with better investor protection pay higher dividends. Moreover, in such countries investors are willing to wait for their dividends along the life-cycle of firms as indicated by the fact that high growth firms pay lower dividends than low growth firms.

Furthermore, two studies provide recent evidence on differences in payout policy throughout several developed economies: Denis and Osobov (2008) examine the likelihood to pay dividends in a set of six developed economies between 1989 and 2002 (in particular they analyze the United States, Canada, the United Kingdom, Germany, France and Japan). They find cross-country evidence for the Fama and French (2001) observation that the propensity to pay dividends is positively related to firm size and profitability but negatively to growth options. Moreover, they show that the earned/contributed capital mix has high explanatory power for dividend policy as proposed by DeAngelo et al. (2006). In contradiction to the U.S. evidence by Fama and French (2001), Denis and Osobov (2008) find no indication that dividend payments declined outside the U.S. A more detailed review of literature on payout policy in provided in section 3.3.2.

Closely related to the comparatively low level of investor protection, ownership concentration in listed German firms is relatively high. Furthermore, family firms are very common in the German capital market (cf. La Porta et al. (1999), Faccio and Lang (2002) and Franks et al. (2009)). Even more, family firms are often seen as the backbone of the German economy (cf. Fohlin (2007)).[37] My own data for Germany, ranging from 1995 to 2006, supports this view: From the 5,135 firm-year observations in the sample, 2,410 are

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[37]A more detailed discussion of ownership concentration in provided in chapter 3.1.

family firms. A detailed description of my dataset and the sample composition is provided in section 5.1.

This commonness of family firms - and the institutional differences of Germany compared to other countries - provides a promising starting point for an empirical investigation of differences in corporate policy decisions between family firms and their non-family counterparts.

2.3.2 The three "organs" of a firm

The German legislation on publicly traded firms distinguishes between three organs of a firm: The annual shareholders' meeting ("Hauptversammlung"), the supervisory board ("Aufsichtsrat") and the management board ("Vorstand"). These organs are regulated by the German stock corporation act ("Aktiengesetz", AktG).

The **annual shareholders' meeting** takes place once in a year. All shareholders of the firm have the right to participate in the meeting. Beneath the annual shareholders' meeting, an extraordinary shareholders' meeting can be convoked if special reasons, e.g. mergers or acquisitions, make this necessary. During the annual shareholders' meeting important decisions for the firm are made. Most decisions are made with a simple (50%) majority of all attendant shareholders. Although formally this simple majority of voting rights is necessary, the de facto majority is even below 50%, considering the traditionally comparative low representation of voting capital at annual shareholders' meetings in Germany indicated by previous case study research (c.f. Baums and Fraune (1995)). Among the decisions made by the annual shareholders' meeting are changes in the firm's constitution, the choice of an auditor and the payout of the firm's earnings (§119 AktG). Furthermore, the annual shareholders' meeting has the right to disburden the management and supervisory board members (§120 AktG) and elects the shareholder representatives in the firm's supervisory board (§119 AktG).

Germany is classified by a two-tier corporate governance structure with the **management board** being responsible for the management decisions concerning the daily business. Contrary to that, the **supervisory board** has to monitor (§111 AktG) and appoint (§84 AktG) the management board. Hence, the German management and supervisory split

the functions of the "board of directors"[38], which is used for firm management in a one-tier board system, which is common for example in Anglo-Saxon countries. The board of directors consists of executive and non-executive directors, where the role of executive directors can be compared to that of members of the management board in a two-tier board system. Non-executive directors have some similarities with members of the supervisory board.

The management board is appointed by the supervisory board for a tenure of at most five years (§76 AktG). However, a reappointment after five years is not forbidden. The main task of members of the management board is the running of the firm. Furthermore, they have to inform the supervisory board on important developments concerning the firm and they are responsible for a proper accounting (§91 AktG) as well as for creating the firm's annual report (§170 AktG). For certain decisions, the management board even needs the approval of the supervisory board (cf. Gerum et al. (1988)). The management board manages the firm in its own responsibility (§76 AktG). A common interpretation of the German stock corporate act (AktG) is that the management board is expected to consider the interests of all stakeholders of the firm for their decisions, not only those of the shareholders (cf. Schmidt and Terberger (1997)).

The supervisory board itself is composed of shareholder representatives, elected by the annual shareholders meeting, and additional employee representatives (§96 AktG). One peculiarity of the German system is that the size of the supervisory board is largely regulated by law[39] and that legal requirements determine if and how many employee representatives must be present in the supervisory board (so called "codetermination" or "Mitbestimmung"). In the case of a stock corporation ("Aktiengesellschaft"), the supervisory board normally consists of an equal number of employee and shareholder representatives. Hence, the power of employees is much higher in the German environment than it is, for example, in the U.S.

Since some years, there exists a possibility to avoid a two tier board structure for German companies. In 2004, the German parliament passed the "Gesetz zur Einführung der Europäischen Gesellschaft", which came into effect on 29. December 2004. This law reg-

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[38]Other names sometimes used are board of trustees, board of governors, board of managers or executive board.

[39]Thereby, the minimum number of members of the supervisory board is in general three (§95 AktG).

ulates the possibility to found a "Societas Europaea", a European company, in Germany. In those firms a two-tier board is not obligatory. However, the first "Societas Europaea" in Germany founded was MAN Diesel, an affiliate of MAN AG, in August 2006. Hence, my sample ranting from 1995 to 2006 does not include those kinds of firms..

A detailed description of all legal regulations in the context of the German two-tier board system is beyond the scope of this dissertation. Even more, the legal details of this system are not of any special relevance for my empirical analysis of corporate policy decisions in German family firms.[40]

2.3.3 Accounting requirements

Accounting is of huge importance for all empirical studies working with data based on the firms' financial reports. Since accounting defines the framework in which firms can adapt their reporting, e.g. in terms of scope or timing, data from different accounting systems have to be compared with caution.

In this context, it has to be stated that Germany underwent a major accounting reform during the sample period of this dissertation, i.e. 1995 to 2006. All companies had to report according to the rules defined by German-GAAP (so called "Handelsgesetzbuch" (HGB)) before 1998.[41] However, in 1998 the capital raising facilitating act ("Kapitalaufnahmeerleichterungsgesetz", KapAEG) was introduced and allowed listed holding companies to apply international accounting standards, i.e. US-GAAP or IAS/IFRS, for their annual consolidated financial statements ("Konzernabschluss"). Simultaneously they face no necessity to prepare additional annual consolidated financial statement in German-GAAP if they apply IFRS or US-GAAP. From 2005 onwards, the application of IAS/IFRS became mandatory for annual consolidated financial statements of listed holding companies. EU regulation number 1606/2002 defines that the application of IAS/IFRS is mandatory for the consolidated financial statement of all holding companies which are regulated by the law of a member state of the European Union and which have commercial papers that are allowed for trading at any regulated capital market within the European Union.[42]

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[40]Among others, Gorton and Schmid (2004) or Fauver and Fuerst (2006) provide a detailed description of the German two-tier corporate governance structure.

[41]Cf. for example Harris et al. (1994) for a detailed overview of German-GAAP.

[42]For companies which applied other international reporting standards, i.e. US-GAAP, the application

Günther et al. (2009) give an overview on firms that changed their accounting system voluntary ("voluntary adopters") and those which waited until the application of international accounting standards became mandatory ("mandatory adopters"). Their analysis shows that the moment of the change of the accounting system is very heterogeneous for firms listed in the German CDAX index.

Consequently, the sample period 1995 to 2006 is characterized by a heterogeneity in terms of accounting standards (i.e. German-GAAP, IAS/IFRS and US-GAAP). Hence, the main differences between these accounting standards that are of relevance for my empirical analysis are summarized in the following.[43]

In general, the main difference between German-GAAP on the one hand and IAS/IFRS and US-GAAP on the other is that the latter are classified as "true and fair view" accounting systems, whereas German-GAAP is based on the prudence principle ("Vorsichtsprinzip"). The main intention of the regulator for the mandatory application of international accounting standards was an increase in transparency and accounting quality.[44] However, the question if the application of international accounting standards in Germany increased transparency or accounting quality is ambiguous. Kaserer and Klingler (2008) and Gegenfurtner et al. (2009) use the "accrual anomaly"[45] to demonstrate that the mispricing of non-cash earnings components was increased after the introduction of international accounting standards in Germany. Hence, "true and fair view" accounting does not necessarily lead to an increase in accounting quality.

However, the different underlying principles ("true and fair view" versus "prudence") may lead to accounting differences that are relevant for my empirical analysis. Especially in the context of capital structure research, accounting differences may bias the firm's "true" leverage ratio. While the German-GAAP favors a under-estimation of equity and an

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of IAS/IFRS became mandatory from 2007 onwards. While the annual consolidated financial statement must fulfill the requirements of IAS/IFRS, the annual financial statement ("Einzelabschluss") is still regulated by national German law, i.e. German-GAAP. However, several reforms, e.g. the "Bilanzrechtsmodernisierungsgesetz" (BilMoG) which becomes mandatory from 2010 onwards, lead to adjustment to international accounting standards and to a modernization of the German-GAAP. A detailed overview on the introduction of international accounting standards in Germany is provided by Pellens et al. (2009).

[43]A detailed overview on all differences between these accounting standards is beyond the scope of this dissertation. Cf. Hayn and Waldersee (2008) for an excellent comparison of German-GAAP, IAS/IFRS and US-GAAP.

[44]For a discussion of different aspects of accounting quality, cf. Wagenhofer and Dücker (2007) and Ballwieser (2008).

[45]Cf. Sloan (1996) for a description of the accrual anomaly.

over-estimation of debt in a situation where the true value is not known, international accounting standards demand that the most likely value has to be used. Hence, the leverage ratio may be overestimated by German-GAAP compared to international accounting standards. To account for this possible problem, the accounting standard is used as control variable in all regressions dealing with capital structures (cf. section 4.3.1). Furthermore, the accounting standard can influence the accuracy of data on firm diversification ("Segmentberichterstattung") or payout policy. Hence, it is necessary to control for accounting standard in these regressions as well.

2.3.4 Payout regulation and taxation

This section summarizes relevant aspects of payout regulation and taxation in the German institutional environment.[46] Thereby, the payout to shareholders is determined in the following way: The management board announces a proposal for the distribution of net income (including dividends and share repurchases), which has to be presented to the supervisory board and approved by the annual shareholder meeting (§170 and §174 AktG). It is important to mention that the sample period from 1995 through 2006 used for the empirical analysis of my dissertation is characterized by a huge heterogeneity in terms of the legal environment. The aspects of this heterogeneity which are of importance for the empirical analysis of payout policy can be summarized as follows:

First, there is huge heterogeneity in terms of accounting standards, as explained in the last section. The annual net income - which is the basis for any profit distribution decision by the annual shareholder meeting - is under substantial managerial discretion due to earnings management practices. This is especially important if financial statements are prepared under Germany's conservative accounting system. The principle of prudence encourages conservative asset valuation. For example, the "imparity principle" demands to record unrealized losses but not unrealized gains. Moreover, management may have incentives to reduce reported earnings in order to avoid shareholder pressure for higher payouts.

Second, management and supervisory board jointly can decide to retain up to 50% of

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[46]The following section is partly based on Schmid et al. (2010).

the annual net income without consulting the shareholders. In addition, the articles of association can even further allow for an increase of this legally determined 50%-proportion as long as the balance sheet position "other retained earnings" is less than half of the firm's equity (§58 para. 2 AktG). Hence, the decision about corporate payout policy is influenced by several corporate governance institutions: management board, supervisory board and the annual shareholders' meeting.

Third, there are strong legal limitations in the use of share repurchases as payout policy instrument. Share repurchases have only been possible under special circumstances (§71 AktG) in Germany before 1998, for example in order to offer repurchased stock to employees or to avoid any serious damage to the company. This strong legal restriction was abandoned in 1998 with the law on transparency and control ("Gesetz zur Kontrolle und Transparenz im Unternehmensbereich", KonTraG). This law enabled listed firms to buy back their own shares up to a limit of 10% of outstanding ordinary share capital. Hence, share repurchases in Germany have rarely occurred before 1998 and are still treated restrictively in comparison to other countries. Besides the legal restrictions, there are some other obstacles to share repurchases that have to be considered, at least if compared to other countries with more developed capital markets. In Germany, seasoned equity offerings require time-consuming shareholders' meetings approval and mandatory rights issues. Hence, beyond the legal restrictions the difficulties to issue new equity might make management more reluctant to buy back shares in Germany if compared for example to Anglo-Saxon countries.

Fourth, several studies argue that shareholders' tax considerations influence corporate payout decisions (cf. Lie and Lie (1999), Perez-Gonzalez (2002), Hsieh and Wang (2008), Barclay et al. (2009)). Against this background, Germany is an interesting case since it underwent a major amendment of its tax code in 2000. The new tax code became effective in 2001 and changed the tax system with regard to equity income from a full imputation system to a shareholder relief system. To consider this regulatory change, I calculate zero distribution profits (cf. section 4.3.2) as basis for the payout ratio and test for the impact of tax effects in the robustness section. In principal, equity income in Germany is subject to corporate and personal taxes. Before 2001, Germany is characterized by an imputation system for the taxation of dividends ("Vollanrechnungsverfahren"). According

to this system, retained earnings were taxed at a higher rate than earnings distributed as dividends at the corporate level. Hence, corporate tax liabilities are subject to dividend distributions.

After the tax reform in 2001 ("Gesetz zur Senkung der Steuersätze und zur Reform der Unternehmensbesteuerung") the taxation system in Germany changed from a full imputation system to a shareholder relief system.[47] Under this new system, retained and distributed earnings are no longer taxed at different rates. Capital gains of individual investors were in general tax-exempt if (i) shares were held more than one year and (ii) the shareholder is not a qualified shareholder, i.e. he owned less than 1% in the firm during the last five years.[48] However, since founding-families (and other controlling shareholders) are usually large, qualified shareholders, the tax-exemption of capital gains does not apply to them. Hence, all equity income generated by family shareholders (dividends and capital gains) under the shareholder relief system were taxed at half of the personal tax rate starting in 2002 (so called "Halbeinkünfteverfahren").[49] Hence, assuming the marginal tax rate, a family shareholder had to pay is between 0.21 Euro (in 2005) and 0.235 Euro (in 2002) taxes for one Euro dividend and capital gain after the tax reform.

Overall, before 2001 family shareholders should have preferred capital gains over dividends if they simply wanted to maximize their private wealth. However, if they wanted to realize capital gains (and generate income), they were forced to sell shares and hence dilute their ownership stake. After the tax reform, family shareholders are expected to be indifferent concerning the payout vehicle from a tax point of view.[50] Eggert and Weichenrieder (2002) argue that in general the 2001 tax reform does not change any priority of financing

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[47]This change from an imputation to a shareholder relief taxation system is related to the fact that under the full imputation system domestic and foreign shareholders have been treated differently. Using the corporate tax as an imputation for the personal tax liability was only possible for dividends paid by domestic companies to domestic shareholders. An important decision by the European court of justice (ECJ as of 9.7.2006, C 319-02) confirmed that such a differential taxation depending on the national status of the company and the taxpayer is contrary to European law and the principle of free-capital movement. As a consequence, full imputation systems have been abolished in several European countries.

[48]Cf. for the speculative period of one year §22 para. 2 in connection with §23 para. 1 EstG and for the 1%-tax threshold §17 para. 1 EstG. The tax-exempt threshold was 25% before 1999 and 10% in 1999 and 2000. From 2001 on it was 1%.

[49]See for the taxation of dividends §3 para. 40 EStG and for the taxation of capital gains §17 para. 1 EstG. Eggert and Weichenrieder (2002) provide a similar description of the tax code reform in Germany.

[50]Of course, there is one advantage of share repurchases that is independent of tax treatment. Investors can decide upon when to realize capital gains. Hence, in contrast to tax payments on dividends, tax payments on capital gains can be postponed.

policy from a tax point of view. They further demonstrate that for major shareholders beyond the 1%-stake it is more advantageous to retain earnings for dividend distribution and simultaneously raise new equity to finance internal NPV-positive investment projects ("Schütt-aus-hol-zurück-Politik"). However, such a policy is not attractive for family shareholders to generate income, since they either have to fear a loss of control with the new equity issue or receive no income if they use the payout to participate in the new equity issue. Hence, I argue that the tax reform should not affect family shareholders preferences for either dividends or share repurchases. Furthermore, survey evidence by Pellens and Schremper (2000) among top executives suggests that tax arguments are not imperative for payout policy decisions in German listed firms.[51]

[51]In general, see Goergen et al. (2005) and Andres et al. (2008) for a similar description of the institutional environment for payout policy in Germany.

3 Literature review

This chapter gives an overview on the literature related to family firms. For this, I focus on empirical results, but provide some insights in the related theoretical literature as well. Since literature on corporate governance in general and on family firms in particular has started to grow rapidly over the last decade, this chapter does not make the claim to be complete.

First, I summarize the oldest strand of literature on family firms showing that the separation of ownership and control, as postulated by Berle and Means (1932), does not hold true for most modern corporations. Contrary, family firms with concentrated ownership structures are still the predominant form of corporations in most countries, especially in those with less developed capital markets. Even in the U.S. with its highly developed capital markets, family firms are an important phenomenon.

Second, the literature on family firms and firm performance is summarized. For this, I provide insights into literature dealing with performance differences between family firms and non-family firms as well as the role of succession decisions in family firms and the influence of discrepancies between family ownership and control.

Third, emphasis is put on family firms and firm behavior, which is the focus of this dissertation. Thereby, I provide a comprehensive overview of empirical literature on family firms and capital structure decisions, payout policy and business segment and geographical diversification.

It should be noted that the definition of a family firm is not consistent over all papers presented below.[1] However, due to reasons of simplicity, I will not indicate the exact

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[1]Section 2.1.1 presents an overview on different definitions used in the empirical literature on family firms.

definition of a family firm for each paper. An overview of relevant definitions for this thesis is given in section 2.1.1 (Table 2.1 on page 9 summarizes the definitions). Furthermore, I will not consider papers on insider ownership since this concept is not the focus of this dissertation, as explained in section 2.1.2.

3.1 Berle-Means and beyond

The attorney Adolf A. Berle and the economic historian Gardiner C. Means published their seminal book "The modern cooperation and private property" in 1932 and thereby originated a new thinking about corporations in particular and the whole economy in general. In their book, they identify a radical change of the corporate landscape, which they express as follows:

> "The dissolution of the atom of property destroys the very foundation on which the economic order of the past three centuries has rested. Private enterprise, which has molded economic life since the close of the middle ages, has been rooted in the institution of private property."[2]

Their main topic, the separation of ownership and control, has been the focus of a generation of researchers in the field of economics who have dealt with its consequences and possible solutions for the problems of this new type of economy. One of the most influential and widespread theories that built on the view of Berle and Means (1932) is probably agency theory, which was first formally described by Jensen and Meckling (1976). However, the crucial assumption of this theory was already expressed by Berle and Means (1932):

> "It has been assumed that, if the individual is protected in the right both to use his own property as he sees fit and to receive the full fruits of its use, his desire for personal gain, for profits, can be relied upon as an effective incentive to his efficient use of any industrial property he may possess. In this quasi-public corporation, such an assumption no longer holds. [...] Those in control of that wealth, and therefore in a position to secure industrial efficiency and

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[2]Berle and Means (1932), p. 8.

produce profits, are no longer, as owners, entitled to the bulk of such profits."[3]

However, in the late 1970s and early 1980s, first doubts arised if the description of corporations as presented by Berle and Means (1932) was still accurate. Among the first who cast doubt on the Berle and Means (1932) view was Eisenberg (1976). He shows that even among many of the largest U.S. companies, there is at least some degree of ownership concentration. He states this as:

> "Finally, there is substantial data showing the presence of a significant degree of concentration of shareholdings even where one would least expect it - among the very largest of the very largest. [...] the data also shows that in many if not in the most of these corporations a substantial percentage of the stock is held by a relatively small number of shareholders."[4]

Following Eisenberg (1976), Demsetz (1983) and Demsetz and Lehn (1985) show that ownership concentration is not uncommon for U.S. firms. Demsetz and Lehn (1985) argue that the ownership structure of a firm varies systematically in a way consistent with firm value maximization. They show that ownership concentration depends on firm size, instability of profit rates, firm regulation, whether the firm is a financial institution and whether the firm is in the mass media or the sports industry. Interestingly, they find no relation between ownership concentration and firm (accounting) profitability, as hypothesized by Berle and Means (1932). Later, Shleifer and Vishny (1986) develop a theoretical framework in which large shareholders can overcome the free-rider problem of monitoring. In their analysis, they present evidence that large minority shareholders with at least 5% ownership are present in 354 out of 456 Fortune-500 firms in their sample. Furthermore, the average ownership stake of the largest shareholder in their sample is 15.4%. In 149 of the 354 cases, the large shareholder is a family which is simultaneously representend in the board of directors. This figures are stunning since Shleifer and Vishny (1986) only analyze the largest U.S. companies. Consequently, the authors hypothesize that ownership concentration and the presence of large shareholders is even more widespread among smaller firms. Similar evidence for ownership concentration is provided by Morck et al. (1988) and Holderness and Sheehan (1988).

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[3]Berle and Means (1932), p. 9.
[4]Eisenberg (1976), p. 45.

In an empirical study examining the historic development of managerial stock ownership, Holderness et al. (1999) demonstrate that the average ownership of officers and directors is higher in 1995 than it was in 1935. It rose from 13% to 21% in their comparision covering about 1,500 publicly traded firms in 1935 and over 4,200 in 1995. Even a firm size weighted comparison leads to similar results. The authors speculate that lower volatility and better hedging instruments are the main reasons for the increase in managerial stock ownership.

Beneath empirical evidence for the U.S. capital market which is clearly in favor of (at least some) ownership concentration, several studies have been conducted for less developed capital markets like Germany, Japan, Italy or East Asian countries.

For Germany, Edwards and Fischer (1994) document that ownership concentration is very high. For domestic listed companies above a certain size, they report that 84.8% have a largest shareholder with at least 25% stock ownership in 1963. In 1983, the fraction of these companies even increased to 88.4%. Hence, they conclude that the large majority of listed German firms has a single shareholder which owns a significant fraction of the firm's voting capital. Later, Gorton and Schmid (2000) show that ownership concentration in Germany is substantial and that bank equity ownership is very common. They analyze a sample of 283 publicly traded firms in 1975 and of 280 firms in 1986. The results of Franks and Mayer (2001) are in favor of high ownership concentration in Germany as well. Furthermore, they show that these high levels of concentration are often associated with holdings in hands of families or other corporations. They analyze two samples, the first covering 171 German listed firms in 1990 and the second 75 companies during 1989 and 1994. For Japan, Prowse (1992) and Berglöf and Perotti (1994) document high levels of ownership concentration, with financial institutions as the most important large shareholders. The importance of family controlled firms for the Canadian capital market is shown by Morck et al. (1988).

In a large cross-country study, La Porta et al. (1998) find that ownership concentration is negatively related to investor protection and very common in most countries. In this context, they analyze the direct cashflow ownership of the ten largest companies in each country. Investor protection is found to be highest in common-law countries and lowest in French-civil-law countries, with German- and Scandinavian-civil-law countries located in the middle. They conclude that the failure to protect small diversified shareholders

detains them from investing in these countries. Shortly after this study, La Porta et al. (1999) analyze the ownership structures of large corporations in 27 wealthy economies. In this study, they do not only analyze direct, but ultimate ownership to identify the ultimate controlling shareholders of each firm. Similar to La Porta et al. (1998), they find that most firms have controlling shareholders. The only countries in which widely held firms play an important role are those with very good shareholder protection, like e.g. the U.S. or the U.K. However, even in these countries, concentrated ownership structures are not uncommon, at least for medium-sized firms. Furthermore, La Porta et al. (1999) document the importance of families as large shareholder, especially in countries with poor investor protection:

> "As we look outside the United States, particularly at countries with poor investor protection, even the largest firms tend to have controlling shareholders. Sometimes the shareholder is the State; but more often it is a family, usually the founder of the firm or his descendants."[5]

Similar evidence is provided by Claessens et al. (2000) who analyze ownership structures for 2,980 East Asian firms. They find that more than two-thirds of these firms are controlled by one single shareholder and that managers are often related to these controlling shareholders. Even more, a significant part of the equity value of these firms lies in the hands of few very rich families. By examining ownership structures for 5,232 firms from 13 Western European countries, Faccio and Lang (2002) find that widely held firms are only relevant in the U.K. and - to a smaller extend - in Ireland. Consistent with La Porta et al. (1999), they also document that the most common type of a controlling shareholder is a family (44.29% of their sample firms are family controlled, whereas 36.93% are widely held). Franks et al. (2008) and Bennedsen and Nielsen (2010) provide recent evidence on the huge importance of family ownership and control, especially in Central Europe.

Hence, studies on corporate ownership structures outside the U.S. clearly show that the Berle and Means (1932) view is in contrast to the ownership structures found in most countries. Furthermore, especially family controlled firms are a common phenomenon in many countries.

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[5]La Porta et al. (1999), p. 511.

More recent studies for the U.S. capital market which do not explicitly focus on the description of ownership structures show that family control is important even for the highest developed capital market with strong investor protection. For example, Anderson and Reeb (2003a) document that families are present in one-third of all S&P 500 companies and account for 18% of all outstanding equity. For the Fortune-500 index, Villalonga and Amit (2006) find that family firms represent 37% of all firms. Further studies underlining the importance of family control for the U.S. capital market are, for example, Villalonga and Amit (2009) and Villalonga and Amit (2010)[6].

To summarize, the separation of ownership and control, as proclaimed by Berle and Means (1932), is not an accurate description for most - if not for all - countries. Concentrated ownership structures and management involvement of large shareholders are a widespread phenomenon. Often, the large shareholders are the families of the founders or even the founders themselves. While widely held firms are of importance for capital markets with high levels of investor protection, like the U.S. or the U.K., family firms are the predominant organizational form in most other countries, including Central Europe. Hence, the question arises why this organizational form is so common in most countries. One potential explanation would be that family firms are superior to other forms of firms in terms of corporate performance and firm valuation. Literature on this topic is discussed in the next section.

3.2 Family firms and performance

The following section summarizes the literature on family firms and firm performance. After the finding that family firms are an important - and in some countries even the predominant - type of firm, this was the first strand of literature that emerged on family firms. After starting with some theoretical considerations, I provide an overview on the empirical literature and conclude with a short summary of the results.

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[6]They even show that entire industries are dominated by family firms. For example, six out of the seven largest cable system operators in the U.S. are family firms.

3.2.1 Theoretical considerations

From an theoretical point of view, it is a priori not clear whether family firms perform better, worse or equal compared to non-family firms. The following section briefly summarizes theoretical arguments discussed in the literature for and against a superior performance of family firms.

There are good reasons to believe that family firms **are superior performers** compared to non-family firms. *First*, as Shleifer and Vishny (1986) show in their theoretical model, the presence of a large shareholder may overcome the free-rider problem of monitoring. Hence, the presence of such a shareholder may lead to a less sever conflict between shareholders and managers (agency conflict I, cf. section 2.2.2), especially if the shareholder is the founding family since they are often represented in the firm's management as well.

Second, founding family shareholders often maintain their presence in the firm over a long time, especially if they pass their firm to the next generation. Hence, their investment horizon may be longer compared to other types of shareholders. As pointed out by Stein (1988) and Stein (1989), firms with a longer investment horizon show less managerial myopia and are less likely to maximize short term earnings at the cost of long term success. Similar arguments are provided by James (1999), Chami (1999) and Casson (1999). Furthermore, the fact that families often play an important role in the firm over several generations may increase the firm's business reputation and ease the cooperation with external stakeholders. For example, Anderson et al. (2003) can demonstrate that family firms pay lower interest rates on their debt compared to non-family firms (cf. section 2.2.4). Consequently, the authors hypothesize that family firms have incentive structures which lower conflicts between equity and debt providers.

Third, family managers may perform better since they have higher non-monetary incentives compared to hired managers, as argued by Davis et al. (1997). Beneath their personal satisfaction from firm success, other factors may lead to a over-performance of family managers as well. Kandel and Lazear (1992) argue that family peer pressure, shame and guilt are important factors in this context. Furthermore, as pointed out by Donnelley (1964), family managers may possess firm-specific knowledge that is hard to obtain for external managers, especially if they founded the company.

On the other hand, there are arguments **against a superior performance** of family firms. *First*, the conflict between majority and minority shareholders (agency conflict II, cf. section 2.2.3) may be more pronounced if there exists a large shareholder. This large shareholder often has incentives to extract private benefits of control, at the cost of small minority shareholders. If the large shareholder is a family, the incentives for extraction of private benefits of control may be even larger than, for example, for an institutional investor. The rationale behind this is that an institutional investor like a pension fund or an insurance company is owned by many individuals. Consequently, any private benefit is diluted among multiple owners. If the large owner is a family, they can directly profit from a private benefit of control (cf. Villalonga and Amit (2006)). For example, Fama and Jensen (1985) show that large undiversified shareholders may employ different investment valuation rules than diversified shareholders which are assumed to maximize the value of the firm's cashflows to equity.

Second, there may be a disadvantageous effect of tensions between family and firm objectives. In the organizational and management literature, several conflicts including the decisions on management positions or executive pay are discussed (cf. Kepner (1983), Levinson (1971), Barnes and Hershon (1976)). For example, Lansberg (1983) shows that relatives of the founder are often underpaid, what creates a huge potential for conflicts if the firm becomes more mature. Furthermore, Lansberg (1988) points out that these tensions are especially pronounced in the context of succession decisions within the firm.

Third, family firms may suffer from the fact that their managers are often chosen from a small pool of candidates, namely family members. Hence, not managerial talent, but relativeness to the family behind the firm is used as a criteria for the selection, leading to an ineffective choice of managers (cf. Lansberg (1983), Bertrand and Schoar (2006) or Perez-Gonzalez (2006)). Lansberg (1983) describes the problem that founding families frequently have:

> "Typically, relatives feel entitled to "claim their share" of the family business; they flock to the firm demanding jobs and opportunities regardless of their competence."[7]

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[7]Lansberg (1983), p. 41.

In a similar manner, Shleifer and Vishny (1989) and Shleifer and Vishny (1997) argue that managers who are no (longer) qualified to run the firm but resist to give up there positions are one of the most important forms of shareholder expropriation. Jensen and Ruback (1983) even argue that this form of entrenchment is the most expensive manifestation of the agency problem for shareholders.

Hence, the question if family firms are superior performers is not unambiguous from a theoretical point of view. The following section outlines the most important empirical results found so far in this context.

3.2.2 Empirical results for family firms and firm performance

One of the first empirical studies on that topic was performed by Johnson et al. (1985) who analyze stock price reactions to the sudden death of a firm's senior executive. By evaluating 53 events in their U.S. sample from 1971 to 1982, they find abnormal positive stock market returns if the senior executive who died was the company's founder. Hence, their result suggests that there is a capital market discount for firms in which the founder is still the CEO. However, a similar study by Slovin and Sushka (1993) finds that the death of a founder manager has no significant impact on the capital market reaction, compared to the death of other firm insiders. They analyzed a U.S. sample ranging from 1973 to 1989 and were able to identify 69 events. Hence, the stock price reaction on the sudden death of a company's founder is not unambiguous. Especially, the number of events in both studies is rather small, what could lead to biased or insignificant results depending on the analyzed period of time.

Morck et al. (1988) analyze differences between family firms and non-family firms in terms of market valuation using a one-period (1980) sample of 371 Fortune-500 firms. They find that Tobin's q was typically lower when the founder of a firm was still involved in top-management. However, their result only holds true for older firms with a firm age of at least 30 years. The authors speculate that the founders might have an important leadership role in young firms, which becomes less important or even counterproductive as the firm gets more mature. Similar results as by Morck et al. (1988) are obtained by Yermack (1996) who analyzes a dataset of 452 large U.S. firms in the 1984 to 1991 period.

He finds that firms which are controlled by the founding family have a lower firm value compared to widely held firms. However, the main focus of his study lies on the question whether board size affects firm value. Hence, he does not analyze the value implication of founding family control very precisely.

Contrary to Yermack (1996), Holderness and Sheehan (1988) and partly Morck et al. (1988), McConaughy et al. (1998) find that founding family controlled firms are both more efficient and valuable than other firms during the 1986 to 1989 period. In this context, their study can be considered the first empirical analysis which clearly focuses on the value effect of founding family control and shows positive founding family effects. Therefore, they define founding family controlled firms as those firms which have a CEO who is either the company's founder or a descendant of the founder and are able to identify 219 companies in their sample which fulfill this condition. They analyze the market-to-book equity ratio and can show that firms controlled by the founding family trade at a premium compared to their non-family counterparts. In terms of efficiency, they analyze different variables like sales per employee or cashflow per employee and find evidence that family controlled firms are more efficient. Concerning their methodology, they apply both a matching procedure and multivariate regressions in the context of family firm research.

Anderson and Reeb (2003a) present results that are in line with those of McConaughy et al. (1998). In their study covering all S&P-500 firms as of 31.12.1992, they analyze the impact of founding family ownership on firm performance between 1992 and 1999. In general, they demonstrate that founding family firms perform better than widely held firms in terms of accounting based measures (e.g. return-on-assets) and market based measures (e.g. Tobin's q). Furthermore, they find evidence that founding family CEOs have a strong positive effect on firm performance compared to outside CEOs.

In line with Anderson and Reeb (2003a), Villalonga and Amit (2006) analyze a sample covering Fortune-500 firms during 1994 to 2000. They show that founding family ownership has a positive effect on firm performance in terms of higher values of Tobin's q. However, when they analyze the CEO effect more precisely they come up with the result that founding family ownership only generates value if the founder is still active as CEO or Chairman. Moreover, they present evidence that CEOs who are descendants of the company's founder and family control in excess of ownership (like multiple share classes,

pyramids, cross-holdings or voting agreements) even hinder performance. Consequently, they speculate that not family firms per se, but only the subgroup with a founder CEO (or chairman) are superior performers.

Miller et al. (2007) follow up the study by Villalonga and Amit (2006) and separate the performance effects of company founders and their descendants more precisely. For this purpose, they define lone founder businesses in which no relatives of a founder are involved and true family businesses in which multiple members of the founding family are involved either as owners or managers. Surprisingly, they find that only lone founder business show better performance, not real family businesses in the 1996 to 2000 period. Furthermore, Miller et al. (2007) discuss the influence of the applied sample very precisely and can show that their results for the Fortune-1000 do not hold for a randomly drawn sample of 100 smaller firms. In this alternative sample, neither lone founder nor real family businesses showed superior performance. If they define family firms in the same way as Anderson and Reeb (2003a) and Villalonga and Amit (2006), they are able to replicate their results. Consequently, the authors speculate that the superior performance of family firms is driven by lone founder firms and that the family firm definition and the sample choice are crucial for the evaluation of performance differences between family firms and their non-family counterparts.

Similar results in terms of superior founder CEO performance are reported by Adams et al. (2009). Their sample consists of Fortune-500 firms during the 1992 to 1999 period. However, they apply a more sophisticated methodology, namely an IV-regression approach. Their approach allows them to disentangle the effect of a founder CEO on firm performance from the effect of firm performance on founder CEOs and hence to overcome potential concerns of endogeneity. Indeed, they can show that the founder CEO increases performance and not vice versa. The effects obtained by the IV-regression models are even larger than those from standard OLS models. Hence, the authors demonstrate a positive, economically significant and causal effect of founder CEOs on firm performance.

In accordance with the results of Adams et al. (2009) and Villalonga and Amit (2006), Fahlenbrach (2009a) can demonstrate positive performance effects of founder CEOs as well. For this, he evaluates an investment strategy that invests in firms which are managed by a founder CEO. Thereby, he shows that this strategy would have earned a benchmark-

adjusted excess return of 8.3% per year by analyzing a sample of 2,327 large U.S. firms during the 1992 to 2002 period. Especially, he is able to show that firms with a founder CEO behave differently in terms of investment behavior. Hence, the author speculates that founder CEOs have indeed a huge impact on decisions taken by their companies and hence on firm performance.

Following the studies of Villalonga and Amit (2006), Adams et al. (2009) and Fahlenbrach (2009a), it can be concluded that founder CEOs have a positive effect on firm valuation. Furthermore, causality seems to "run from founder-CEOs to higher valuation"[8]. In terms of overall firm performance, there is so far mixed evidence in the empirical literature dealing with U.S. companies. While studies exist which find an out-performance of family firms, others do not find significant differences or even under-performance of family firms. As pointed out by Miller et al. (2007) (and by Villalonga and Amit (2006)), the definition of a family firm as well as the sample selection may influence the results substantially. Most likely, these two aspects are the rationale behind the hitherto mixed empirical results for family firms and firm performance.

Since all studies presented so far focus on the U.S., the following part of this section summarizes empirical results for family firms and firm performance for countries outside the U.S., which typically have weaker investment protection and less developed capital markets.[9]

One of the first study on family firms and firm performance outside the U.S. was performed by Morck et al. (2000) for the Canadian capital market. They find that heir-controlled firms show less industry adjusted performance. After Morck et al. (2000), Claessens et al. (2002) investigated firm performance of eight East Asian countries[10]. Their sample for 1996 consists of 1,301 companies, which represents about one third of the publicly traded companies in those countries. In a first step, they show that firm valuation in terms of the ratio of the market value of assets to the book value of assets increases with cashflow ownership hold by the largest shareholder. Furthermore, they conclude that their result

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[8]Fahlenbrach (2009a), p. 463.

[9]Of course, the U.K. is a notable exception since capital markets there exhibit similar levels of investor protection and development as in the U.S. However, to my best knowledge there are no empirical study analyzing performance differences between family firms and non-family firms for the U.K.

[10]The eight countries they investigate in their study are Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand.

is mainly driven by family cashflow ownership. Hence, they are the first to document a positive firm performance effect of family ownership outside the U.S. capital market.

Contrary to Claessens et al. (2002), an empirical study by Cronqvist and Nilsson (2003) reveals that families which are controlling minority shareholders have a negative impact on firm valuation (in terms of Tobin's q) and firm performance (in terms on return-on-assets). They use a Swedish panel dataset covering 309 firms for the 1991 to 1997 period. Furthermore, they can show that families are more likely to be controlling minority shareholders by using either dual class shares or other control enhancing instruments. However, they do not show that founding family ownership per se is associated with lower firm valuation or performance. In a study focusing on the 93 largest business families in Thailand, Bertrand et al. (2004) show that firms that are run by larger families have lower performance. Interestingly, the number of sons a family has seems to have an impact on firm performance. Furthermore, the lower performance is even pronounced if the founder of the firm is no longer active and ownership has past to a descendant.

The first large scale study for western Europe was conducted by Maury (2006). He analyzes firm performance of family firms for a sample of 1672 firms[11] in 2003 and finds that family ownership is beneficial for firm performance, but only if there is active family control[12]. For firm valuation, he finds that both active and non-active ownership lead to higher firm valuations. However, the higher valuation of family firms is mainly driven by countries with high levels of investor protection. The author speculates that family ownership may reduce the owner-manager conflict and that active family control enhances efficiency.

Similar results are found by Barontini and Caprio (2006), who analyze 675 companies from 11 Continental European countries[13] during the 1999 to 2001 period. They find that both valuation and firm performance in founder controlled firms are superior compared to non-family firms. Even if the firms are not controlled by the founder but descendants hold a controlling equity stake of the firm and sit on the board as non-executive directors,

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[11]The firms are from 13 different countries, namely Austria (46 firms), Belgium (30 firms), Finland (73 firms), France (209 firms), Germany (259 firms), Ireland (39 firms), Italy (59 firms), Norway (76 firms), Portugal (9 firms), Spain (58 firms), Sweden (104 firms), Switzerland (75 firms) and the UK (635 firms).

[12]According to his definition, active family control is present if the controlling shareholder is either a family or an individual who holds the CEO, Honorary Chairman, Chairman, or Vice Chairman position.

[13]The countries are Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Norway, Spain, Sweden and Switzerland.

there are positive performance and valuation effects. However, for firms which have a descendant of the founder as CEO, the authors find no statistically significant differences in terms of performance and valuation compared to non-family firms.

In an empirical study for the French capital market, Sraer and Thesmar (2007) demonstrate that family firms outperform widely held firms during the 1994 to 2000 period. In accordance with previous studies, they show that especially founder controlled firms have superior performance. Surprisingly and contrary to most prior studies, both for the U.S. and other capital markets, they even find that descendants of the founder who act as CEO have a positive impact on firm performance.

Andres (2008) analyzes 275 German companies between 1998 and 2004. He demonstrates that family owned firms exhibit superior performance and valuation compared to widely held firms and firms with other types of blockholders. However, this results only holds true if the founding family is either active in the management or supervisory board. The effect is most pronounced if the founder herself is still active as the firm's CEO.

Hence, it can be concluded that empirical evidence outside the U.S. is in favor of superior family firm performance. However, as already found for the U.S., the role of the family in the firm's management is of huge importance. The over-performance of family firms is especially pronounced if the founder is still involved in running the business (e.g. Maury (2006), Barontini and Caprio (2006) and Andres (2008)). The only study which documents a positive effect of a descendant CEO is Sraer and Thesmar (2007) for the French capital market, while other studies report negative or insignificant effects of a descendant CEO.

To summarize, it can be concluded that the majority of the empirical literature is in favor of a superior performance of family firms compared to non-family firms, at least if the founder herself still acts as CEO. Since this seems to be crucial, another strand of literature focused on succession decisions within family firms and their consequences for firm performance. The next subsection summarizes this literature and discusses consequences for the relation between family firms and firm performance.

3.2.3 The role of succession decisions

Several recent studies focus on the question if within-family succession - the retirement of the company's founder as CEO and the handing over of that position to a descendant of the founder - affects firm value and performance.

In this context, Perez-Gonzalez (2006) analyze the effect of a CEO transition on firm performance in 334 U.S. firms between 1980 and 2001. He finds that firm performance is hindered if the incoming CEO is related to the departing CEOs, to a founder or to a large shareholder (either by blood or marriage). For this, he compares the operational performance and the market valuation of firms in which the incoming CEO is not related to firms with a related new CEO. Interestingly, the negative effect of a within-family succession is only present if the descendant did not attend a selective undergraduate college.

A similar yet extended study in terms of sample size and methodology is performed by Bennedsen et al. (2007) for Denmark. They construct a huge sample covering publicly and privately held firms and end up with 5,334 successions between 1994 and 2002. Their results support those of Perez-Gonzalez (2006) since they find that within-family successions have a strong negative impact on firm performance. With help of an IV-approach they are able to demonstrate that this negative effect is causal and most likely underestimated by a standard OLS-approach.

Comparable results to Perez-Gonzalez (2006) and Bennedsen et al. (2007) are found by Cucculelli and Micucci (2008) for the Italian capital market. Bloom and Van Reenen (2007) offer a potential explanation for the negative performance effect of a within-family succession by showing that they often lead to bad management practices. They analyze a sample of 732 medium-sized firms in the U.S., France, Germany, and the U.K.

To summarize, there is strong evidence that within-family successions hinder firm performance, especially if selection of the new family CEO is rather based on family ties than on objective criteria (e.g. ability or experience). This is in line with the previous findings stating that family firms are superior performers mainly if the founder still acts as CEO. Hence, the insignificant or even negative performance effects for descendant run family firms may be explained by the fact that within-family successions are disadvantageous

and destroy - on average - firm value.

3.2.4 Discrepancies between family ownership and control

Another strand of literature deals with the consequences of discrepancies between ownership and control through control-enhancing devices on firm performance. These devices enable shareholders to hold higher control than cashflow rights. Common vehicles that lead to this "excess control" are deviations from the "one share one vote" principle, pyramiding and cross-holdings (cf. Faccio and Lang (2002). The commonness of these vehicles was already documented by La Porta et al. (1999) and Faccio and Lang (2002). La Porta et al. (1999) find in their study covering 27 countries that ...

> "... [t]he controlling shareholders typically have control over firms considerably
> in excess of their cash flow rights. This is so, in part, because they often control
> large firms through pyramidal structures, and in part because they manage the
> firms they control."[14]

However, they did not focus on firm value implications of these disproportions. For the question whether family firms are superior performers, discrepancies between ownership and control may be of huge importance since these are often present in firms controlled by families.[15] However, it is beyond the scope of this dissertation to summarize the whole literature on this topic. Hence, I focus on empirical studies that deal explicitly with family firms. A comprehensive and recent review on the whole literature dealing with discrepancies between family ownership and control is, for example, provided by Adams and Ferreira (2008).

Claessens et al. (2002) show that ownership concentration is beneficial for firm value, whereas a separation of cashflow and control rights has the opposite effect. Moreover, this negative effect is at least partly driven by family controlled firms. For a sample of 136 non-financial Finnish firms during 1993 to 2000, Maury and Pajuste (2005) show that an equal distribution of control and cashflow rights increases firm value and that firm value decreases if the largest shareholder holds more voting than cashflow rights. Furthermore,

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[14]La Porta et al. (1999), p. 511.

[15]Cf. for example DeAngelo and DeAngelo (1985), Amoako-Adu and Smith (2001) or, more recently, Villalonga and Amit (2009).

they confirm that this effect is strongest in family controlled firms. Interestingly, they find that firm value in family controlled firms is negatively correlated to the voting rights of a second family shareholder, whereas higher voting rights of another non-family shareholder increases firm value. Consistent with Maury and Pajuste (2005), Villalonga and Amit (2006) can show that the positive value effect of a founder CEO or Chairman is reduced if the firm uses dual class shares, pyramids or voting agreements. Just recently, Bennedsen and Nielsen (2010) analyzed the firm value effect of disproportional ownership structures for 4,096 from 14 European countries[16]. They find that firms with a disproportion between voting and cashflow rights have lower values measured as market value of assets to book value of assets. For family firms, this discount is especially pronounced (about four times larger than the average discount). Interestingly, they show that only market valuation, not operational performance is affected by disproportional ownership structures. Villalonga and Amit (2009) show that families are the only blockholders whose control rights on average exceed their cashflow rights. Consistent with prior literature, they find that this wedge has negative value implications for family firms. However, they conclude that only the excess control of founders and their families through dual class shares and over-representation in the board produces value discounts. Another study, not dealing with family firms explicitly, that should be mentioned was conducted by Gompers et al. (2010). The authors find strong evidence that firm value is increasing in cashflow rights of insiders and decreasing in their voting rights, consistent with Villalonga and Amit (2009).

Finally, it can be concluded that disproportions between voting and cashflow rights seem to matter for market valuation and hence for the question whether family firms perform better than non-family firms. Interestingly, the value discount of disproportions seems to be strongest in family firms. This finding provides empirical evidence for higher agency conflict II in family firms, leading to an expropriation of minority shareholders. Furthermore, these disproportions might provide a potential explanation for the hitherto mixed results in terms of family firms and firm performance since - if an empirical study does not control for this disproportions[17] - unequal distributions of disproportional ownership

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[16]The countries investigated in their study are Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland and the U.K.

[17]As noted by Villalonga and Amit (2009), many prior studies overlooked important aspects on the wedge between control and cashflow rights. They state this as follows: "Our wedge decomposition framework accommodates dual-class stock and pyramids, as well as two other mechanisms that have been largely overlooked in prior literature, yet which we find to be of comparable or even greater relevance to the others,

structures over time and countries could bias these results. Furthermore, disproportional ownership structures might become more common in later stages of a firms life cycle, consistent with the finding that founder controlled (and therefore rather young) firms are most likely to out-perform non-family firms.

3.2.5 Summary

Empirical literature suggests that family firms show a better performance compared to non-family firms, at least if the founder is still active in firm's management and if there is no wedge between cashflow and voting rights. Interestingly, this result does not depend on single countries and hence not on the level of investor protection and capital market development. Furthermore, several studies suggest that the critical event of a within-family succession is - on average - destroying firm value, at least if the succession decision is not based on the careful selection of a well-qualified member of the family. The main results for family firms and firm performance are briefly summarized in table 3.1.

Table 3.1: Overview of Empirical Results for Firm Performance

Author(s)	Period	Sample	Results
Family firms and firm performance in the U.S.			
Johnson et al. (1985)	1971-1982	53 events in U.S. firms	Abnormal positive stock market returns if founder senior executive dies
Slovin and Sushka (1993)	1973-1989	69 events in U.S. firms	No abnormal capital market reaction on death of founder CEO
Morck et al. (1988)	1980	371 Fortune-500 firms	Some indications for lower Tobin's q if founder is still in top management
Yermack (1996)	1984-1991	452 large U.S. firms	Family firms have a lower firm value
McConaughy et al. (1998)	1986-1989	219 U.S. family firms and matched non-family firms	Family firms are more efficient and valuable
Anderson and Reeb (2003a)	1992-1999	329 S&P-500 firms	Family firms are superior performers
Villalonga and Amit (2006)	1994-2000	508 Fortune-500 firms	Founding family ownership only generates value if the founder is still active as CEO or Chairman
Miller et al. (2007)	1996-2000	896 Fortune-1000 firms	Only *lone founder firms* perform better
Adams et al. (2009)	1992-1999	321 Fortune-500 firms	Founder CEOs increase performance

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at least in the United States: voting agreements and disproportionate board representation." (Villalonga and Amit (2009), p. 3088).

Author(s)	Period	Sample	Results
Fahlenbrach (2009*a*)	1992-2002	2,327 large U.S. firms	Positive performance effects of founder CEOs

Family firms and firm performance outside the U.S.

Author(s)	Period	Sample	Results
Morck et al. (2000)	1988	246 Canadian firms	Heir-controlled firms show less industry adjusted performance
Claessens et al. (2002)	1996	1301 firms from eight East Asian countries	Indications for a positive firm performance effect of family ownership
Cronqvist and Nilsson (2003)	1991-1997	309 Swedish firms	Families which are controlling minority shareholders have a negative impact on firm valuation
Bertrand et al. (2004)	1996	93 largest business families in Thailand	Firms that are run by larger families have lower performance
Maury (2006)	2003	1672 firms from 13 European countries	Family ownership is beneficial for firm performance, but only if there is active family control
Barontini and Caprio (2006)	1999-2001	675 firms from 11 Continental European countries	Valuation and firm performance in founder controlled firms are superior
Sraer and Thesmar (2007)	1994-2000	420 listed French firms	Founder controlled firms and professionally managed family owned firms have superior performance
Andres (2008)	1998-2004	275 listed German companies	Family owned and managed firms exhibit superior performance and valuation

The role of succession decisions

Author(s)	Period	Sample	Results
Perez-Gonzalez (2006)	1980-2001	334 U.S. firms	Firm performance is hindered if the incoming CEO is related to the departing CEOs, to a founder or to a large shareholder (either by blood or marriage)
Bennedsen et al. (2007)	1994-2002	5,334 successions in Danish firms	Within-family successions have a strong negative impact on firm performance
Cucculelli and Micucci (2008)	1994-2004	Survey answers from 3584 Italian companies	Within-family succession has negative implications for firm performance
Bloom and Van Reenen (2007)	1994-2004	732 medium-sized firms in the U.S., France, Germany, and the U.K.	Within-family successions can lead to bad management practices

Discrepancies between family ownership and control

Author(s)	Period	Sample	Results
Claessens et al. (2002)	1996	1301 firms from eight East Asian countries	Ownership concentration is beneficial for firm value, but a separation of cashflow and control rights decreases firm value, especially with family firms
Maury and Pajuste (2005)	1993-2000	136 Finnish firms	Equal distribution of control and cashflow rights increases firm value

Author(s)	Period	Sample		Results
Villalonga and Amit (2006)	1994-2000	508 firms	Fortune-500	Positive value effect of a founder CEO or Chairman is reduced if the firm uses dual class shares, pyramids or voting agreements.
Bennedsen and Nielsen (2010)	1996-1998	4,096 from 14 European countries		Disproportion between voting and cashflow rights leads to lower firm values, especially in family firms
Villalonga and Amit (2009)	1994-2000	515 firms	Fortune-500	Families are the only blockholders whose control rights exceeds on average their cashflow rights, leading to lower firm valuations.

Source: Own work

This table gives an overview on empirical results for family firm and firm performance. Please note that the results are presented in a simplified manner. A more detailed description can be found in sections 3.2.2 to 3.2.4.

Besides the huge number of empirical studies dealing with family firms and firm performance, it is rather surprising that there is comparatively little literature that addresses the question if and why family firms adapt their corporate policy. The next section summarizes the existing studies which belong to this strand of literature and focuses on capital structure, payout policy and diversification decisions.

3.3 Family firms and firm behavior

The next sections summarize the empirical literature on family firms and firm behavior in terms of capital structure, payout policy and diversification decisions. It is beyond the scope of this dissertation to summarize the whole empirical literature on every corporate policy decision. Hence, I focus on studies dealing explicitly with differences between family firms and their non-family counterparts. Furthermore, studies that are of relevance for my empirical analysis, e.g. because they focus on time patterns of corporate policy decisions, are presented as well. Furthermore, there are several other corporate policy decisions that have been analyzed for family firms. However, they are not the focus of my dissertation. Hence, I decided not to summarize these strands of literature. As argued before, this strand of literature is still rather small and young, with nearly all studies published over

the last decade.

3.3.1 Capital structure

Hitherto existing research on the question whether family firms use more or less debt than non-family firms is sparse and largely inconclusive.[18]

First, Mishra and McConaughy (1999) apply a matching methodology to isolate the effect of founding family control from managerial ownership effects. Using "The Business Week CEO 1000" list, they draw a sample of large U.S. family firms where the CEO is still either the founder or a relative of the founder. In a second step, they match these group of family firms with two different control groups of non-family firms. All three groups have similar firm characteristics in terms of firm size and industry affiliation. While one control group has diffuse ownership structures, the other one has a level of managerial ownership comparable to the family ownership in the first group. They find that family firms use a significantly lower level of debt as both control groups. Mishra and McConaughy (1999) thereby show that this difference is not driven by the level of managerial ownership, but rather by founding family peculiarities. In particular, they argue that founding families are concerned about two negative effects of debt: The increased costs of financial distress and the risk to loose control over their firms.

Second, Anderson and Reeb (2003*b*) find no evidence for a systematic difference between family and non-family firms in terms of capital structure. Using a panel data set of 2,108 S&P-500 firm-year observations between 1993 and 1999, they argue that the level of debt in U.S. industrial firms does not depend on their family firm status.

Third, a recent cross-country study by Ellul (2009) based on a sample of 3,608 firms during 1996 to 2004 (32,735 firms-year observations) from 36 different countries finds evidence for a significant positive relationship between family blockholdings and the level of leverage. The author speculates that control considerations may affect this result. Family blockholders are concerned about the loss of control associated with external equity finance. From this perspective, the author argues that debt offers a solution to receive external financing without diluting their control over the firm.

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[18]The following section is partly based on Ampenberger et al. (2009).

Fourth, Setia-Atmaja et al. (2009) analyze a panel data set consisting of 316 firm traded at the Australian Stock Exchange during the 2000 to 2005 period (1,530 firm-year observations). According to their study, the Australian capital market is characterized by both high investor protection and high private benefits of control. In line with the results of Ellul (2009), they find that family firms show significantly higher leverage ratios compared to non-family firms.

3.3.2 Payout policy

As for capital structure, empirical results for differences in terms of payout policy between family and non-family firms are largely inconclusive.[19]

First, Gugler (2003*b*) shows that Austrian family firms choose significantly lower target payout ratios. He analyzes 214 Austrian firms over the period 1991 to 1999. Furthermore, he finds that family firms do not engage in divided smoothing and are more likely to cut dividends. Interestingly, especially state controlled firms show high dividend payout ratios. He explains this result by the fact that dividends may be used to reduce conflicts between owners and managers (agency conflict I). Hence, he infers from his results that ...

> ... [t]he benefits of dividends in controlling agency problems between stockholders and managers become less the better other corporate governance mechanisms (such as stock options) align managerial and shareholder interests. Thus there is less need to "burn" cash as dividends.[20]

Second, Hu et al. (2007) analyze a U.S. dataset consisting of S&P-500 firms during the years 2000 and 2005 (2,227 firm-year observations). They find that family firms choose lower dividend payout levels compared to non-family firms, but find no differences for share repurchases. As explanation for this result they use "tax clientele theory"[21] which predicts that - from a tax point of view - dividend payouts are less attractive for family firms than capital gains. Furthermore, they find that family firms in which no member of the family is involved in the firm's management tend to have higher dividend payout

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[19]The following section is partly based on Schmid et al. (2010).

[20]Gugler (2003*b*), p. 1319.

[21]In the U.S., institutions have to pay less tax on dividend payouts compared to individuals (cf. Hu et al. (2007)). Hence, individuals should prefer capital gains over dividends.

ratios than family firms with active family management.

Third, De Cesari (2009) analyzes firms listed on the Italian stock exchange during the years 1999 and 2004. He ends up with 195 firms and 733 firm-year observations for his analysis. In line with Hu et al. (2007) and Gugler (2003*b*), he finds that family firms choose lower overall payout levels compared to non-family firms. Following the author's argumentation, conflicts between shareholders and management (agency conflict I) are less severe in family firms and hence payout as a governance device is of minor importance in those firms. Furthermore, the study finds evidence that the fraction of dividend in total firm payout is inversely related to the cashflow rights of the controlling shareholder and positively related to the wedge between cashflow and voting rights of the controlling shareholder.

Fourth, a recent study by Setia-Atmaja et al. (2009)[22] shows that family controlled firms in Australia have higher dividend payout ratios. They argue that dividend payouts are influenced by agency conflict II (cf. section 2.2.3), even after controlling for tax reasons. These agency cost considerations suggest that family firms do not expropriate minority shareholders (agency conflict II) since they choose higher levels of dividends, which are a pro-rata distribution of firm income to all shareholders. Hence, they argue that dividends are heavily influenced by corporate governance reasons. However, the authors of this study solely focus on dividend payments and do not consider share repurchases as a possible vehicle for cash distribution to shareholders.

To summarize, Hu et al. (2007) and Setia-Atmaja et al. (2009) who focus on countries with high levels of investor protection (U.S. and Australia) provide mixed evidence for payout ratios in family firms. While Hu et al. (2007) finds lower payout ratios in family firms, Setia-Atmaja et al. (2009) documents the opposite. Gugler (2003*b*) and De Cesari (2009), who analyze Austria and Italy, two countries with rather low investor protection, find that family firms exhibit lower payout ratios.[23] Interestingly, payout policy seems to be influenced by both agency conflict I (cf. Gugler (2003*b*), De Cesari (2009) and partly Hu et al. (2007)) and agency conflict II (Setia-Atmaja et al. (2009).[24]

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[22]Cf. section 3.3.1 for a detailed description of this study.

[23]La Porta et al. (1999) analyze shareholder rights in 27 wealthy economies and classify both Australia and the U.S. as countries with a high (above median) "anti-director" index (and hence good investor protection), whereas Austria and Italy belong to the group of countries with a low "anti-director" index.

[24]For a detailed description of agency theory, cf. section 2.2.1.

Despite the rather sparse literature on family firms and payout policy, there is a more comprehensive strand of literature on payout policy in general. This is of special interest since payout policy is characterized by several recent trends like the increasing importance of share repurchases. Consequently, the results of studies dealing with family firms may be biased by focusing on different time periods. Nevertheless, most published research on corporate payout policy has focused on the U.S. Although it is beyond the scope of this dissertation to summarize this extensive and mature strand of literature[25], I want to highlight the most recent **trends in U.S. payout policy**:

First, Fama and French (2001) show that the number of firms paying cash dividends has declined heavily from 66.5% in 1978 to 20.8% in 1999. The authors argue that this development can in part be attributed to changing characteristics of publicly traded firms. In fact, the number of listed firms in the U.S. has grown rapidly during the 1990s with new lists that are smaller, less profitable and faster growing. In addition, their asset base is dominated by intangibles rather than fixed assets, as shown by Fama and French (2004*a*)). However, Fama and French (2001) also show that the propensity to pay dividends has even declined after controlling for changing firm characteristics.

Second, the finding of Fama and French (2001) might be related to changing patterns of corporate payout policy over the last decades: While the meaning of share repurchases as a payout policy instrument has increased, the importance of cash dividends has decreased. Skinner (2008) reports that the aggregate level of stock repurchases has now approximately the same magnitude as the aggregate amount of cash dividends.[26] Firms that only pay dividends are largely extinct. Instead, three groups of firms have emerged: (i) firms that pay dividends and make regular repurchases (ii) firms that make regular repurchases and (iii) firms that make occasional repurchases. Brav et al. (2005) provide survey evidence that group (i) consists of large, established firms that continue to pay cash dividends with regard to their history - most of those firms have paid dividends for years and are therefore obliged to continue this practice.

Third, Weston and Siu (2003) show another trend: Overall, firms tend to distribute an

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[25]For excellent reviews of the literature, see e.g. Allen and Michaely (2003) or DeAngelo et al. (2009). For a similar description of recent trends in corporate payout policy in the U.S., see von Eije and Megginson (2008).

[26]For further evidence that the level of stock repurchases has increased dramatically over the last decades and stock repurchases function at least partly as a substitution for cash dividends, cf. Grullon et al. (2002).

increasing part of their earnings. In a first step, they analyze the corporate sector's cash dividends as percentage of corporate earnings and find an increase of this ratio from 40% in 1971 to 81% in 2001. If they include both dividends and share repurchases in their analysis, the level of payout in relation to corporate earnings even reached 116% in 2001. Hence, in 2001 firms decided to pay out more than they earned.

Fourth, the trend to increase the payout ratio is driven by just a minority of very profitable firms, as indicated by DeAngelo et al. (2004). They find that "the 25 firms that paid the largest dividends in 2000 account for a majority of the aggregate dividends and earnings of industrial firms"[27]. The substantial increase in payouts of mature firms more than substitutes the large number of small and medium-sized listed firms that refrains from paying dividends. In another article, DeAngelo and DeAngelo (2006) add one important piece to this puzzle by showing that dividend payment is related to the life-cycle of the firm. Mature firms with high retained earnings pay higher dividends than younger firms with a large portion of contributed equity (and a low portion of retained earnings) and better investment opportunities.

Fifth, there are some studies that analyze how different ownership categories affect payout policy (cf. Lie and Lie (1999), Perez-Gonzalez (2002), Hsieh and Wang (2008) among others). In contrast to this dissertation, their motivation to use ownership data is to study tax clientele effects rather than corporate governance effects or inter- and intra-shareholder conflicts. Based on exogenous variation in personal income taxes, Perez-Gonzalez (2002) can show that tax preferences of large shareholders indeed matter for the choice between dividends and capital gains. In a similar vein, Lie and Lie (1999) and Hsieh and Wang (2008) argue that corporate insiders' ownership stakes and tax preferences have an influence on the decision between dividends and share repurchases as the means of payout policy.

In comparison to the extensive empirical research on payout policy in the U.S., there is still comparatively little evidence on **payout policy in Europe**. This is surprising since the "law and finance" literature originating in the late 1990s suggests a strong link between legal origin, institutional setting and corporate policy choices.[28]

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[27]DeAngelo et al. (2004), p. 425.

[28]Cf. for example La Porta et al. (1997) and La Porta et al. (1998) for the beginning of this literature and La Porta et al. (2008) for a comprehensive review.

First, La Porta et al. (2000a) indicate that dividend payments are increasing in investor protection and decreasing in agency costs. They use the cross-country heterogeneity in terms of agency costs associated with the institutional setting for an international study on dividend policy of more than 4,000 firms from 33 countries. They argue that agency costs can influence dividend decisions in two ways: minority shareholders might "pressure" corporate insiders to distribute cash (outcome model) or firms might pay dividends in order to favor future investors in the event of seasoned equity issues (substitute model). They conclude that firms in countries with better investor protection pay higher dividends. As indicated by the authors, this result is in line with the "outcome model". Moreover, in such countries investors are willing to wait for their dividends along the life-cycle of firms as indicated by the fact that high growth firms pay lower dividends than low growth firms. However, the sole focus of La Porta et al. (2000a) lies on dividends, ignoring the role of share repurchases.

Second, two studies provide recent evidence on differences in payout policy throughout several developed economies and Europe: Denis and Osobov (2008) examine the likelihood to pay dividends in a set of six developed economies between 1989 and 2002 (in particular they analyze the United States, Canada, the United Kingdom, Germany, France and Japan). They find cross-country evidence for the Fama and French (2001) observation that the propensity to pay dividends is positively related to firm size and profitability but negatively to growth options. Moreover, they show that the earned/contributed capital mix has high explanatory power for dividend policy, as proposed by DeAngelo and DeAngelo (2006). In contradiction to the U.S. evidence by Fama and French (2001), Denis and Osobov (2008) find no indication that dividend payments declined outside the U.S. In fact, the aggregate level of dividends is constant and concentrated among a number of large, profitable and established firms (which is largely in line with U.S. based evidence provided by DeAngelo et al. (2004) and the life-cycle theory of dividends suggested by DeAngelo and DeAngelo (2006)). von Eije and Megginson (2008) analyze both dividends and share repurchases for 15 countries within the European Union between 1989 and 2005. They provide a number of interesting findings: Although total real dividends paid have increased, the fraction of dividend payers has declined. While the overall propensity to pay dividends has declined, the propensity for share repurchases and the total value

of share repurchases has increased. As in the U.S., common factors such as firm size, market-to-book or profitability seem to have high explanatory power for payout policy in Europe. Although fewer European firms than U.S. firms repurchase shares, there seems to be evidence for a complimentary effect of share repurchases for dividends. The former seem to be more sensitive to corporate earnings especially in the last years of the study period (2001-2005). In addition, von Eije and Megginson (2008) find a positive relationship between financial reporting frequency, which has increased from an average of 1.2 to 2.4 per year within the EU from 1989 to 2005, and the payout level. They also report that privatized firms are usually strong dividend payers. While they only account for 2% of the listed firms, they are responsible for almost one quarter of cash dividends. Interestingly, and in contrast to the findings of DeAngelo and DeAngelo (2006) for the U.S. and Denis and Osobov (2008) on an international dataset they find no significant relationship between the mix of retained/contributed capital and corporate payout policy.

Third, with regard to Germany, the following empirical results are important: von Eije and Megginson (2008) find a strong decline in the number of regular dividend payers, from 84% of all listed firms in their dataset in 1991 to only 37% in 2004. They relate this finding to the large number of entrepreneurial firms that went public during Germany's boom phase at the high-tech segment Neuer Markt between 1998 and 2000. Concerning share repurchases, they document (without reporting concrete numbers) that they were almost non-existing in Germany before 1998 and were used in a comparatively moderate way after 1998. Goergen et al. (2005) provide large-scale empirical evidence that dividend policy in Germany is more flexible than in the U.S. Temporary dividend cuts and omissions - especially after the occurrence of a loss - seem to be a common feature. This result is in strong contrast to the predictions of Lintner (1956) and empirical evidence of DeAngelo et al. (1992) who report that U.S. firms reduce their dividend permanently if earnings deteriorate. In this context, Andres (2008) argue that German firms use cashflows instead of earnings to determine target dividends. Finally, Gugler and Yurtoglu (2003) argue that corporate governance is important for dividend policy in Germany. In particular, they show that controlling shareholders - if they are not monitored by a second large shareholder - are decreasing the "pro-rata payouts" through dividends and instead prefer to consume private benefits of control.

Overall, empirical evidence on payout policy outside the U.S. is still comparatively sparse. The same is true for empirical studies dealing explicitly with the influence of family firms on payout policy decisions.

3.3.3 Firm diversification

This topic is so far largely unexplored, with two notable exceptions in the literature[29]: Anderson and Reeb (2003b)[30] and Gomez-Mejia et al. (2010). Both studies focus on listed family firms in the U.S. and find that family firms are less diversified than non-family firms, both domestically and internationally. In addition, Gomez-Mejia et al. (2010) argue that if family firms diversify internationally, they prefer to enter regions that are "culturally close" to their domestic market. Empirical evidence outside the U.S., in countries with less developed capital markets, a lower level of investor protection and hence a stronger meaning of controlling shareholders in the firm's governance structure is so far missing.

From a theoretical point of view, it is not unambiguous why companies diversify and if this increases or decreases firm value. In the literature, there are arguments in favor of and against corporate diversification. For my empirical analysis of diversification decisions in family firms, it is important to know about the value effects of diversification. Hence, I now present a brief overview on the literature dealing with firm value implications of diversification. A more comprehensive overview on this literature is, for example, provided by Martin and Sayrak (2003).

The question whether there exists a diversification discount, i.e. if diversified firms trade at a discount at capital markets, was the focus of a vast amount of empirical studies. The empirical results on this topic are rather mixed, with studies finding that diversification destroys shareholder value and others, mostly more recent analysis, demonstrate that diversification does not affect shareholder value.

Early studies on this topic document the existence of a diversification discount. For example, Lang and Stulz (1994) show that market valuation, measured by Tobin's q, and firm diversification were negatively related in U.S. firms during the 1980s. Similar results

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[29]The following section is partly based on Schmid et al. (2008).

[30]Cf. section 3.3.1 for a detailed description of this study.

are reported by Berger and Ofek (1995), who compare the market values of firms with the sum of the values of their segments. They find that diversified U.S. firms trade at a value which is 13% to 15% lower than their "real" value during 1986 and 1991. Servaes (1996) analyzes a U.S. sample covering the years 1961 to 1976 and finds evidence in favor of a diversification discount. However, he shows that there was a huge diversification discount during the 1960s, but this discount diminished during the 1970s.

One potential explanation for the existence of this discount is provided by Scharfstein (1998) and Rajan et al. (2000) who argue that diversified firms suffer from capital misallocation. Other explanations which were discussed in the literature are limitations in the firm's governance structure (c.f. Palia (1999) among others) or lower efficiency in diversified firms (cf. Maksimovic and Phillips (2002) among others).

However, more recent studies cast doubt on the existence of a diversification discount. For example, Graham et al. (2002), Campa and Kedia (2002) and Villalonga (2004b) find that firms which are diversified today even traded at a discount on the capital market before they started to diversify. Hence, they argue that the results in favor of a diversification discount may be influenced by endogeneity since weak performing firms are more likely to start to diversify. Furthermore, Villalonga (2004a) argues that studies on diversification discount suffer from a measurement bias since they focused on reported business segment data may not reflect the firm's "true" segments due to high tolerance in reporting.[31] Using a new database, she even finds that diversified firms do not trade at a discount, but at a premium at the capital market (cf. Villalonga (2004a)).

While those authors focused on U.S. firms, others consecrated themselves to the question whether a diversification discount exists outside the U.S. Lins and Servaes (1999) in their study of the U.K., Germany and Japan document a significant diversification discount in the U.K. (15%) and Japan (10%), but find no significant diversification discount for Germany. In addition, Kose et al. (2008) argue, based on a cross-country study, more broadly that corporate risk bearing increases in investor protection. Lins and Servaes (2002) analyze about 1000 firms from emerging markets in 1995 and document a signif-

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[31]Especially, the *Compustat* database covers only segments which account for 10% of a firm's assets, sales or profits. Hence, the maximum number of reported business segments is capped at ten. Lichtenberg (1991) and Montgomery (1994) show that this constraint is affecting the measurement of business segment diversification for 17% of all *Compustat* firms and 56% of the 500 largest firms, respectively.

icant diversification discount of about 7%. Furthermore, they can show that diversified firms are less profitable. However, even after controlling for that the discount is existent. Fauver et al. (2003) use a dataset of more than 8000 firms from 35 countries to investigate the interdependence between diversification discount and financial, legal and regulatory environments. Indeed, they find that these factors have a strong impact on the size of the diversification discount. They find that firms in "high-income" countries with developed and internationally integrated capital markets are traded at a discount. In countries with less developed and internationally separated capital markets, they find either no discount or even a diversification premium.

3.4 Discussion and conclusion

To summarize, the Berle and Means (1932) view of separated ownership and control and atomistic shareholder structures is no appropriate description for most modern corporations. Even in the U.S., where investor protection is high, concentrated ownership is not uncommon. As argued by La Porta et al. (1999), these large (controlling) shareholders are often founders and / or their families. Hence, family firms are a common and important phenomenon for capital markets. As the Economist states, ...

> "... [t]hey are easily the commonest kind of corporate structure on the planet, and they show no signs of disappearing. Whether the company is Wal-Mart, Gucci, Cargill, Hyundai or most of Germany's Mittelstand and Latin America's grupos, a family firm is different in important ways from a firm in which a family plays no significant part."[32]

After the finding that family firms are widespread, emphasis in the empirical literature was placed on the question whether family firms differ from non-family firms in terms of firm performance. For this, early results have led to mixed evidence. More recent literature suggests that family firms are superior performers, at least if the founder of the company is still involved in the business and there are no disproportions between family ownership and control. Especially the succession decision was found to be critical for performance in family firms if the choice of a family successor instead of an external manager is not based

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[32]Anonymous author (2000).

on a objective criteria. Despite the comprehensive literature on family firms and firm performance, the question if, how and why families affect the corporate policy of "their" firms is largely unexplored. As pointed out, the papers dealing with capital structure decisions (Mishra and McConaughy (1999), Anderson and Reeb (2003b), Ellul (2009) and Setia-Atmaja et al. (2009)) find mixed results for differences between family firms and non-family firms. The same is true for payout policy. While Gugler (2003b), Hu et al. (2007) and De Cesari (2009) find lower payout ratios in family firms, Setia-Atmaja et al. (2009) reports the opposite. For diversification decisions, Anderson and Reeb (2003b) and Gomez-Mejia et al. (2010) show that family firms are less likely to diversify. The results for family firms and firm behavior are summarized in table 3.2.

Table 3.2: Overview of Empirical Results for Firm Behavior

Author(s)	Period	Sample	Results
Capital structure decisions			
Mishra and McConaughy (1999)	1986-1988	105 family firms (and two matched samples) drawn from the "The Business Week CEO 1000"	Family firms use less debt
Anderson and Reeb (2003b)	1993-1999	319 firms from the S&P-500	Family firms use equal levels of debt
Ellul (2009)	1996-2004	3,608 firms from 36 countries	Family firms use more debt
Setia-Atmaja et al. (2009)	2000-2005	316 Australian firms	Family firms use more debt
Payout policy			
Gugler (2003b)	1991-1999	241 Austrian firms	Family firms have lower dividend payout ratios
Hu et al. (2007)	2000-2005	177 family firms from from the S&P-500	Family firms have lower dividend payout ratios. No differences for share repurchases
De Cesari (2009)	1999-2004	177 firms from Italy	Family firms have lower overall payout ratios
Setia-Atmaja et al. (2009)	2000-2005	316 Australian firms	Family firms have higher dividend payout ratios
Diversification decisions			
Anderson and Reeb (2003b)	1993-1999	319 firms from the S&P-500	Family firms are less diversified in terms of business segment diversification
Gomez-Mejia et al. (2010)	1998-2001	360 randomly selected U.S. companies	Family firms are less diversified in terms of business segment and geographical diversification

			(continued)		
Author(s)	**Period**	**Sample**		**Results**	

Source: Own work

This table gives an overview on empirical results for family firm and firm behavior. Please note that the results are presented in a simplified manner. A more detailed description can be found in sections 3.3.1 to 3.3.3.

To summarize, empirical studies focusing on family firms and firm behavior are sparse and often inconclusive so far, especially for institutional environments outside the U.S. Behind this background, I aim to complement existing literature with a detailed analysis of capital structure, payout policy and diversification decisions of German family firms. This might enhance the understanding if and how families affect the corporate policy decisions in "their" firms. Furthermore, my dissertation addresses a question which has been largely neglected so far, namely why family firms adapt their corporate policy.

4 Dataset, hypotheses and methodology

4.1 Dataset

This section summarizes the data used in my dissertation, the variables which are related to ownership and board structures and the sample selection criteria. Furthermore, I describe the composition of my sample over time and industries.

4.1.1 Data and data sources

For my empirical analysis, I need firm data along the following dimensions: Information on founder(s) of the company, on its ownership and board structure (both management and supervisory board), on its capital market performance as well as accounting data. The following section describes these data and their source:

First, it is essential for my analysis to have information about the firm's founder(s). I hand-collect this information by using the history section of *Hoover's Company Profiles* from the Hoovers Online database to identify the name(s) of the founder(s). Missing information is complemented by collecting information from *company homepages* and by conducting press research from *Factiva* and *LexisNexis*. Despite intensive research, I were not able to obtain this information for 26 firms.

Second, I have hand-collected information about the firm's ownership and board structures. The core of this data comes from *Hoppenstedt Aktienführer*. Hoppenstedt collects data on ownership structures, management and supervisory board composition of publicly listed German firms. Nevertheless, I further use *Bureau van Dijk's Amadeus* database, *Commerzbank's Wer gehört zu wem* and web research in order to verify ownership in-

formation. Every shareholder is assigned to a shareholder group (e.g. *member of the management board/founder* or *private investor/no founder*). These shareholder groups are combined to the following shareholder classes, e.g. family shareholder or outside shareholder. Table Appendix 2 illustrates the relationship between shareholder groups and shareholder classes. It is important to note ownership hold by family members of a founder or member of the firm's top-management are assigned to the founder or the member of the top-management.[1]

For every single shareholder, the ownership stake in terms of *voting rights* is collected. If *Hoppenstedt* reports ownership chains, I always use the identity of the last ("ultimate") owner for the classification. Furthermore, ownership of individuals hold through an intermediary company is assigned to the individual (e.g. the company's founder). For strategic investors holding more than 50% of the firm's voting rights, I analyze if the "ultimate" owner is an individual and assign the ownership stake of the strategic investor to the individual.[2]

Third, the composition of the firms' management and supervisory board, as reported by *Hoppenstedt*, is analyzed. Thereby I categorize every member of these two boards either as member or as independent of the founding family.

Forth, this dataset is complemented with accounting data from the *Thomson Worldscope* and performance data from *Thomson Datastream* databases.

4.1.2 Corporate governance variables

Based on these data, I calculate several family firm variables, which are described in the following. The rationales for the calculation of the variables as well as their criteria was already described in section 2.1.2. Hence, I only present the variables and their construction in this section, but no explanatory statements, e.g. for the usage of a 25% ownership threshold.

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[1] For example, ownership of the wife of a founder who is currently member of the management board is assigned to the shareholder group "member of the management board / founder".

[2] However, it is extremely rarely that *founding* families hold their equity through another company. The only exception are intermediary companies which are purely used for this purpose. Consequently, my definition of founding family ownerhip is assumed to equal a "pure" ultimate ownership defintion.

FAMILY FIRM: Dummy variable which is one for family firms and zero otherwise. If a firm fulfills **at least one** of the criteria presented below, it is classified as a family firm:

1. The cumulative ownership of the company's founder and her family is at least 25% of the firm's voting rights, hold either directly or indirectly via an intermediary company. If the company was founded by more than one entrepreneur, the cumulative ownership of all founders and their families must be at least 25% of the firms voting rights.[3]

2. At least one member of the family is involved in the firm's management board.

3. At least one member of the family is involved in the firm's supervisory board.

FAMILY MB: This variable takes the value one if at least one member of the family is present in the firm's management board and zero otherwise.

FAMILY SB: This variable takes the value one if at least one member of the family is present in the firm's supervisory board and zero otherwise.

FAMILY MANAGEMENT: This variable takes the value one if at least one member of the family is present in the firm's supervisory board *or* management board and zero otherwise.

FOUNDER CEO: This variable takes the value one if the founder of the company acts as the CEO and zero otherwise.

FAMILY OWNERSHIP: The cumulative ownership of the company's founder and her family of the firm's voting rights, hold either directly or indirectly via an intermediary company.

FAMILY OWNED*MANAGED: Interaction term of FAMILY OWNERSHIP and FAMILY MB. Hence, this variable can be interpreted as a very restrictive definition of a family firm since both family ownership and family participation in the management board are required.

REAL FAMILY FIRM: Dummy variable which is one for real family firms and zero otherwise. A family firm qualifies as a real family firm if it fulfills **at least one** of these criteria:

1. Members of the founding family except the founder herself have an ownership stake

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[3]Examples for companies founded by several individuals are Daimler AG (founded by Gottlieb Daimler and Carl Benz) or the business software company SAP AG (founded by Dietmar Hopp, Haso Plattner, Hans-Werner Hector, Claus Wellenreuther and Klaus Tschira). Hence, whenever the term founding family is used, it refers to all founders and their families.

of at least 25% of the firm's voting rights, hold either directly or indirectly.

2. At least one member of the founding family except the founder herself is involved in the firm's management board.

3. At least one member of the founding family except the founder herself is involved in the firm's supervisory board.

FOUNDER-CONTROLLED FIRM: Dummy variable that equals one for all family firms (FAMILY FIRM) which are not classified as REAL FAMILY FIRMS and zero otherwise.

Furthermore, the following ownership based variables are constructed. The definition of the different shareholder groups is summarized in table Appendix 2.

OUTSIDE BLOCKHOLDERS: The cumulative ownership in terms of voting rights of all shareholders classified as outside shareholder. However, only outside shareholders with an ownership fraction of at least 5% are conidered.

OUTSIDE BLOCKHOLDER [25%]: Dummy variable which equals one if a shareholder classified as outside shareholder holds at least 25% of the firm's voting rights and zero otherwiese.

FINANCIAL BLOCKHOLDER: Dummy variable which equals one if a shareholder classified as financial shareholder holds at least 25% of the firm's voting rights and zero otherwiese.

GOVERNMENT BLOCKHOLDER: Dummy variable which equals one if a shareholder classified as government shareholder holds at least 25% of the firm's voting rights and zero otherwiese.

STRATEGIC BLOCKHOLDER: Dummy variable which equals one if a shareholder classified as strategic shareholder holds at least 25% of the firm's voting rights and zero otherwiese.

PRIVATE BLOCKHOLDER: Dummy variable which equals one if a shareholder classified as privte shareholder (cf. table holds at least 25% of the firm's voting rights and zero otherwiese.

INSIDER OWNERSHIP: The cumulative ownership in terms of voting rights of all shareholders classified as insider shareholder (i.e. active and former members of the management and supervisory board as well as their families).

The construction of the dependent and the other control variables used for the analysis of capital structure decisions is described in 4.3.1, for payout policy in 4.3.2 and for diversification decisions in 4.3.3. Table Appendix 1 provides a comprehensive overview on all variables used in this dissertation.

4.1.3 Sample selection criteria

This section describes the criteria a firm has to fulfill to be included in my sample. Only firms that fulfill all criteria are considered for my empirical analysis. The sample selection criteria are:

First, the point of origin for my dataset is the Composite DAX (CDAX) of Deutsche Börse Group. This stock exchange has two main markets: an EU-regulated market and an exchange-regulated unofficial market (the so called "open market" or "Freiverkehr"). The CDAX covers all firms that are traded in the EU-regulated market. Within the EU-regulated market, a firm can choose between a listing in two transparency levels: General and Prime Standard. While firms in the General Standard have to fulfill the EU-regulated minimum transparency requirements, firms in the Prime Standard have to fulfill additional transparency standards. Hence, the Prime Standard is the transparency level in Germany with the highest reporting and disclosure requirements.[4] However, I decided not to restrict my analysis to Prime Standard companies, but to include General Standard companies as well. One rationale for this is that the Prime Standard covers mainly large companies, which may be less representative for the whole German environment than the smaller companies of the General Standard. The second rationale is that there were several changes in terms of transparency levels during my sample period. As a consequence, the same transparency level can not be used consistently for the whole sample period, ranging from 1995 to 2006.[5] The sample selection rule requires that the *common stock* of a firm

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[4]Firms in the General Standard have to fulfill the minimum requirements for EU-regulated markets, such as IFRS reporting, disclosure of directors' dealings, ad hoc disclosure, compliance with disclosure of ownership stakes beyond legally defined control thresholds according to Wertpapierhandelsgesetz (WpHG) or compliance with mandatory takeover-bid rules according to Wertpapiererwerbs- und Übernahmegesetz (WpÜG). In addition to these minimum requirements, Prime Standard firms are, for example, required to report company news in English, publish quarterly reports in German and English, keep a company calendar in the Internet and organize at least one analyst conference per year.

[5]Before 1997, the Deutsche Börse used three main markets: "Amtlicher Handel", "Geregelter Markt" und "Freiverkehr". In 1997, the technology orientated segment "Neuer Markt" was introduced. After a major reform in 2003, the segments General and Prime Standard were founded.

Table 4.1: Development of the CDAX 1995 to 2006

Year	Firms	Dual Listings	Common Shares	Preferred Shares
1995	295	51	283	64
1996	301	53	290	66
1997	306	48	291	63
1998	460	60	433	87
1999	613	57	585	85
2000	740	50	717	73
2001	746	44	727	63
2002	711	40	692	59
2003	682	37	663	56
2004	658	34	640	52
2005	648	30	632	46
2006	655	29	641	43

Note: This table shows the development of the CDAX index over the sample period 1995 to 2006. The overview contains both financial and non-financial companies.
Source: Own work.

is listed in the CDAX for *at least one year* of the sample period. The index composition published annually by *Deutsche Börse Group* is used to draw this sample.[6] Table 4.1 shows the development of the CDAX over the sample period 1995 to 2006.

As can be seen, the number of firms listed in the CDAX rose dramatically from 1995 to 2006. Especially in the years 1998, 1999 and 2000, there was a huge number of IPOs in the German stock market ("IPO wave"). From the 518 IPOs during my sample period, 407 (about 79%) took place in during these three years. In the years after this IPO wave, the number of IPOs was very low. For example, no single IPO took place during the year 2003 in the CDAX. After 2004, the number of IPOs started to increase again, although it is still at a lower level than it was during the IPO wave. While the number of common shares increased, the number of listed preferred shares remained rather constant over time. Contrary, firms with dual listings even decreased during my sample period, from 51 in 1995 to 29 in 2006. This finding is in line with Pajuste (2005) who finds that dual listings are a diminishing phenomenon.

Beneath IPOs, several other reasons contribute to an increase in the number of listed common shares. Table 4.2 summarizes the reasons for admissions in the CDAX on a yearly

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[6]There are several companies that have listed preferred shares only. However, since the empirical study focuses on voting rights, these firms are not included into the sample. If a firm has both listed common and preferred share, only the common shares are considered for the sample.

Table 4.2: CDAX Admissions 1996
to 2006

Year	IPO	Segment Change	Other
1996	17	5	4
1997	11	0	4
1998	116	13	46
1999	151	0	10
2000	140	2	4
2001	23	2	1
2002	3	0	6
2003	0	3	1
2004	7	2	0
2005	17	4	1
2006	33	5	1

Note: This table shows the reasons for
CDAX admissions during 1996 to 2006.
Other contains the takeover of a shell com-
pany, the listing of a second stock class and
unknown reasons.
Source: Own work.

basis. As can be seen, most admissions are due to a firm IPO. From the 632 admissions
during the period 1995 to 2006, 518 (about 82%) were caused by an IPO. Other reasons
are the change of the segment, the takeover of a shell company or the listing of a second
stock class. However, none of these reasons accounts for more 10% of the total admissions.
Despite an intensive research[7], the reasons for about 6% of all admissions could not be
resolved.

The reasons for leavings in the CDAX are summarized in table 4.3. Contrary to the
admissions, there exists no single reason accounting for the majority of all leavings. The
main reason for index leavings are squeeze-outs which account for about 32%[8], followed by
mergers with about 23%. Other reasons are bankruptcy, change of the segment, delisting
of preferred shares and a change of the legal form. Again, the reasons for about 15% of
all index leavings could not be resolved despite an intensive research.

Second, due to their differences in terms of balance sheets and accounting, I exclude
all companies from the financial service sector. This is a procedure commonly applied

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[7]The main sources used for the research were the DAI-Factbook, company homepages, ad-hoc news
and newspaper reports.

[8]This may be caused by the wave of going private transactions after the introduction of the "squeeze-
out-law" in Germany in January 2002 (cf. §327 AktG). It allows majority owners to compensate minority
shareholders and take the firm private if they own at least 95% of the firm's voting rights.

Table 4.3: CDAX Leavings 1996 to 2006

Year	Bankruptcy	Merger	Squeeze-Out	Other
1996	0	11	1	5
1997	1	5	0	11
1998	1	3	1	4
1999	0	2	1	8
2000	0	11	4	11
2001	1	7	4	14
2002	0	9	24	15
2003	1	11	18	6
2004	9	2	18	7
2005	6	2	22	6
2006	9	9	10	5

Note: This table shows the reasons for CDAX leavings during 1996 to 2006. Other contains segment changes, delisting of preferred stocks, changes of the legal forms and unknown reasons.
Source: Own work.

for empirical studies in the financial economics context. For this, all companies with a primary SIC code of 60 to 65 and 67 are excluded. The primary SIC code is obtained by the *Thomson Worldscope* database. In total, 153 firms from the financial service industry are identified and excluded.

Third, the choice of the sampling period from 1995 to 2006 results from data availability constraints: The disclosure of voting rights was not mandatory in Germany before 1995. According to the German Securities Trading Act (Wertpapierhandelsgesetz, WpHG) the reporting of corporate ownership to both the Federal Financial Supervisory Authority (BaFin) and the traded company itself became mandatory for shareholders in 1995, starting with an ownership threshold of 5%. Hence, the starting point for my sampling period is 1995 since the quality of ownership data in Germany is not very reliable beforehand. My sample period ends in 2006 which was the last year with available ownership, accounting and capital market information when constructing the dataset.

Fourth, only firm-years for which ownership, management and supervisory board as well as founder information are available enter the sample. This restriction is necessary because my empirical analysis relies on these variables.

The final sample of 660 non-financial CDAX firms (5,135 firm-year observations) contains

several types of firms: First, it includes world-renown, large and well-established firms with a long firm history mostly operating in traditional industries, such as Siemens, Bayerische Motoren Werke or Thyssen-Krupp. Many of these old-economy companies emerged during Germany's period of industrialization in the 19th century, like MAN AG, founded by Carl August Reichenbach and Carl Buz in 1844, Bayer AG, established by Friedrich Bayer in 1863, or the Linde Group, founded by Carl von Linde in 1876. Second, the sample covers firms founded during the post-World War II period, when Germany experienced its economic miracle ("Wirtschaftswunder"), like the publishing house Axel Spinger AG, founded by the Springer brothers in 1946. Finally, the sample covers also successful new-economy start-ups from high-tech industries, such as internet, biotech or solar-energy.

Although I have complete ownership and board data for 5,135 firm-year observations, I cannot use all observations in my regressions (cf. chapter 5) due to incomplete or missing accounting data from *Thomson Worldscope*. The exact number of usable firm-year observations is related to the dependent and independent variables applied in the regressions. The regression tables indicate the number of firm-year observations used in the specific analysis.

These sample selection criteria limit my analysis to exchange listed firms only. Although it could be argued that the conclusions might not be representative for the large number non-listed family firms in Germany, I have chosen this sample since there are enormous data availability constraints with non-listed companies.

4.1.4 Sample composition

Overall, the sample consists of 660 firms and 5,135 firm-year observations. Based on my definition of a family firm, there are 2,410 family firm-year observations and 2,725 non-family firm-year observations. For an overview of the sample composition over the years 1995 to 2006, cf. table 4.4. As can be seen, the number of family firms increased substantially over the sample period. In 1995, family firms accounted for only about 28% of all firms in my sample (65 family firms versus 165 non-family firms). In 2006, there were nearly as many family firms as non-family firms (236 family firms versus 258 non-family firms). Interestingly, the number of non-family firms increased only moderately, while the

Table 4.4: Sample Composition: Family Firms by Year

Year	Firms	Family Firms	Non-Family Firms
1995	230	65	165
1996	235	68	167
1997	250	75	175
1998	312	111	201
1999	430	203	227
2000	566	312	254
2001	568	315	253
2002	542	278	264
2003	514	262	252
2004	500	248	252
2005	494	237	257
2006	494	236	258
Total	**5135**	**2410**	**2725**

Note: This table shows the development of the sample composition over time. Column 1 presents the 12 sample years between 1995 and 2006, column 2 the number of firms in each year and column 3 and 4 the number of family and non-family firms in each year. The definition of FAMILY FIRM is explained in chapter 4.1.2.
Source: Own work based on Ampenberger et al. (2009).

number of family firms nearly quadruplicated (from 65 in 1995 to 236 in 2005). The main rationale for this is the huge number of family firms that went public during the IPO wave in the years 1998, 1999 and 2000. In this period, the number of family firms increased from 75 in 1997 to 312 in 2000, while the number of non-family firms rose only moderately from 175 to 254. To summarize, the German environment provides an ideal setting for family firm research. From the 5,135 firm-year observations, 2,410 (about 47%) come from family firms and 2,725 from non-family firms. Hence, the two groups have a roughly equal size.

Beneath the sample composition over time, the industry composition of the sample is of interest. For this, the 2-digit SIC code of the firm's main business segment, as reported by *Thomson Worldscope*[9], is analyzed. Table 4.5 shows the number total of firm-year observations for each 2-digit industry segment. Furthermore, the number of firm-year

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[9]For 121 firm-year observations, information on the firm's primary SIC code were not available. To ensure that these firms are not from the financial service industry (and have to be excluded from the sample), a manual research on the firm's business model was conducted. However, I did not assign any SIC code to these firms since the usage of SIC codes from databases and manual assignments may lead to inconsistent industry classifications.

observations is split up into those from family firms and non-family firms. As can be seen, the distribution over the 2-digit SIC codes is characterized by a clustering in certain industries. For example, SIC code 73 (Business Services) accounts for 18.5% of all firm-year observations. Interestingly, the fraction of family firms in this SIC code is especially high with 75% of all observations coming from family firms. One explanation for this finding may be that a large number of family firms went public during the IPO wave between 1998 and 2000. During this IPO wave, most business models were related to the service, and thereby mainly internet service, industry. The second largest 2-digit SIC code is 35 (Industrial and Commercial Machinery and Computer Equipment). In this industry, the fraction of family firms is rather small, with 32% of all firm-year observations coming from family firms. To summarize, the distribution of the firm-year observations over the 2-digit SIC code industries is not balanced at all. Furthmore, the distribution of family firm-year observations is charachterized by clustering in several industries. This finding is in line with recent empircal evidence provided by Villalonga and Amit (2010) for the U.S. capital market. As a consequence, it is of huge importance to account for this fact in all empirical analysis by including industry dummies in the regression models (cf. section 4.3).

Table 4.5: Sample Composition: Family Firms by Industries

SIC	Segment description	Firm-years	FF	FF[%]	Weight
1	Agricultural Production - Crops	12	12	100%	0,2%
7	Agricultural Services	9	9	100%	0,2%
13	Oil and Gas Extraction	9	0	0%	0,2%
14	Mining and Quarrying of Nonmetallic Minerals, Except Fuels	19	0	0%	0,4%
15	Building Cnstrctn - General Contractors & Operative Builders	65	7	11%	1,3%
16	Heavy Cnstrctn, Except Building Construction - Contractors	31	0	0%	0,6%
17	Construction - Special Trade Contractors	13	13	100%	0,3%
20	Food and Kindred Products	171	20	12%	3,3%
22	Textile Mill Products	24	12	50%	0,5%
23	Apparel, Finished Prdcts from Fabrics & Similar Materials	99	48	48%	1,9%
24	Lumber and Wood Products, Except Furniture	32	12	38%	0,6%
25	Furniture and Fixtures	12	12	100%	0,2%
26	Paper and Allied Products	77	19	25%	1,5%
27	Printing, Publishing and Allied Industries	59	33	56%	1,1%
28	Chemicals and Allied Products	272	135	50%	5,3%

SIC	Segment description	Firm-years	FF	FF[%]	Weight
30	Rubber and Miscellaneous Plastic Products	134	40	30%	2,6%
31	Leather and Leather Products	11	0	0%	0,2%
32	Stone, Clay, Glass, and Concrete Products	105	24	23%	2,0%
33	Primary Metal Industries	59	0	0%	1,1%
34	Fabricated Metal Prdcts, Except Machinery & Transport Eqpmnt	77	23	30%	1,5%
35	Industrial and Commercial Machinery and Computer Equipment	573	186	32%	11,2%
36	Electronic, Elctrcl Eqpmnt & Cmpnts, Excpt Computer Eqpmnt	382	205	54%	7,4%
37	Transportation Equipment	171	55	32%	3,3%
38	Mesr/Anlyz/Cntrl Instrmnts; Photo/Med/Opt Gds; Watchs/Clocks	150	103	69%	2,9%
39	Miscellaneous Manufacturing Industries	13	13	100%	0,3%
41	Local, Suburban Transit & Interurbn Hgwy Passenger Transport	8	0	0%	0,2%
42	Motor Freight Transportation	12	5	42%	0,2%
45	Transportation by Air	22	3	14%	0,4%
47	Transportation Services	41	7	17%	0,8%
48	Communications	127	80	63%	2,5%
49	Electric, Gas and Sanitary Services	155	8	5%	3,0%
50	Wholesale Trade - Durable Goods	302	132	44%	5,9%
51	Wholesale Trade - Nondurable Goods	153	59	39%	3,0%
52	Building Matrials, Hrdwr, Garden Supply & Mobile Home Dealrs	14	12	86%	0,3%
53	General Merchandise Stores	34	5	15%	0,7%
54	Food Stores	31	0	0%	0,6%
55	Automotive Dealers and Gasoline Service Stations	11	3	27%	0,2%
56	Apparel and Accessory Stores	32	8	25%	0,6%
57	Home Furniture, Furnishings and Equipment Stores	31	26	84%	0,6%
59	Miscellaneous Retail	51	22	43%	1,0%
70	Hotels, Rooming Houses, Camps, and Other Lodging Places	1	1	100%	0,0%
72	Personal Services	6	0	0%	0,1%
73	Business Services	948	708	75%	18,5%
75	Automotive Repair, Services and Parking	19	19	100%	0,4%
78	Motion Pictures	150	98	65%	2,9%
79	Amusement and Recreation Services	47	35	74%	0,9%
80	Health Services	62	46	74%	1,2%
82	Educational Services	13	6	46%	0,3%
83	Social Services	10	8	80%	0,2%
87	Engineering, Accounting, Research, Management & Related Svcs	140	106	76%	2,7%
89	Services, Not Elsewhere Classified	14	7	50%	0,3%
99	Non-classifiable Establishments	1	0	0%	0,0%

SIC	Segment description	Firm-years	FF	FF[%]	Weight
	No industry classification	121	25	21%	2,4%
	Total	**5135**	**2410**	**2725**	**100%**

Source: Own work
This table shows the industry distribution of firm-year observations during the years 1995 to 2006. The first column contains the 2-digit SIC code, the second the corresponding short segment description as published by the U.S. Department of Labor. The third column shows the overall number of firm-year observations in the specific industry during the sample years 1995 to 2006. Column four indicates the number of family firms in the specific industry. Column five indicates the percentage of family firms in the specific industry and column six the relative weight of the industry for the whole sample.

Furthermore, I split up all firm firms in the subgroups REAL FAMILY FIRMS and FOUNDER-CONTROLLED FIRMS, as described in sections 2.1.2 and 4.1.2. Thereby, a family firm is either a real family firms or a founder-controlled firm, depending on the role of members of the founding family except the founder herself in the firm. Table 4.6 illustrates how many family firms are classified either as real family firm or as founder-controlled firms over the years 1995 to 2006. As can be seen, the number of real family firms remained rather constant over the sample period. It increased slightly from 61 real family firms in 1995 to 87 in 2006. Contrary, the number of founder-controlled firms rose substantially. While there were only four founder controlled firms in 1995, their number increased to 149 in 2006. Again, the main reason behind this finding is the huge number of family firms that went public during the IPO wave. Of course, many of these firms are still rather young. Hence, the founders themselves often play a crucial role in these firms. As a consequence, the proportion of founder-controlled and real family firms changed substantially over the sample period. While real family firms accounted for about 90% of all family firm observations in 1995, their fraction declined to about 40% in 2006. In total, founder-controlled firms account for 1,360 (about 56%) of the 2,410 family firm observations, while real family firms account for 1,050 firm-year observations.

Table 4.6: Sample Composition: Founder-controlled and Real Family Firms by Year

Year	Family Firms	Real Family Firms	Founder-Controlled Firms
1995	65	61	4
1996	68	63	5
1997	75	69	6
1998	111	94	17
1999	203	94	109
2000	312	118	194
2001	315	117	198
2002	278	90	188
2003	262	87	175
2004	248	85	163
2005	237	85	152
2006	236	87	149
Total	**2410**	**1050**	**1360**

Note: This table shows the development of the sample composition over time. Column 1 presents the 12 sample years between 1995 and 2006, column 2 the number of FAMILY FIRMS in each year and column 3 and 4 the number of REAL FAMILY FIRMS and FOUNDER-CONTROLLED FIRMS in each year. The definitions of REAL FAMILY FIRM and FOUNDER-CONTROLLED FIRM are explained in chapter 4.1.2.
Source: Own work based on Schmid et al. (2008).

4.2 Theoretical predictions and hypotheses

This section develops the hypotheses for the empirical investigation of capital structure, payout policy and diversification decision in family firms. As argued in section 2.2, agency theory forms the theoretical framework of my dissertation. Consequently, the hypotheses are developed from an agency theory perspective.

4.2.1 Capital structure decisions

Starting with the seminal work of Modigliani and Miller (1958) who argued that capital structure decisions are irrelevant for the market value of a firm in a neoclassical world, the question what determines the firm's capital structure remained a fundamental and largely unresolved question in the financial economics literature over the last five decades. Under the paradigm of the "static trade-off theory" (cf. Modigliani and Miller (1963)) firms balance the tax advantages of debt against the costs of financial distress and hence choose an optimal capital structure. By contrast, the pecking order theory (cf. Myers (1984)

and Myers and Majluf (1984)) focuses on information asymmetries between informed firm insiders and outside investors and assumes that firms prefer to finance growth opportunities with internal funds, debt, preferred equity and common equity, in that order. Under this perspective, the firm's capital structure is the result of several subsequent financing decisions.

Jensen and Meckling (1976) argue that agency conflicts influence the firm's capital structure decision. In a similar vein, the "free cashflow hypothesis" of Jensen (1986) emphasizes the disciplinary role of debt as an effective way to reduce conflicts between shareholders and (hired) managers. In this context, it is argued that debt and hence interest payment obligations reduce the discretionary decisions of selfish managers since the cash outflow for interest payments leaves less free cashflow which managers can use to maximize their utility, e.g. by empire building. If the managers want to invest in (large) new projects, they have to raise new capital (either debt or equity), what enables capital providers to monitor their actions more precisely. Hence, firms with higher convergence-of-interest need less debt to discipline the management.

As argued before, family firms differ from their non-family counterparts in terms of agency conflicts: While conflicts between shareholders and management (*agency conflict I*, cf. section 2.2.2) are mitigated, another agency conflict, i.e. between majority and minority shareholders is more severe (*agency conflict II*, cf. section 2.2.3). In terms of capital structure decision, less severe conflicts between equity and debt providers (*agency conflict III*, cf. section 2.2.4) are of importance as well.

lower agency conflict I in family firms may cause less need for the disciplinary role of debt, either due to interest alignment between family shareholders and family managers or because of higher monitoring activities by family shareholders. Consequently, family firms are expected to choose *lower* levels of leverage as an optimal response to their less pronounced agency conflict I.

On the other hand, the conflict between large (controlling) family and small (minority) shareholders (**higher agency conflict II**) may lead to the expropriation of private benefits of control by the family shareholders, either in the form of *risk aversion* or *control retention*.

Since families are often large and under-diversified shareholders (cf. section 2.2.3), they can impose a potential cost on minority shareholders because of excessive *risk aversion* (cf. Shleifer and Vishny (1986)). Furthermore, family firms with active family management have an even higher risk exposure to the firm due to their invested human capital. Hence, from a risk aversion perspective, family firms are expected prefer *lower* levels of leverage in order to decrease bankruptcy risk.

Second, *control retention* is of special importance for family shareholders since they have pronounced motivations to keep their control over the firm (cf. section 2.2.3). Following Harris and Raviv (1988), this desire for control retention is expected to be reflected in the firm's capital structure decision. However, the direction in which control retention affects the capital structure is not unambiguous: Either it is a reason to prefer debt over equity in order to avoid a loss of control to other shareholders or it is a reason to avoid debt because of more creditor monitoring. In the latter case, the family shareholder might prefer a seasoned equity offering (SEO) to acquire necessary capital. I hypothesize that the shareholder and creditor rights in a country have a strong impact on the decision of the family shareholder to either avoid or prefer debt. Since strong shareholder rights make equity more "costly" compared to debt in terms of loss of control for controlling family shareholders, I suspect that family firms exhibit higher leverage ratios in countries with comparatively high shareholder and lower levels creditor protection, like the U.S. or Australia (cf. La Porta et al. (1998)). Contrary to that, the marginal loss of control attached to debt might be higher as for equity in countries with comparatively low shareholder protection, but strong creditor rights. Since the latter situation is predominant in Germany, family firms are expected to prefer *lower* levels of debt from the control retention perspective.

Higher alignment of interest between family shareholders and debt providers is assumed to decrease the costs of debt financing in family firms (**Lower agency conflict III**, cf. section 2.2.4). Hence, family firms are expected to choose *higher* leverage ratios as an optimal response to their lower interest rates.

As a consequence, the question why family firms chose different leverage ratios is of huge importance. If lower leverage ratios are caused by a less pronounced agency conflict I or III in family firms, they simply reflect an optimal response to the lower need for debt

as a disciplinary management device or to cheaper debt financing. However, if family shareholders induce a suboptimal leverage ratio (either too high or too low) due to the extraction of private benefits of control, they might choose sub-optimal levels of leverage with negative consequences for the firm (e.g. for firm growth[10]).

Based on these theoretical considerations, the following main and sub-hypotheses are constructed:

CS-H1: Lower agency conflict I in family firms leads to lower leverage ratios.

CS-H1a: Interest alignment between family shareholders and managers leads to lower leverage levels.

CS-H1b: Monitoring incentives of family shareholders lead to lower leverage levels.

CS-H2: Higher agency conflict II in family firms leads to lower leverage ratios.

CS-H2a: Risk aversion as private benefit for the family leads to lower leverage levels.

CS-H2b: Control retention as private benefit for the family leads to lower leverage levels.

CS-H3: Interest alignment between family shareholders and debt providers leads to higher leverage levels (agency conflict III).

4.2.2 Payout policy

Research in financial economics on the topic of payout policy is a widespread and mature field. As argued by Modigliani and Miller (1958) and Miller and Modigliani (1961), the dividend policy has no effect on the wealth of the firm's shareholders.[11] However, as already found by Lintner (1956), dividends are a very common phenomenon among listed firms. This so called "dividend puzzle" (cf. Black (1976)) gained huge popularity over the last decades.

One of the many explanations for the existence of dividends is the theory that firms signal future profitability by paying dividends (cf. for example Bhattacharya (1979), John and Williams (1985) or Miller and Rock (1985)). Another theory that might explain payout

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[10]In a similar vain, Mishra and McConaughy (1999) argue that lower levels of debt in family firms hinder their growth rates because they give up profitable investment opportunities.

[11]Necessary assumptions for their statement are a frictionless world and a constant investment policy.

policy, which gained increasing attention in the last decade, is agency theory. As argued for example by Rozeff (1982), Easterbrook (1984) and Jensen (1986), dividend payments have a disciplinary character. According to the "free cashflow hypothesis" of Jensen (1986), the discretionary decisions of managers can be effectively limited by payouts to shareholders, reducing the risk that managers maximize their utility, e.g. by engaging in value decreasing empire building.[12] If the manager wants to finance further projects despite the distribution of dividends, he is forced to issue new external capital. As a consequence, external capital providers have higher possibilities for management monitoring due to lower information asymmetries (cf. Easterbrook (1984)).

Just recently, DeAngelo et al. (2009) provided a comprehensive survey of this literature. Surprisingly, as argued in section 3.3.2, the question whether family firms have differences in terms of payout policy is largely unexplored so far. However, from a theoretical perspective, there exist several reasons for differences between family and non-family firms. Anecdotal evidence in this context is provided by the Economist:

> "Indeed, managing the family's relationship with the firm can be as hard as managing the business itself. There may be tensions between family and non-family shareholders; but there may also be rifts between family members who do and don't work in the business. The owner-managers may want to plough back as much money as possible; the family outside the business may want generous dividends, especially if there is no ready market for their shares."[13]

Hence, dividends - or payout to shareholders in general[14] - may be of special importance for family firms, especially if there are tensions between different members of the family.

Following the lower agency conflict I rationale (due to monitoring incentives and interest alignment, cf. section 2.2.2), family firms are expected to have less need for payout to shareholders to discipline management. Consequently, lower agency conflict I is assumed to lead to less payout in family firms. If monitoring by the family blockholder is the reason for lower agency conflict I, family ownership per se is assumed to lead to less payout. In

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[12]Cf. section 4.2.1 for a similar argumentation in the context of capital structure decisions. There it is argued that interest payments discipline the management.

[13]Anonymous author (2000).

[14]Payout to shareholder can be conducted by two ways: Dividends and share repurchases. As described in section 4.3.2, I explicitly consider this in my empirical analysis.

contrast, only family ownership in combination with family management is assumed to decrease payout to shareholders if interest alignment is the rationale for lower agency conflict I.

However, other theoretical considerations suggest that family firms show higher levels of payout to shareholders. As argued before, agency conflict II might be higher in family firms. The private benefits of control relevant for the family are *risk aversion* and *control retention*. While risk aversion is not assumed to influence payout policy, the family's desire for control retention can lead to higher levels of dividends. As mentioned in the Economist statement cited above, the family might not want to abstain from generating a steady income in order to fund their personal consumption. In this context, the family has two possibilities to generate income: Selling shares or receiving payout from "their" firm. Since control retention is assumed to be of high importance for the family shareholders, selling shares in not attractive for them because this would decrease their control over the firm. Consequently, the only possibility to generate income without loosing control is payout from the firm. Consequently, family firms are expected to show higher levels of payout if the control retention rationale holds true.[15]

Behind the background of the higher agency II in family firms, they are expected to show higher levels of payout than their non-family counterparts due to their desire for an steady income stream without loosing control over "their" firm. In particular, family ownership is expected to lead to higher levels of payout since the general shareholders' meeting has a huge influence on the payout policy.[16] Family management in combination with

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[15]Another possible explanation for higher payouts in family firms is provided by La Porta et al. (2000*a*). They argue that dividends can reduce agency conflict II since they guarantee a "pro-rata" payout to all shareholders. Hence, family firms might be forced by minority shareholders to increase their payout (this is what the authors call the "outcome model"). Furthermore, the so called "substitution model" of La Porta et al. (2000*a*) states that controlling shareholders interested in issuing new equity pay higher levels of dividends to establish a reputation for good treatment of minority shareholders. In their cross-country analysis, they only find evidence consistent with the "outcome model". However, following my prior argumentation, neither the "outcome model" nor the "substitution model" are in contrast to the control retention rationale since both family and minority shareholders might prefer a high level of payout. It is important to note that this argumentation holds only true for family shareholders which have a desire for control retention. For other types of blockholders, different private benefits of control are of importance. Consequently, these other blockholders might avoid a "pro-rata" distribution of corporate earnings. Furthermore, agency conflict III can influence payout policy as well (cf. Brockman and Unlu (2009)). However, lower agency conflict III is not considered in my empirical research design. The rationale for this is that payout restrictions by creditors are uncommon in the German environment since payout is restricted by federal law (cf. Leuz et al. (1998)). Cf. section 2.2.4 for a more comprehensive discussion of agency conflict III and payout policy.

[16]As argued in section 2.3.4, the annual shareholder meeting has to approve the managements payout

family ownership is expected to even further increase payout due to the family's higher possibilities to influence the corporate policy.

Taking the prior arguments into considerations, the following hypothesis are constructed for family firms and payout policy:

PA-H1: Lower agency conflict I in family firms leads to less payout.

PA-H1a: Interest alignment between family shareholders and managers leads to less payout.

PA-H1b: Monitoring incentives of family shareholders lead to less payout.

PA-H2: Higher agency conflict II in family firms leads to more payout (with control retention as private benefit for the family).

4.2.3 Diversification

From a theoretical point of view, it is a priori not clear if and why firms engage in diversification strategies since diversification has both costs and benefits (cf. section 3.3.3). Among the potential explanations for diversification is agency theory. As argued in sections 2.2.2 and 2.2.3, family firms have two peculiarities from an agency theory perspective that are important for diversification decisions: Lower agency conflict I, but higher agency conflict II.[17]

There are two reasons that support the view that **lower agency conflict I** influences the firm's diversification decisions. *First*, incentives for the managers to use the firm's free cashflow to undertake inefficient (diversifying) investments or empire building are lower in family firms (cf. Jensen (1989), Stulz (1990) and Denis et al. (1997)). *Second*, Aron (1988) proposes a different role of diversification within an agency conflict framework. In his model, he points out that it is easier to judge about both managerial ability and effort if the firm is engaged in more than one line of business. In this sense, corporate diversification can be seen as a way to increase the observability of the agent's actions and thus mitigate agency conflict I. Since agency conflict I is assumed to be lower in

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proposal.

[17]In the context of diversification decisions, lower agency conflict III is not assumed to be of importance.

family firms, there are reduced benefits of multiple lines of business within these firms. To summarize, firm diversification is expected to be **lower** in family firms from an agency conflict I perspective.

Beneath lower agency conflict I, family firms may exhibit **higher agency conflict II** since large family shareholders have both the power and the incentives to extract private benefits of control from "their" firm. The first private benefit relevant for family firms is **control retention** (cf. section 2.2.3). From this perspective, the family may want to avoid raising additional external capital, which is accompanied by a loss of voting rights or higher creditor monitoring, to fund diversification projects. Furthermore, family firm may be reluctant to hire external managers with expert knowledge of new businesses and geographical segments. Hence, family firms are expected to have **lower** levels of diversification from the control retention perspective.

Despite control retention, **risk aversion** is a private benefit that is of special importance for family shareholders (cf. section 2.2.3). In this context, the family might try to compensate their poor equity diversification on the private level with risk-reducing strategies at the corporate level. Furthermore, invested (undiversified) human capital of the family can increase their risk aversion. For example, Amihud and Lev (1981) and Amihud et al. (1983) show that diversification reduces the employment risk of managers significantly. Under the risk aversion perspective, family firms are expected to exhibit a **higher** level of diversification than non-family firms.

The effects of pure family ownership and family ownership combined with family management depend on the rationale behind different diversification levels in family firms. In the context of agency conflict I, family management in combination with family ownership increases interest alignment, and hence reduces agency conflict I more effectively than monitoring incentives by pure family ownership. Contrary, family management can increase agency conflict II since it gives family shareholders more power to influence the firm's policy decisions and increases their possibilities to extract private benefits of control.

To summarize, theoretical predictions for family firms and diversification are not unambiguous. Hence, the following, partly conflicting, hypotheses are constructed:

DIV-H1: Lower agency conflict I in family firms leads to less diversification.

DIV-H1a: Interest alignment between family shareholders and managers leads to less diversification.

DIV-H1b: Monitoring incentives of family shareholders lead to less diversification.

DIV-H2: Higher agency conflict II in family firms leads to more or less diversification, depending on the private benefit.

DIV-H2a: Risk aversion leads to more diversification in family firms.

DIV-H2b: Control retention leads to less diversification in family firms.

The arguments pointed out above and the hypotheses apply for related, unrelated and total business segment diversification[18] and for geographical diversification. However, from a theoretical perspective there are some differences with these forms of diversification. In terms of control retention, the diversification in unrelated business segments should be less attractive for family firm than in related segments. The rationale behind that is twofold: First, diversification in unrelated business segments is usually more expensive (leading to more loss of control). Second, external expert knowledge is often necessary for the diversification in unrelated business segments. Hence, the firm has to hire new members for the top-management. In terms of risk aversion, diversification in related business segments is less attractive since the cashflow streams from similar business segments are often correlated.

4.3 Research design and variables

In this section, the research design and the relevant variables for the analysis of capital structure, payout policy and diversification decisions in family firms are presented.

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[18]Section 4.3.3 presents a detailed description of related, unrelated and total business segment diversification. In general, related business segment diversification occurs if firms diversify across similar business segments. Contrary, unrelated business segment diversification involves the diversification across business segments which are not linked to each other.

4.3.1 Capital structure decisions

This section describes the dependent and independent variables used for my analysis of capital structure decisions in family firms as well as related methodological remarks. Empirical results are presented in section 5.2 in chapter 5.[19]

Definition of leverage

Since there exists no single widely accepted definition of leverage, I apply several different measures:[20]

First, I start with a broad definition of book and market leverage. Book leverage is the ratio of total liabilities to total assets while the market leverage is the ratio of total liabilities to the market value of equity plus total liabilities. Thereby, preferred equity is treated as equity rather than debt.[21] By applying such a broad definition of leverage I follow several other studies on capital structure (e.g. Rajan and Zingales (1995), Fama and French (2002), Baker et al. (2002) or Kayhan and Titman (2007)). Moreover, just recently Elsas and Florysiak (2008) have applied similar definitions of leverage for a large sample study of capital structure in the German environment. It should be noted that this broad definition includes non-interest-bearing debt components, such as pension liabilities or accounts payable, and is likely to overestimate financial leverage.

$$\text{Book Leverage} = \frac{\text{TL}}{\text{TA}} \tag{4.1}$$

$$\text{Market Leverage} = \frac{\text{TL}}{V(E)_{market} + \text{TL}} \tag{4.2}$$

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[19]Please note that the following section is partly based on Ampenberger et al. (2009).

[20]Thereby, the following abbreviations are used: TL stands for total liabilities, $V(E)_{book}$ for the book value of equity, $V(E)_{market}$ for the market value of equity, TA for total assets FBL for financial book leverage and FML for financial market leverage.

[21]This is in contrast to several U.S. studies, e.g. Kayhan and Titman (2007) or Baker et al. (2002), who treat preferred equity as debt. My choice is related to the large differences in the arrangement of preferred equity between Germany and the U.S. Although it is true that also in Germany holders of preferred shares do not have a voting right in the shareholders assembly, it should be noted that the missing voting right has to be compensated by the payment of a preferred dividend tied to the dividend payment on common shares according to law. Moreover, the German stock corporation act (§140 AktG) states that a preferred share is transformed into a voting-bearing share whenever the firm cannot meet the payment of the preferred dividend in two subsequent years. And finally it should be noted that also from a tax perspective preferred shares are treated as equity. However, as indicated in the robustness section my results remain qualitatively unchanged if I treat preferred equity as debt.

Second, in order to control for this potential overestimation, I alternatively run all regressions for a leverage definition based on long-term debt. Long-term book leverage is defined as total liabilities minus current liabilities divided by total assets. Consequently, long-term market leverage is defined as total liabilities minus current liabilities divided by market value of equity plus total liabilities.

$$\text{Long-term Book Leverage} = \frac{\text{TL} - \text{Current liabilities}}{\text{TA}} \tag{4.3}$$

$$\text{Long-term Market Leverage} = \frac{\text{TL} - \text{Current liabilities}}{V(E)_{market} + \text{TL}} \tag{4.4}$$

Third, I calculate a financial leverage that only considers interesting-bearing debt components. The measure for the book value of financial leverage (FBL) is calculated as total liabilities minus non-interest bearing liabilities (NIBL) divided by total assets minus NIBL. Thereby, NIBL are defined as the part of the firm's liabilities that are non-interest bearing. Hence, they are calculated as the sum of sum of accounts payable, provisions for risks and charges (including pension liabilities) and deferred taxes. As in the two other measures of leverage, I replace the book value of equity with the market value of equity when I calculate the financial market leverage (FML).[22]

$$\text{NIBL} = \text{provisions} + \text{accounts payable} + \text{deferred taxes} \tag{4.5}$$

$$\text{FBL} = \frac{\text{TL} - \text{NIBL}}{V(E)_{book} + \text{TL} - \text{NIBL}} \tag{4.6}$$

$$\text{FML} = \frac{\text{TL} - \text{NIBL}}{V(E)_{market} + \text{TL} - \text{NIBL}} \tag{4.7}$$

All regressions are performed for these different definitions of leverage (cf. section 5.2 and the tables in the appendix). As the results indicate, the effects for family firms are rather stable and do not depend on the applied definition.

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[22]Please note that the *Worldscope* database does not in every case report all components that are imperative for the calculation of NIBL. As a consequence, I experience a huge drop in the firm-year observations that are eligible for the analysis of financial (book and market) leverage. Hence, the results of financial leverage have to be treated with some caution. Additionally, I eliminate all leverage ratios which are larger than one or below zero. This procedure is consistently applied for all definitions of leverage.

Definition of control variables

In the analysis of capital structure decisions in family firms, a broad set of control variables is applied. Frank and Goyal (2009) show that there are six core factors that can explain firm leverage for publicly traded U.S. companies over the period 1950 to 2003: Firm size, profitability, market-to-book ratio, tangible assets ratio, median industry leverage and expected inflation. I include all these factors, which are described below, in my empirical analysis.

FIRM SIZE: I use the natural logarithm of the number of employees to control for firm size. Firm size is included in all specifications to account for the fact that larger firms have a higher creditworthiness, easier access to debt markets and might be able to borrow at lower costs. Overall, I anticipate a positive relation between firm size and leverage.

PROFITABILITY: An operating profit margin calculated as earnings before interest, taxes, depreciation and amortization divided by total assets is applied as proxy for firm profitability. The pecking order theory suggests that firms prefer to finance new investment projects with retained earnings followed by new debt while issuing external equity is only the last resort of financing. Consequently, I expect an inverse relationship between the firm profitability and the leverage ratio.

MARKET-TO-BOOK: I control for the firm's growth options by including the market-to-book ratio into the regressions. Because firms with larger growth opportunities may prefer to retain earnings instead of distributing them, I expect market-to-book ratios to be negatively related to leverage.

TANGIBLE ASSETS RATIO: I include the ratio of tangible to totals assets in the analysis to account for the fact that tangible assets may be used as collateral and hence increase borrowing capacity. I expect the tangibility ratio to be positively correlated to the firm's leverage.

INDUSTRY LEVERAGE: The median industry leverage is included as a control for industry characteristics. Firms operating in highly levered industries are expected to exhibit higher leverage ratios. For example, Frank and Goyal (2009) show that the industry

median leverage ratio has the single largest explanatory power for the firm-level leverage in their long-term dataset on U.S. firms. Although I use industry dummies to control for industry effects in general, I therefore include industry median leverage in the regressions as an additional control variable. This measure is calculated for each industry and year, whereby the firm's industry classification is based on its 1-digit primary SIC code. Of course, I expect industry leverage to have a positive impact on firm leverage.

EXPECTED INFLATION: The expected inflation rate is another variable with high explanatory power for leverage ratios. I anticipate firms to show higher levels of leverage if the expected inflation rate is high since debt becomes more attractive in these time periods. In the analysis, I use the next year's realized inflation rate as a proxy for the expected inflation rate. In order to investigate if this adaptation leads to biased results, I apply the one-year inflation rate forecast of the German Council of Economic Experts as an alternative measure of expected inflation (results not reported).[23] However, the results for these two measures are qualitatively the same.

Besides the control factors proposed by Frank and Goyal (2009) presented above, I include several additional variables in the regressions. These variables are described below.

PAYOUT RATIO: Calculated as dividends to common shareholders divided by net income available to common shareholders. However, the ratio is adapted in the following way: It is set to one if it is negative (because of negative income) or above one (because of higher payout than income).[24] Following Rozeff (1982) who predicts an inverse relationship between dividend payout and leverage, I expect a negative correlation between leverage and the payout ratios.

FIRM AGE: Firm age is the natural logarithm of the number of years since the firm's incorporation. Thereby, the number of years since the firm's incorporation is calculated as the current sample year minus the founding year of the firm. I expect younger firms ceteris paribus to have better growth options than older firms. Younger firms might prefer to retain earnings within the firm to finance their risky growth options.

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[23]Unfortunately, this forecast is not available before 1998. Hence, I decided not to use it as the main measure for inflation.

[24]A detailed discussion of this approach is presented in section 4.3.2).

Simultaneously, I hypothesize that older firms have a better borrowing capacity and are more profitable. Hence, the expected relationship between firm age and leverage is positive.

FIRM-SPECIFIC RISK: One potential concern is that family ownership is not randomly assigned to different industries. In particular, instead of applying risk-reducing strategies at the firm level, founder families might prefer to invest in low-risk businesses and industries. Consequently, I include a measure of firm-specific risk. Firm specific risk captures the part of stock prize volatility that is unique to an individual firm and thus related to specific operations or capital structure decisions. It is calculated as the residuals' sum of squares (SSE) from a regression of the individual stock returns on the returns of the market (CDAX) over the preceding calendar year based on stock prizes from calendar year end.[25] Since higher debt-to-equity ratios increase the firm's risk of default, I expect a positive relationship between firm-specific risk and leverage.

OUTSIDE BLOCKHOLDERS: Decisions about capital structure are dependent on the firm's governance structure. Monitoring by outside shareholders might be a suitable corporate governance device to alleviate the agency conflict I. The construction of this variable is described in section 4.1.2.

ACCOUNTING STANDARD: The dummy variable takes value one if the firm applies German GAAP and value zero otherwise. In Germany, the sample period 1995 to 2006 is characterized by a huge heterogeneity in terms of applied accounting standards (cf. section 2.3.3). Due to the prudence principle of the German GAAP, I expect a positive relationship between the usage of German GAAP and the leverage ratio.

TIME- AND INDUSTRY DUMMIES: Theory predicts that mature industries with less opportunity for asset substitution (Jensen and Meckling (1976)) have higher leverage ratios. Hence, I use industry dummies based on 1-digit SIC codes in all the regressions to control for such industry specifics. Furthermore, capital structure decisions might be subject to macroeconomic and legal conditions. To control for such time

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[25]One might argue that a measure of total risk (market risk plus firm-specific risk) is more suitable than firm-specific risk in this context. However, as indicated in the section about the robustness of the results I have used total risk as an alternative control variable in the analysis. Results remain unchanged and are therefore robust to the usage of total risk as an alternative measure of firm risk.

effects I include year dummies in all the analysis.

Methodological remarks

To analyze capital structure decisions, I run all regressions for the six presented leverage definitions. However, not all of these are reported in the main part of my analysis (cf. section 5.2). Since the results are quite similar for all definitions, several specifications are reported in the appendix.

In a first step, I analyze differences between family firms and non-family firms in general. After that, the components of a family firm (cf. section 2.1.2) are investigated separately. Of course, a large battery of robustness tests is included as well. To account for the advantages and drawbacks of the different panel regression models (cf. section 4.4.1), three different types of models are used for all specifications: Pooled-OLS, FE and BE estimators.

4.3.2 Payout policy

This section describes the research design and the variables used for my analysis of payout policy in family firms. Empirical results for payout policy are presented in section 5.3.[26]

Measurement of payout

Data on dividends and share repurchases are obtained by *Thomson Worldscope*.[27] As argued in section 2.3.4, there were several changes in the taxation of dividends and retained earnings during my sample period. Following previous research on dividend policy in Germany (cf. Goergen et al. (2005) and Andres et al. (2008)), I use "zero distribution profits" (ZDPs) to calculate the payout ratios used in empirical analysis. ZDPs are defined as:

$$\text{ZDP} = \frac{D(1 - t_c)}{1 - t_d} + R \tag{4.8}$$

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[26]Please note that the following section is partly based on Schmid et al. (2010).

[27]In terms of share repurchase, the quality and scope of the reported data is very limited. Hence, I manually collected part of the data with help of the firms' annual reports.

Thereby, t_d stands for the tax rate on distributed dividends, t_c for the tax rate on retained earnings, D for the dividends after corporate tax and R for retained earnings (after corporate tax).

In a first step I analyze the propensity to pay out dividends or buy back shares. For this purpose, several measures are calculated:

DIVIDEND: A dummy variable for dividend payment which equals one if the firm pays any dividend to shareholders (common and preferred shares) and zero otherwise.

REPURCHASE: The variable equals one if the company buys back shares and zero otherwise.

PAYOUT: Dividend payments and share repurchases are substitutes for payout to shareholders. Hence, an additionally dummy variable for the total payout propensity is created. This variable equals one if the firm either pays dividends or repurchases shares and zero otherwise.

In a second step, the level of payout with regard to dividends, share repurchases and total payout is analyzed. The following measures are applied in the empirical analysis:

DIVIDEND PAYOUT RATIO: This ratio is calculated as the total amount of common and preferred dividends divided by zero distribution profits (ZDP). However, the ratio is adapted in the following way (as suggested by Julio and Ikenberry (2004) and von Eije and Megginson (2008)): It is set to one if it is negative (because of negative ZDP) or above one (because of higher payout than ZDP).

SHARE REPURCHASE PAYOUT RATIO: This ratio is calculated as the total volume of repurchased own shares divided by ZDP. It is set to one if it is negative or above one.

TOTAL PAYOUT RATIO: Calculated as the total payout is the sum of the volume of dividends and share repurchases divided by ZDP. It is set to one if it is negative or above one.

As robustness tests, several other specifications are used. For example, the payout ratios are calculated with net income available to common shareholders instead of using zero distribution profits since this is more common in international studies. In addition, the

cashflow (calculated as zero distribution profits plus depreciation and changes in pension provisions) is used as denominator in the payout ratios. This is related to the argumentation of Andres et al. (2008) that German firms determine their dividend payments based on cashflows rather than earnings. Again, as indicated by the robustness tests, the results remain qualitatively unchanged.

Definition of control variables

In the multivariate analysis of the firms' payout policy, several control variables are applied. The following section explains their construction and why they are of importance in the context of payout policy:[28]

OUTSIDE BLOCKHOLDER [25%]: Payout policy is assumed to depend on the firm's governance structure. In particular, the payout policy decisions might not only be influenced by family shareholders, but also by other large shareholders (cf. Gugler and Yurtoglu (2003)). Section 4.1.2 explains the construction of this variable.

VOTING-CASHFLOW WEDGE: This variable is a dummy variable that is one if there is a deviation of ownership and cashflow rights for the largest shareholder of the firm. This deviation can be the result of ownership pyramids, cross-holdings or dual-class shares. I use this variable since especially founding families might use such control-enhancing devices in order to retain their strong control over the family business (cf. Villalonga and Amit (2009)).

FIRM SIZE [ASSETS]: As shown by Fama and French (2001), large and profitable companies are more likely to pay dividends. Hence, I include firm size, measured by the natural logarithm of total assets, as control variable in all of the regressions.

PROFITABILITY [ZDP]: Furthermore, it is important to control for profitability in all regressions dealing with payout propensity.[29] The level of profitability is measured

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[28]Although some of the these control variables were described already in in section 4.3.1 dealing with control variables for the capital structure analysis, I describe them again in this section. The reasons for this is that the rationale for the application of the control variables is - from an theoretical point of view - not necessarily the same for different corporate policy decisions. Hence, it is important to explain the usage of the control variables for every single corporate policy decision.

[29]In the regressions with a payout ratio as dependent variable, it is not necessary to control for profitability since the dependent variable already includes this factor.

by zero distribution profits (ZDP) scaled by totals assets.

BOOK LEVERAGE: Book leverage is defined as the firm's total liabilities divided by total assets (cf. section 4.1.2). Following the "free cashflow hypothesis" of Jensen (1986), leverage and dividends are substitutes in disciplining management. From this perspective, the book leverage ratio as an alternative mechanism to reduce agency costs of free cash flow is included. Firms with high leverage ratios are expected to face lower agency problems because they pay higher interest rates on their loans and hence have less free cashflow.

FIRM SPECIFIC RISK: One potential concern is that family firms are not randomly assigned to industries with different risk profiles (cf. Villalonga and Amit (2010)). Consequently, a measure of firm specific risk is included in the regressions. Firm specific risk captures the part of stock prize volatility that is unique to an individual firm and thus related to specific operations. It is calculated as the residuals' sum of squares (SSE) from a regression of the individual stock returns on the returns of the market (CDAX) over the preceding calendar year based on stock prizes from calendar year end.

FIRM AGE: The number of years since the firms' incorporation. It is calculated as the current sample year minus the year of the firm's incorporation. Following Fama and French (2004b), younger firms are expected to have better internal growth options than older firms. By contrast, mature firms are more likely to distribute a larger proportion of their corporate earnings to shareholders. Hence, the expected relationship between firm age and dividend payment is positive.

MARKET-TO-BOOK: This measure controls for the firm's growth opportunities. Firms with good investment options may prefer to retain earnings instead of distributing them. Hence, the market-to-book ratio is expected to be negatively correlated with payout.

MEAN INDUSTRY LEVEL: The payout decisions of firms may be influenced by the behavior of other companies in their industry. Recent survey evidence on this topic is, for example, provided by Brav et al. (2005). Hence, I include the mean level of the dependent variable in a certain industry in the regressions. Thereby, the firm's

industry is measured by the first digit of its primary SIC code for each year. Of course, a positive relationship between the firm's payout decisions and the behavior of its industry peers is expected.

ACCOUNTING STANDARD: Finally, as already described in the section about the institutional environment (cf. section 2.3.3), the applied accounting system might have a major impact on reported corporate earnings.

To control for industry peculiarities, industry dummies based on 1-digit SIC codes are included. Payout policy decisions might be subject to macroeconomic and legal conditions as well. For example, a change in taxation of dividends - which has occurred in 2001 (cf. section 2.3.4) - might have a direct influence on the payout policy decisions. To control for such time effects, I include year dummies in the analysis.

Methodological Remarks

In my analysis I focus on voting rights (instead of cashflow rights) of the family shareholders. The rationale for using voting rights is that only voting rights enable the shareholder to influence firm policy during the annual shareholder meeting. Since my dissertation focuses on the question if and how families influence corporate policy decisions, voting rights are the best way to measure their impact on corporate policy. However, the **first major concern** with my analysis of payout policy is that dividends are distributed on a pro-rata basis according to the shareholders' cashflow rights. Whenever there is a deviation from the one share-one vote principle, shareholders might have strong incentives to seek other forms of compensation not based on a "pro-rata" income distribution. Since German ownership structures are historically frequently characterized by pyramids, cross-holdings and dual-class shares (cf. Köke (2001)), I consequently integrate a dummy variable into my analysis indicating whether there is a wedge between control and cashflow rights.[30]

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[30]I suspect that deviations from the one share-one vote principle have been mitigated during the last decade, with respect to the following legal reforms: The act on control and transparency of corporations in 1998 (Gesetz zur Kontrolle und Transparenz im Unternehmensbereich, KontraG) has abandoned the legality of multiple voting shares. Moreover, the issuance of (non-voting) preferred shares is limited to at most 50% of the ordinary share capital according to §139 AktG. However, the policy to issue preferred shares has declined heavily among newly listed firms over the last decade. Hence, the phenomenon of preferred shares does only occur in 284 firm-year observations (6% of all firm-year observations) in the sample. Finally, with the tax reform in 2002 capital gains tax have no longer been incurred on divestitures of equity ownership stakes at the corporate level. This reform intends to reduce cross-holdings and the

The **second major concern** in the context of this analysis is that the results may be biased by changes in the taxation of payouts and retained earnings. However, the applications of ZDP is assumed to alleviate these concerns. Furthermore, I control for tax effects by including year dummies in my regressions and by dividing my sample into two time periods (from 1995 to 2000, i.e. before the tax reform and from 2001 to 2006, i.e. after the tax reform) in a robustness test (cf. section 5.3.3). However, the results are roughly the same during both sub-periods and therefore robust to the changes in taxation.

In terms of methodology, I apply several different models: For the regressions on the dummy variables for dividend payout, share repurchases or any payout, probity models with clustered standard errors are used. In the context of payout ratios, pooled-OLS, FE and RE estimators are applied. Details on these models are described in section 4.4.1.

4.3.3 Diversification

This section describes the research design and the variables used for my analysis of diversification decisions in family firms. Empirical results are presented in section 5.4 in chapter 5.[31]

Measurement of corporate diversification

The following section describes the measurement of the firm's diversification level in terms of business segment and geographical diversification. The diversification variables are based on the firm's segment reports which were obtained by *Thomson Worldscope*. They include information on both the business segments (i.e. sales per SIC code) and the geographical segments (i.e. sales per country).[32]

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financial institutions' common equity holdings of industrial firms (cf. Goergen et al. (2008).

[31]Please note that the following section is partly based on Schmid et al. (2008).

[32]Before calculating the diversification measures, some data adaptation was necessary. For example, I had to eliminate business segments which are related to intra-firm operations and assign single countries to larger regions. Furthermore, there are some limitations to these measures of business segment and geographic diversification as already noted by e.g. Gompers et al. (2005): First, firms have discretion in which businesses they compose together to one business segment. Thus, some companies that pool different businesses together into one business segment may be equally or even more diversified than others which report multiple business segments. Second, another measurement problem is that *Thomson Worldscope* reports only a maximum of ten business segments. Within my sample there are 37 firm-year observations where the maximum of ten business segments is reported. I decided to exclude the 37 firm-year observations from my analysis because of this potential measurement error. Concerning the geographic diversification

Information on the business segments is used to calculate an entropy index for **business segment diversification**. Therefore, I use the sales and the SIC code of the single business segments. Following Jacquemin and Berry (1979) and Markides (1995) in terms of methodology, I calculate three different entropy indices for total, related and unrelated diversification.

For *related* and *unrelated* diversification, it is important distinguish between industry segments and industry groups. Industry segments are characterized by a unique 4-digit SIC code. Contrary, industry groups include a number of industry segments and are identified by their 2-digit SIC code. Unrelated diversification occurs if firms diversify over two or more industry groups, whereas related diversification is linked to diversification within one industry group (and hence to diversification over industry segments). Consequently, the entropy index for unrelated diversification considers only diversification over industry groups and not within them. In contrast, the entropy index for related diversification neglects diversification over industry groups and focuses on diversification over industry segments. The entropy index for total diversification is the sum of the entropy index for related and unrelated diversification. The measures for total, related and unrelated business segment diversification (BSD) are calculated as:[33]

$$DR_j = \sum_{ij} P_{ij} \ln \left(\frac{1}{P_{ij}} \right) \tag{4.9}$$

$$\text{Related BSD} = \sum_{j=1}^{M} P_j DR_j \tag{4.10}$$

$$\text{Unrelated BSD} = \sum_{j=1}^{M} P_j \ln \left(\frac{1}{P_j} \right) \tag{4.11}$$

$$\text{Total BSD} = \sum_{i=1}^{N} P_i \ln \left(\frac{1}{P_i} \right) = \text{Related BSD} + \text{Unrelated BSD} \tag{4.12}$$

Thereby, P_i indicates the share of the i-th segment in the firm's total sales and N is the number of different segments the firm is generating sales in. Consequently, P_j is the share of the j-th industry group in the firm's total sales and M is the number of

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there is some discretion in the choice of and the assignment to the different regions.

[33] For a detailed overview on the construction of the entropy index, cf. Jacquemin and Berry (1979) and Markides (1995).

different industry groups. Furthermore, I apply dummy variables which indicate if the firm has related, unrelated and total diversification in the sense that it has more than one business segment (RELATED BSD [DUMMY], UNRELATED BSD [DUMMY], TOTAL BSD [DUMMY]). These variables equal one if the firm has related, unrelated or total business segment diversification and zero otherwise.

I use information on geographical segments to calculate an entropy index for **geographical diversification**. However, there is a high variation how the *Thomson Worldscope* database reports geographic segments. For example, sometimes only large geographic regions, such as Europe, Asia/Pacific or North America are reported while in other cases geographic segments are reported even on a country level. For reasons of comparability, I decided to aggregate the data on geographic segments to the following four regions: Europe including Germany, America (covering both North and South America), Asia/Pacific (covering Asian countries like Japan, China or Korea and pacific countries such as Australia or New Zealand) and other countries[34]. Additionally, I generate a dummy variable which indicates if the firm has any sales outside Europe (GEOGRAPHICAL DIVERSIFICATION [DUMMY]). This variable equals one if the firm has geographical diversification and zero otherwise.

In my robustness section, several **alternative measures** for business segment diversification are used:

NUMBER SEGMENTS: The number of business segments based on four-digit SIC codes

OUTSIDE SALES: The share of sales generated outside the firm's main business segment as indicated by the 4-digit SIC code segment with highest sales

HERFINDAHL: The Herfindahl index of diversification for sales based on the four-digit and two-digit SIC codes of the business segments. The 4-digit Herfindahl index is calculated as $\sum_{i=1}^{N} P_i^2$. Consequently, the 2-digit industry equals $\sum_{j=1}^{M} P_j^2$. For reasons of easier interpretation I use 1-Herfindahl index as measure of diversification. Thus, this measure increases with the diversification level.

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[34]In this context, I assign all sales of country descriptions like "others", "foreign countries", "rest of the world" to this region.

Definition of control variables

In my analysis, I use a set of control variables, which are described in the following.

OUTSIDE BLOCKHOLDERS: Decisions about diversification depend on the firm's governance structure. Consequently, I include the cumulative ownership of large outside shareholders. The construction of this variable is described in section 4.1.2.

FIRM SIZE: Firm size is measured as the natural logarithm of the number of employees and is included in all specifications to account for the fact that larger firms are usually more diversified than smaller firms.

ACCOUNTING STANDARD: My sample period is characterized by heterogeneity in terms of accounting requirements (cf. section 2.3.3). To control for potential differences in terms of how business segments and geographical segments are reported under different accounting systems, I include a dummy variable that is one if the firm uses German GAAP and zero otherwise.

TANGIBLE ASSETS RATIO: Calculated as tangible assets divided by total assets. Firms (and industries) with large tangible assets might have different preconditions to undertake corporate diversification. For example, such firms can use their tangible assets as collateral in order to raise external financing for acquisitions.

MARKET LEVERAGE: Leverage is defined as total liabilities divided by the sum of the market value of equity and total liabilities (cf. section 4.1.2). Following the "free cashflow hypothesis" of Jensen (1986), leverage is a mechanism to discipline management and avoid value-reducing investments or empire building. Furthermore, largely indebted firms may have less opportunities to engage in diversification.

PAYOUT RATIO: Calculated as dividends to common shareholders divided by net income available to common shareholders. However, the ratio is adapted in the following way: It is set to one if it is negative (because of negative income) or above one (because of higher payout than income).

PROFITABILITY: I use an operating profit margin calculated as earnings before taxes, depreciation and amortization (EBITDA) divided by total assets as a proxy for firm profitability.

MARKET-TO-BOOK: It is reasonable to assume that firms with strong growth options in their core business are less likely to diversify than firms whose future is endangered by stagnating or even declining growth in the core business. I use the market-to-book value as a proxy for the firm's growth options.

VOTING-CASHFLOW WEDGE: This variable is a dummy that is one if there is a deviation of ownership and cashflow rights for the largest shareholder. This deviation can be the result of ownership pyramids, cross-holdings or dual-class stocks. I use this variable to control for the effect that founding families might use such control-enhancing devices in order to retain a strong control over the family business (cf. Villalonga and Amit (2009)).

FIRM-SPECIFIC RISK: One potential concern is that family firms are not randomly assigned over different industries. In particular, instead of applying risk-reducing strategies like diversification at the firm level, founding families might prefer to invest in low-risk businesses and industries. Consequently, I include the natural logarithm of firm-specific risk to account for these effects. Firm-specific risk captures the part of stock prize volatility that is unique to an individual firm and thus related to specific operations. It is calculated as the residuals' sum of squares (SSE) from a regression of the individual stock returns on the returns of the market (CDAX) over the preceding calendar year based on stock prizes from calendar year end.[35]

FIRM AGE: Firm age is the number of years since the firms' foundation. It is calculated as the current sample year minus the founding year of the firm. I expect older firms to be more diversified than younger firms.

In addition, I include year dummies and industry dummies based on the firm's primary SIC code as well as a constant term in all the models.

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[35]One might argue that a measure of total risk (market risk plus firm-specific risk) is more suitable than firm-specific risk in my context. However, I have used total risk as an alternative control variable in this analysis. Results remain unchanged and are therefore robust to the usage of total risk as an alternative measure of firm risk.

Methodological Remarks

However, in terms of methodology there are **three major concerns** with a simple comparison of family and non-family firms.

The **first major concern** is related to the question whether the diversification decision (that might have happened at some point of time in the past) is directly related to the current ownership structure. In particular, transitions from family firms to non-family firms can potentially bias the results. To alleviate this problem, I use the following sampling procedure: I only include a firm-year observation in the sample if there is no transition from a family firm to a non-family firm in the prior four years. Hence, I require a four year tracking period before a firm can enter the sample. In order to treat family firm and non-family firm observations equally, I require the same four year tracking period for family firms as well.[36] For example, consider a firm for which ownership and board structure data is available from 1995 on. In this case I only consider firm-year observations from 1999 to 2006 for the analysis and I only consider them if there is no transition from a family firm to a non-family firm in the 1995 to 1998 period (and of course also beyond). Thereby, I end up with a sub-sample of 543 firms and 2,416 firm-year observations, with 1057 firm-year observations from family firms and 1,359 from non-family firms (cf. 4.4 for a detailed composition of the full sample). This sampling procedure, which is similar as the one used by Gomez-Mejia et al. (2010), has the following advantage: Diversification decisions in family and non-family firms can be separated more accurately since firms can adjust their diversification level during this four year period after they evolved from a family to a non-family firm.

The **second major concern** in terms of methodology is that governance structures might be endogenous (cf. Himmelberg et al. (1999) and Adams et al. (2009), among others). In order to alleviate this concern an instrumental variable approach is applied. A more detailed discussion on this problem is provided in section 4.4.2.

The **third major concern** is related to the life cycle of the firm. A simple comparison of family and non-family firms may be biased due to the fact that family firms are younger

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[36]Technically, this would not be necessary since family firms have always been family firms (since I use a founding family definition). However, not requiring the tracking period for family firms would lead to an over-representation of family firms in the sample and hence to a potential source of bias.

and hence less diversified. Even after controlling for firm age there may be non-linear effects which are hard to capture in a regression framework. To alleviate these concerns, I do not only analyze differences between family firms and non-family firms, but divide family firms in the two sub-groups real family firms and founder-controlled firms (cf. sections 2.1.2 and 4.1.2 for a detailed description). If the life-cycle of the family business is important for diversification decisions, I expect founder-controlled firms to be rather focused on their core business relative to non-family firms. Regarding real family firms, which are usually older and at least under the control of the second family generation, I expect no significant differences in terms of corporate diversification relative to non-family firms if diversification decisions are purely a consequence of the firm's life cycle.

4.4 Estimation methodology

The following section describes important aspects of the estimation methodology. However, the field of econometrics is too large to be summarized in this dissertation. Consequently, I only discuss the most important aspects for my empirical analysis. A recent and comprehensive overview on econometrics is for example provided by Angrist and Pischke (2009).

4.4.1 Panel regressions

The data structure is organized as an unbalanced panel of 660 firms that are tracked over the 1995 to 2006 period. The panel structure of the data allows me to use four types of panel regression estimates: pooled ordinary least squares (pooled-OLS), random effects (RE), between-firm effects (BE) and firm-fixed effects ("within", FE) estimates. From an econometric point of view, all four estimation procedures have advantages and disadvantages. While the BE estimates only employ cross-sectional variation, the FE estimates focus variation over time within each firm. The pooled-OLS and the RE estimator combine both aspects. They can be interpreted as weighted average of both the BE and FE estimators.

Thereby, the firm-fixed effects estimator has one important advantage: It offers the possi-

bility to control for unobserved, time-invariant firm heterogeneity.[37] However, under the background of rather time stable variables the results of the fixed effects estimator have to be interpreted with caution. Since the ownership and board structures among listed German firms are rather stable, thy offer little potential to exploit variation within a firm. As a consequence, the results for these estimations may be driven by variations in few firm-year observations.

Consequently, it is useful to include cross-sectional variance by the BE, pooled-OLS and RE estimators as well. In addition, BE estimates allow to mitigate concerns that observations drawn repeatedly from the same sample firm are not independent from each other. Contrary to the FE estimates, BE, pooled-OLS and RE estimates may be biased if unobservable, firm-specific factors exist, leading to a correlation of the error term with the independent variables. This happens if the models fail to include all relevant explanatory variables that are correlated with both the regressors and the dependent variable ("omitted variable bias", cf. section 4.4.2). Since no single model combines all advantages, I always report the estimates of several models. Thereby, the "main" model which is always included is the pooled-OLS model. Probit models are comparable to pooled-OLS models, but preferable if the dependent variable is binary, i.e. zero or one. Another suitable model in this context is a logit regression. However, both models are closely related. Hence, the application of logit regression instead of probit regression does not change my results (results for logit regressions are not reported).

For the capital structure analysis, I apply pooled-OLS, FE and BE regressions. For the analysis of diversification decisions of family firms, I use three types of regressions:[38] Probit regressions on a binary variable that is one if the firm diversifies and zero otherwise, pooled-OLS regressions on the entropy measures and BE regressions on the averages of the entropy measures. In the context of payout policy, probit models, pooled-OLS, RE and FE estimates are reported.

The correct estimation of standard errors is of huge importance when analyzing panel

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[37] In the context of capital structure decisions, a recent study by Lemmon et al. (2008) indicates that the adjusted R-squares of leverage regressions with firm-fixed effects are much higher than the adjusted R-squares from traditional leverage regressions. Hence, such firm-fixed effects seem to have a high explanatory power for capital structure decisions.

[38] Please note that the usage of FE regression is not meaningful in this context since the variation of the family firm status is restricted by the sample composition (cf. section 4.3.3).

datasets. Following the argumentation of Petersen (2009), I calculate the standard errors in the pooled-OLS, the RE and the FE specifications using the cluster-robust VCE estimator (this is not necessary for the BE estimates since there is only one observation per firm). The calculation includes adjustment for non-i.i.d. distributed standard errors, resulting both from heteroskedasticity and time-series correlation (Huber-White standard errors, cf. White (1980)).

For all models, I calculate variance inflation factors (VIFs) to analyze whether there is multicollinearity within the independent variables. However, the VIFs are low in all models, which indicates that there is no multicollinearity problem in my analysis. Consequently, I decided not to report the VIFs.

4.4.2 The problem of endogeneity

One common problem with empirical corporate governance studies is the potential endogeneity of ownership, board composition and corporate policy. By and large, endogeneity can arise from three different sources: (i) measurement error (ii) reverse causality between the dependent and the independent variable and (iii) omitted variables. I want to focus the discussion of reverse causality and omitted variables in the following since no natural solution exists for measurement error.[39] An excellent overview on instrumental variables and propensity score based matching is provided by Khandker et al. (2009).

Reverse causality

The panel structure of the data allows me to employ lagged independent variables. While lagged variables cannot completely solve the endogeneity problem they are suitable to lower the concern of reverse causality. However, this approach has several drawbacks and is therefore only applied as an additional test for reverse causality.

A second, more promising method to alleviate concerns of reverse causality is a matching

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[39]To deal with measurement errors, I apply a huge number of robustness tests for each analysis, including tests for misspecification and alternative control variables. Of course, this can not completely solve the potential problem of a measurement error. However, to my best knowledge there exists no "natural" solution for this problem.

approach.[40] For this, a natural solution would be to match family firms with similar non-family firms. However, for the application of matching estimators it is a crucial aspect to restrict the choice of the variables that define the probability of a treatment ("propensity score") to ones that are not influenced by the treatment itself. This is necessary in order to assume exogenous or unconfounded assignment to treatment. As a practical consequence, the matching procedure must rely on pre-treatment variables. The natural treatment in this case would be the status as a family firm itself. However, in this case there are no pre-treatment variables, since family firms according to my definition are already incorporated as a family business.

Hence, I have to use another treatment which is the change from a family firm to a non-family firm.[41] Thereby, I construct the matched sample as follows: *First*, I identify those firms which evolve from a family firm to a non-family firm. This advancement is used as treatment. *Second*, firms that do not evolve from a family to a non-family firm during my sample period are categorized as "untreated". *Third,* the "treated" firms are matched to "untreated" firms which had a similar propensity to evolve from a family to a non-family firm. The matching is based on the calculated propensity score, i.e. the probability that a family firm changes to a non-family firm. This ensures that the matched firms had a comparable probability to evolve from a family firm to a non-family firm. The rationale behind this procedure is to demonstrate that the treatment (which is the change from a family firm to a non-family firm) has a significant impact on the corporate policy decision of interest.

The propensity score is based on pre-treatment variables that are assumed to influence both the probability of treatment and the outcome. This is necessary to ensure that the outcome variable is independent of treatment conditional on the propensity score. To match the firms based on the propensity score, several methods are available. I focus on two common ones: Nearest-neighbor matching and kernel matching. While nearest-neighbor matching uses the non-treated firm with the closest propensity score, kernel matching uses a weighted sum of non-treated firms with similar propensity scores (cf.

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[40]Cf. Rosenbaum and Rubin (1983), Heckman et al. (1997) or Todd (2006) for a more detailed description of the applied methodology.

[41]Cf. Klasa (2007) for application of a similar treatment in the construction of a matching estimator. Klasa (2007) uses this procedure to study what determines the founding families' decision to finally sell their remaining ownership stake within the family business.

Todd (2008) for a detailed description of the matching procedure).

For this, I am able to identify 115 firms[42] which evolve from a family to a non-family firm. I decided to apply the following variables to calculate the propensity score (measured one year before the treatment): Family ownership, number of family members in the supervisory board, number of family members in the management board, outside blockholders, firm size, profitability, firm age and industry classification (based on the 1-digit SIC code).

Further details on the matching procedure are described in the empirical part of this dissertation (cf. sections 5.2.4 and 5.3.3). However, it should be noted that one limitation of this approach is that I can match only on observables (cf. Angrist (1998)). Hence, omitted variables that influence both the probability of a treatment and the outcome can still cause endogeneity. The next section deals with the problem of omitted variables and its possible solutions.

Omitted variables

A possible problem more difficult to deal with is omitted variables, especially if the (unknown) firm factors affects both the dependent and independent variables (cf. Himmelberg et al. (1999) for a detailed discussion of endogeneity in a similar context, i.e. managerial ownership and firm value). The fixed effects estimator is unbiased and consistent if I assume that potentially unobserved omitted variables are time constant (such as e.g. the firm's culture). However, if this is not the case and the unobserved, omitted variables are not constant over time, the endogeneity problem is still prevalent. To address this problem I use an instrumental variable approach. For this, it is necessary to identify a variable that is correlated with the potentially endogenous family firm characteristics but does not affect the dependent variable of interest directly. Consequently, the instrumental variable is uncorrelated with the omitted variables and the regression error (cf. Angrist and Krueger (2001)). I use the mean percentage of family firms per industry as an instrumental variable for the family firm dummy. Just recently, Villalonga and Amit (2010) concluded that families control certain industries. For example, according to Villalonga and Amit (2010) one example is the global beer industry: They argue that global play-

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[42]Please note that I can not use all 115 observations in my empirical analysis due to data availability constraints. The exact number of usable transitions is indicated in the corresponding sections.

ers such as InBev, Anheuser-Busch, SABMiller, Heineken, FEMSA or Carlsberg as well as many smaller breweries around the world are still dominated by the family or related foundations. In my dataset, I do also find that family firms are not randomly assigned through different industries (cf. table 4.5). By contrast, they seem to dominate certain industries while they are underrepresented in others. Hence, I argue that the correlation between the percentage of family firms in a particular 2-digit industry (where the sample firm of interest is excluded) with the dummy variable that indicates whether the sample firm is a family business or not should be high. At the same time the mean percentage of family firms in a particular industry should have no direct influence on the corporate policy decisions of an individual corporation. I use the 2-digit SIC codes to cluster the industries.[43]

Thereby I find indeed a high correlation of about 34% for the family firm variable and the mean fraction of family firms in a particular industry. Since the endogenous variable, i.e. the family firm status, is binary, a treatment-effects model is applied (cf. Khandker et al. (2009)). In the first-stage regression, I examine the determinants of a firm being a family business or not using the instrumental variable and all control variables except the mean industry level of the dependent variable as independent variables in a probit regression. Afterwards, I perform the second stage regressions to analyze whether family firms differ from non-family firms in terms of the corporate policy decision of interest. Of course, the instrument is excluded from the second-stage regressions ("exclusion restriction").

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[43]Of course, the specific company is excluded when calculating the average family firm status in a certain industry.

5 Empirical results

In this chapter, the empirical results for capital structure, payout policy and diversification decisions in famiyl firms are presented. The results are presented separately for each corporate policy decisions. In this context, I first focus on overall differences between family and non-family firms. In a second step, the influence of family ownership and management is analyzed. Third, robustness tests are presented to ensure the validity of the results. Finally, I address the question why family firms adapt their corporate policy decisions, or - in other terms - on the identification of the "force" governing family firms. Furthermore, descriptive results for my dataset are described.

5.1 Descriptive results

The following sections present the descriptive statistics. Thereby, I start with the ownership and board structures of the sample firms. After that, the firms' capital structure, payout policy and diversification decisions are described. Furthermore, descriptive statistics for selected control variables used in the multivariate regressions are shown.[1]

5.1.1 Ownership and board structures

First, I present descriptive statistics for ownership and board structures of German non-financial CDAX firms. The results are shown in table 5.1. Even in listed firms, the family

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[1]However, these descriptive results have to be interpreted with caution. Contrary to multivariate regression, these statistics are based only on one variable without controlling for others. Please note that the descriptive statistics dealing with capital structure decisions are partly based on Ampenberger et al. (2009), with payout policy on Schmid et al. (2010) and those dealing with diversification decisions on Schmid et al. (2008).

continues to remain an important shareholder. Furthermore, in many cases they are still involved in the firm's management and supervisory board. On average, families hold about 18% of the voting rights in all sample firms. Not surprisingly, they hold 38% of the voting rights in firms which are classified as FAMILY FIRM.[2] These figures underline the huge importance of listed family firms in Germany.

The average cumulative ownership of outside blockholders (i.e. blockholder with an ownership fraction of at least 5%) is 33.73% of the firm's voting rights. In family firms, it is only 15.23%, while it is on average 50% in non-family firms.

The average size of the firm's management board in my sample firms is 3.16 persons. Interestingly, family firms have smaller management boards (on average 2.94 persons) than non-family firms (with an average of 3.34 persons). The difference is statistically significant, as the t-test indicates. Again, the supervisory boards in family firms are smaller than those in non-family firms. In general, the family is represented in the firm's management (supervisory) board in about 32 (19) % of the firm-year observations. In family firms, the family is represented in the management (supervisory) board in about 69 (40) % of all firm-year observations.[3]

Table 5.1: Descriptive Statistics for Ownership and Board Structures

	All firms		Family firms		Non-family firms		
	Mean	*Median*	*Mean*	*Median*	*Mean*	*Median*	*t-test*
Family Ownership [%]	17.90	0	37.71	40.05	0.63	0	29.25
Outside Blockholders [%]	33.73	20.3	15.23	5.50	50.0	51.0	-16.97
Size Management Board	3.16	3	2.94	3	3.34	3	-3.34
Size Supervisory Board	7.56	6	5.32	3	9.54	8	-11.58
Family MB	0.32	0	0.69	1	0	0	...
Family SB	0.19	0	0.40	0	0	0	...

Note: ***, ** and * indicate significance on the 1%-, 5%- and 10%-level respectively. The t-statistics are corrected for serial correlation. A detailed definition of all variables can be found in table Appendix 1.
Source: Own work based on Schmid et al. (2010).

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[2]Families can hold voting rights in firms not classified as FAMILY FIRM as well. As the table shows, they hold on average 0.63% of the voting rights in those firms.

[3]Of course, their representation in non-family firms is zero since the presence of the family in either the management or supervisory board qualifies a firm as a family firm (cf. section 2.1.2).

5.1.2 Capital structure

Table 5.2 presents descriptive statistics for capital structure decisions, both for all sample firms and family and non-family firms. There are huge differences among these two sub-groups of firms in terms of capital structure. Since leverage is one of the corporate policy decisions analyzed in this dissertation, it is very interesting that the descriptive statistics indicate that family firms have lower levels of leverage than their non-family counterparts. The mean (median) book leverage is 0.49 (0.50) for family firms in comparison to 0.62 (0.66) for non-family firms. Similar differences occur for market leverage with 0.36 (0.39) for family firms in comparison to 0.54 (0.53) for non-family firms. Long-term book leverage is on average 0.26 (0.25) over all sample firms. Again, it is lower in family firms with 0.20 (0.17) than in non-family firms with 0.32 (0.31). Similar differences are found for long-term market leverage, financial book leverage and financial market leverage.[4]

Table 5.2: Descriptive Statistics for Capital Structure

	All firms		Family firms		Non-family firms		
	Mean	*Median*	*Mean*	*Median*	*Mean*	*Median*	*t-test*
Book Leverage	0.56	0.59	0.49	0.50	0.62	0.66	-9.27***
Market Leverage	0.47	0.46	0.36	0.39	0.54	0.53	-8.32***
Long-term Book Leverage	0.26	0.25	0.20	0.17	0.32	0.31	-9.53***
Long-term Market Leverage	0.22	0.20	0.16	0.12	0.26	0.25	-9.59***
Financial Book Leverage	0.48	0.48	0.43	0.41	0.51	0.53	-4.18***
Financial Market Leverage	0.35	0.37	0.28	0.33	0.39	0.41	-3.88***

Note: ***, ** and * indicate significance on the 1%-, 5%- and 10%-level respectively. The t-statistics are corrected for serial correlation. A detailed definition of all variables can be found in table Appendix 1.
Source: Own work based on Ampenberger et al. (2009).

Figure 5.1 illustrates the development of the average book and market leverage over the sample period 1995 to 2006. As can be seen, the book and market leverage remained rather constant over time. The book (market) leverage slightly decreased from about 0.65 (0.50) in 1995 to 0.55 (0.40) in 2006. Furthermore, the book leverage is higher than the market leverage for all sample years. However, the interpretation of the leverage development of time is not unambiguous since the sample composition changes over time (cf. chapter 4.1.4). Hence, it is difficult to distinguish if a change in the average leverage ratio is due

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[4]Unfortunately, the financial book and market leverage could not be calculated for a significant number of sample firm due to data constraints. Hence, the comparison between these two leverage ratios and the other four ratios may be biased by a different number of firm-year observations used to calculate them.

Figure 5.1: Book and Market Leverage
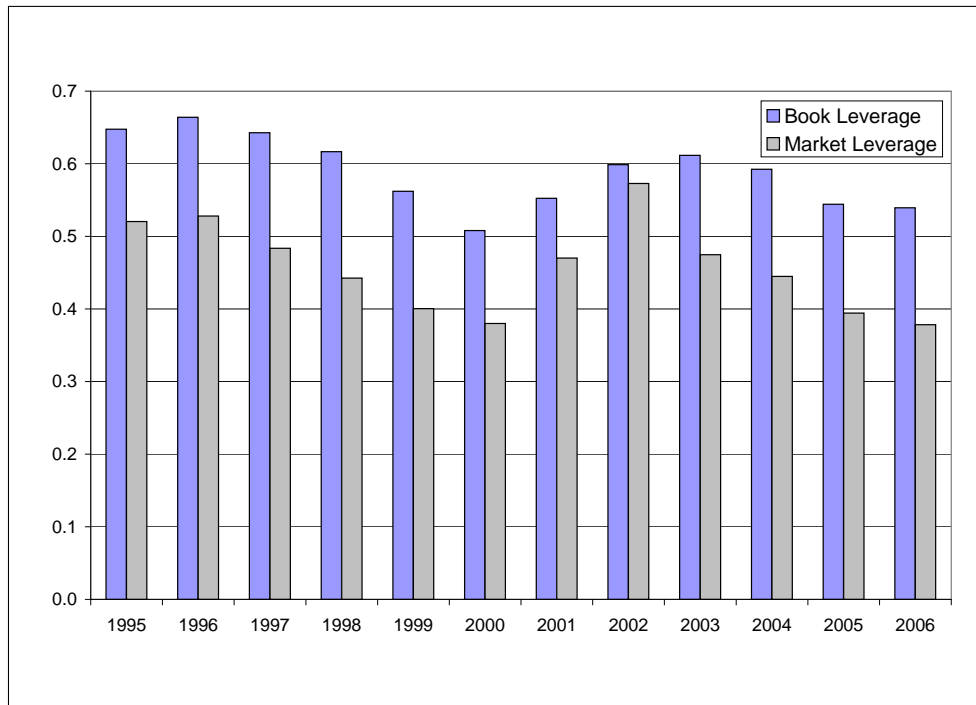
to a "true" time effect or due to changes in the sample composition.

The development of the long-term book and market leverage, which are shown in figure 5.2, follows a similar time trend. However, the decrease is more pronounced for long-term leverage ratios. The long-term book (market) leverage decreased from about 0.35 (0.30) to 0.25 (0.20) during the sample period, representing a decrease of about one third (compared to a decrease of about 20 % for the overall leverage ratios).[5]

Furthermore, family firms have a lower book and market leverage as non-family firms in every single year between 1995 and 2006, as shown in figures 5.3 and 5.4. This indicates that there are large differences in terms of capital structure between these two groups of firm. Of course, this result may be subject to sample composition bias as well. Furthermore, family firms differ in several important aspects, e.g. firm size or age, from their non-family counterparts. Hence, this descriptive result has to be interpreted with caution.

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[5]As stated before, the financial book and market leverage could not be calculated for a significant number of firm-year observations due to missing accounting data. Hence, I decided not to report figures on the financial leverage ratios since a comparsion to the other leverage definitions may be biased.

Figure 5.2: Long-term Book and Market Leverage
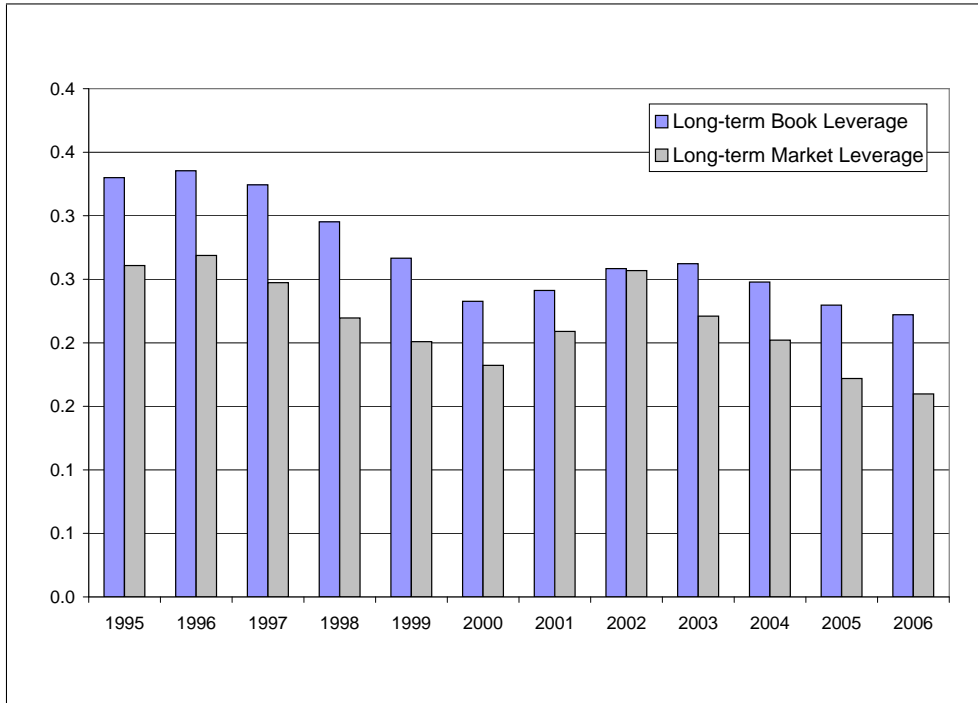
Figure 5.3: Book Leverage (Family Firms)
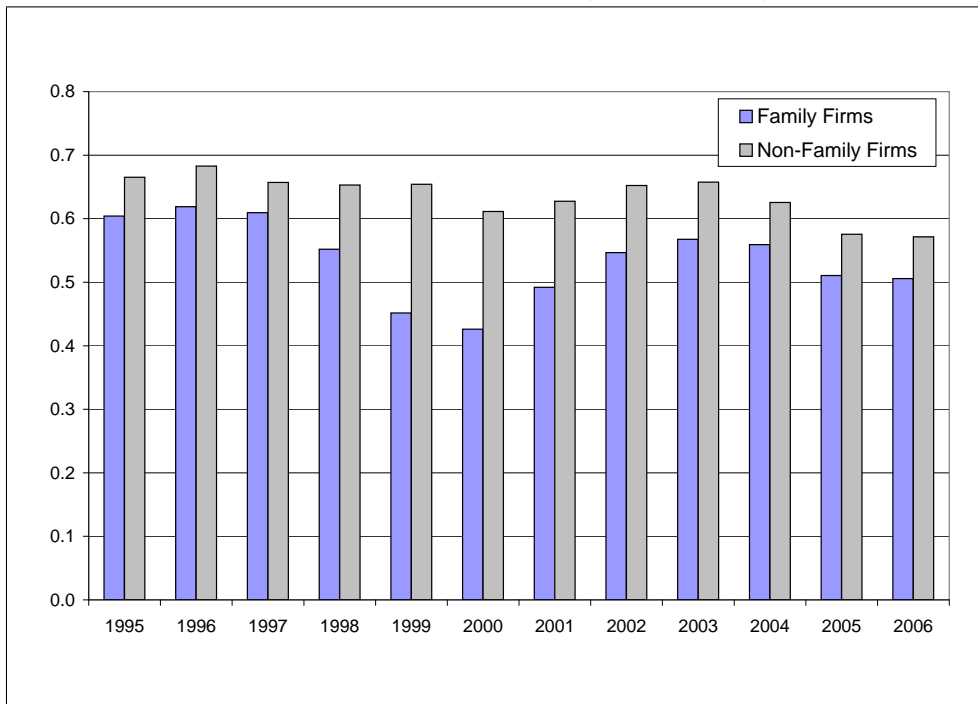
Figure 5.4: Market Leverage (Family Firms)
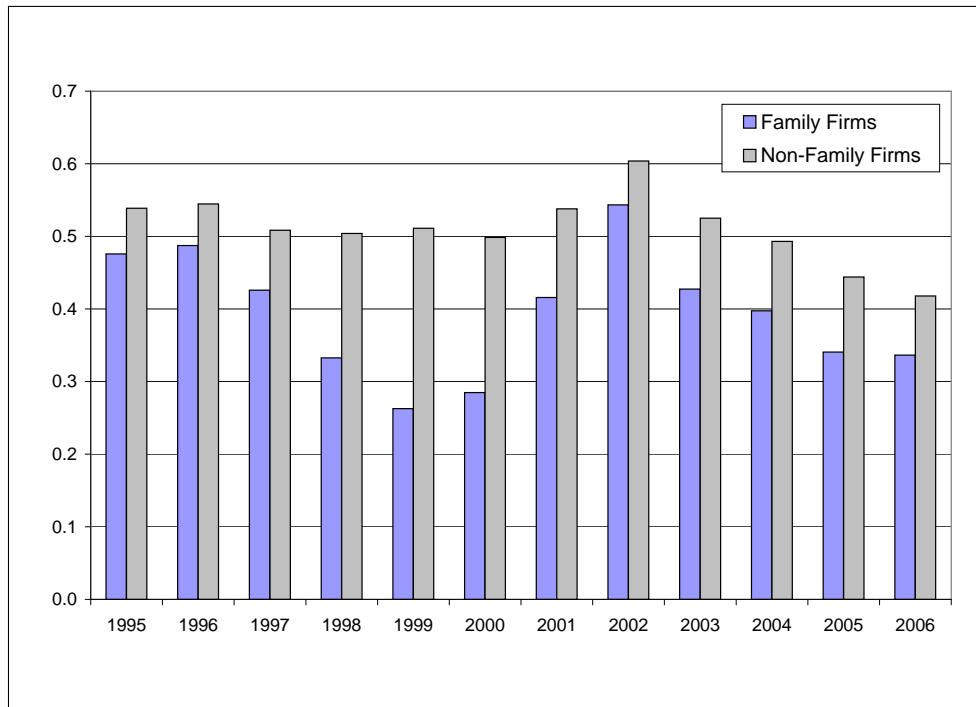
5.1.3 Payout policy

Table 5.3 presents descriptive statistics for the firms' payout policy, for all firms as well as for family and non-family firms. As can be seen, dividends are paid in about 51% of all firm-year observations. Interestingly, the descriptive results indicate that family firms are less likely to pay dividends: While in 59% of all non-family firm-year observations dividends are paid, the corresponding number for family firms is only 41%. The difference is of high statistical significance. The same holds true for any payout. However, one potential explanation for this result is that family firms are on average younger and smaller than their non-family counterparts. As shown by previous research (cf. section 3.3.3), these firms are less likely to distribute earnings among shareholders. Hence, the interpretation of these descriptive results is not straightforward. Only multivariate regressions are able to control for differences in firm characteristics. Furthermore, the descriptive results indicate that share repurchases are by far less important than dividends. In this context, family firms seem to be more likely to buy back own shares. The results for the payout ratios are similar than those for the payout dummy variables.

Table 5.3: Descriptive Statistics for Payout Policy

	All firms		**Family firms**		**Non-family firms**		
	Mean	*Median*	*Mean*	*Median*	*Mean*	*Median*	*t-test*
Dividend	0.51	1	0.41	0	0.59	1	-4.89***
Repurchase	0.11	0	0.13	0	0.09	0	2.08**
Payout	0.63	1	0.55	1	0.69	1	-4.14***
Dividend Payout Ratio	0.31	0.06	0.25	0	0.36	0.21	-4.99***
Share Rep. Payout Ratio	0.05	0	0.07	0	0.04	0	3.49***
Total Payout Ratio	0.36	0.20	0.31	0.02	0.40	0.29	-3.81***

Note: ***, ** and * indicate significance on the 1%-, 5%- and 10%-level respectively. The t-statistics are corrected for serial correlation. A detailed definition of all variables can be found in table Appendix 1.
Source: Own work based on Schmid et al. (2010).

In the following, descriptive results for important time trends in payout policy are described for the German environment. In this context, I document recent trends in the payout policy of German non-financial firms since there have been very interesting developments. Figure 5.5 shows the percentage of companies that pay dividends and buy back shares during the years 1995 to 2006. The fraction of dividend-paying firms declines heavily until 2004 and starts to slightly recover again during the last two years of the sample period. Overall, the percentage of dividend payers fell from nearly 80% in 1995 to about 40% in 2004. The results are in line with previous results from a cross-European study by von Eije and Megginson (2008) who document that the decline in industrial dividend paying firms is a phenomenon independent of the geographical region within the EU15. However, the extent of the decline varies across countries with Germany and the United Kingdom being especially prominent examples.[6]

In a second step, the average dividend payout ratio (which is calculated over all sample firms) is analyzed. It is important to note that not only over dividend payers are included in this analysis, but all sample firms. Results are presented in figure 5.6. I find a very similar time trend as for the payout propensity. The dividend payout ratio declines from 56% in 1995 to 18% in 2005. In 2006, the mean payout ratio starts to slightly increase again to 22%.

However, if I investigate the mean payout ratio of dividend paying firms only, I find that there is a less pronounced time trend (cf. figure 5.7). The average dividend payout ratio

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[6]For the decline of dividend paying firms, von Eije and Megginson (2008) find a magnitude comparable to my figures, namely from a fraction of 84% dividend payers in 1991 to 37% in 2004.

Figure 5.5: Dividend, Share Repurchase and Payout Propensity
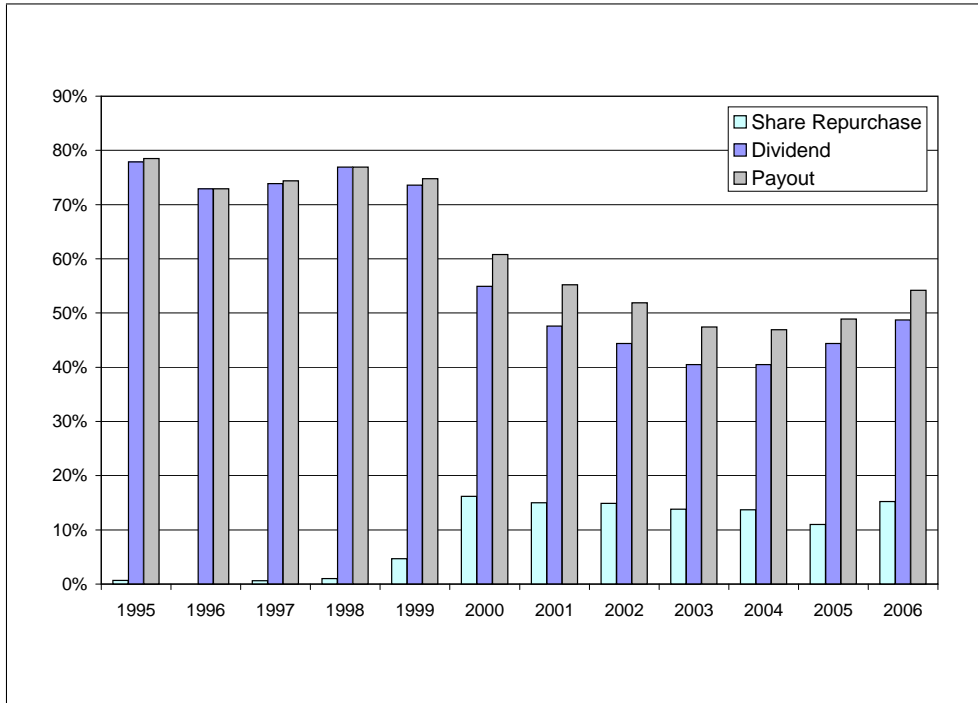
Figure 5.6: Mean Dividend and Share Repurchase Payout Ratio
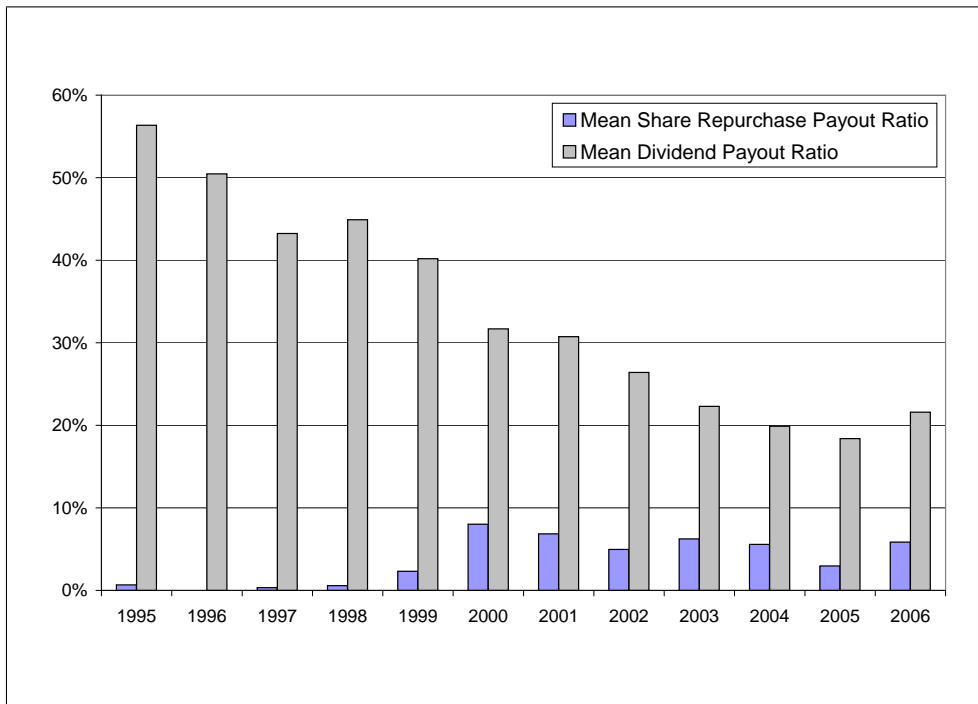
Figure 5.7: Mean Dividend Payout Ratio (only Dividend Paying Firms)
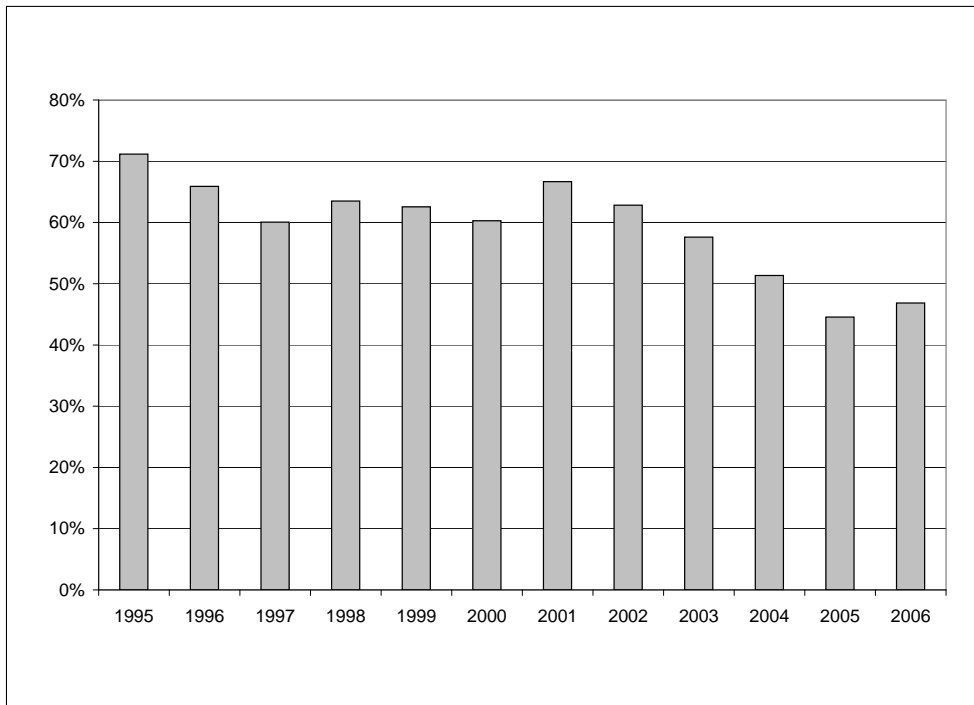
was fluctuating between 45% and 70%, with a slightly decreasing tendency after 2001. However, the decrease is of smaller magnitude (about one third) as for the average ratio calculated over all firms (about two thirds).

Although the percentage of dividend paying firms decreases over time, the mean dividend paid in each year shows an increasing trend. If I consider only companies which pay a dividend, this effect is even stronger (see figure 5.8). While the mean dividend distributed by a dividend paying firm in 1995 was about 25 million euro, it increased to over 100 million Euros in 2006. This finding is in line with the empirical evidence for the U.S. showing that a small fraction of large, established and profitable firms accounts for the majority of aggregated earnings and dividends (cf. DeAngelo et al. (2004)). In particular, the 10% of the most profitable (largest) firms in my sample account for 61% (68%) of all dividend payments in the year 1995 (cf. figure 5.11). This ratio increases over time. In 2006, they account for 91% (90%) of all dividend payments.

Several U.S. based studies (c.f. Grullon et al. (2002) and Skinner (2008)) and survey evidence among financial executives in the U.S. provided by Brav et al. (2005) suggests

Figure 5.8: Mean Dividend Paid
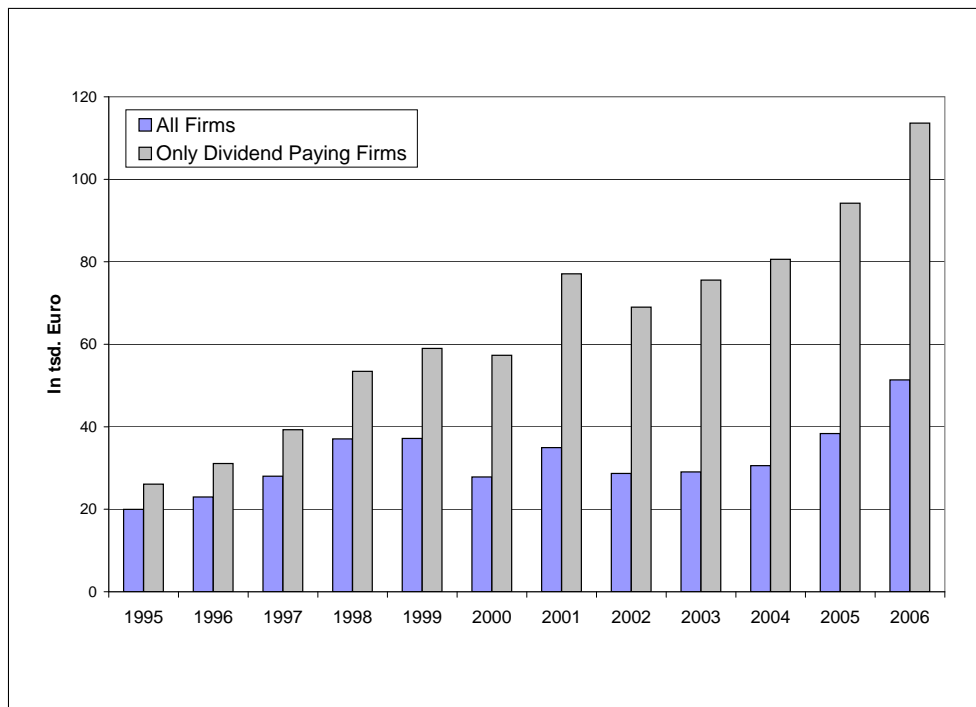
that managers prefer share repurchases over dividends as the more flexible instrument to distribute earnings and excess cash to investors. In figure 5.5, the percentage of share repurchasing firms is illustrated. Before 1998, share repurchases were only allowed in Germany under special circumstances (cf. section 2.3.4). As expected, the fraction of share repurchasing firms is fairly low in Germany before 1998. With the introduction of the law on transparency and control in the corporate sector, share repurchases were allowed under less restrictive circumstances than before. Hence, the percentage of companies repurchasing shares increases after 1998. In 2000 and 2006 (the two years with the highest fraction of share repurchasing firms), about 16% of all sample firms used share repurchases as a payout vehicle. However, the importance of share repurchases in Germany is rather limited. For example, about 55% (49%) of all firms paid dividends in 2000 (2006). In terms of overall payout volume over the 1995 to 2006 period, share repurchases account for a maximum of 9% of all payouts in the year 2000. Figure 5.9 displays the volume of share repurchases relative to total payout. Hence, dividends are by far the most common way for German firms to distribute their earnings to shareholders. This is in strong contrast to the empirical evidence for the U.S. capital market. Skinner (2008) documents that share

Figure 5.9: Share Repurchase Volume as Fraction of Total Payout
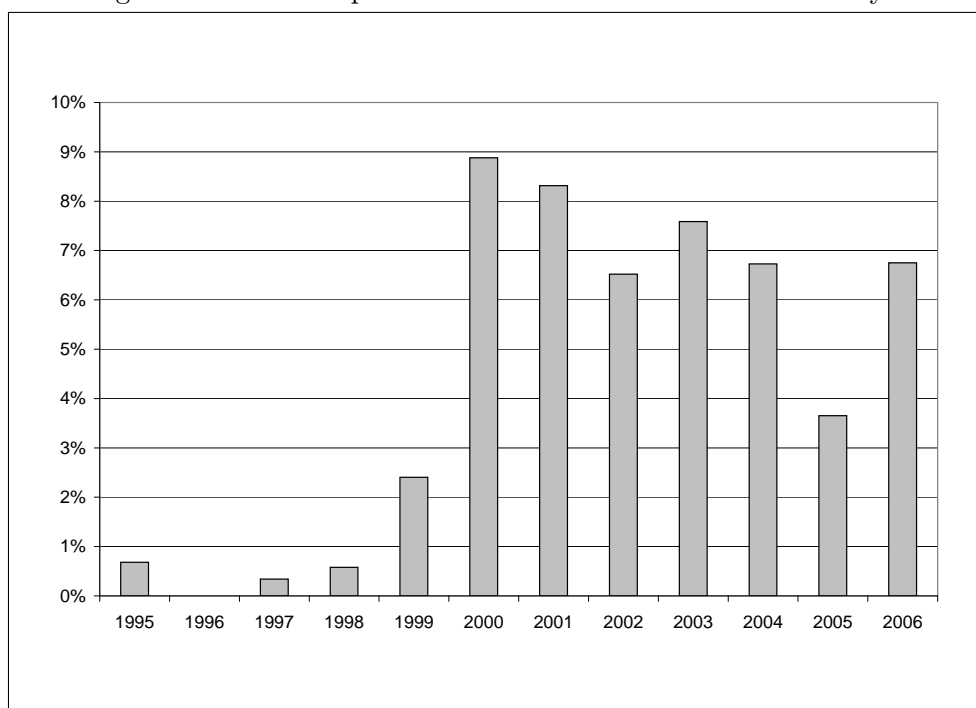
repurchases are an economically relevant phenomenon since the early 1980s in the U.S. and have nowadays reached the same magnitude as aggregate dividends. While von Eije and Megginson (2008) do not report any number on the fraction of share repurchasing firms in Germany, they show that share repurchases have gained importance in the EU15-countries, although to a lesser extent than in the U.S.

Figure 5.10 shows the percentage of firms that (i) use dividends *and* repurchase shares as payout vehicles, (ii) use *only* dividends, (iii) use *only* share repurchases, or (iv) do not provide any payouts to their shareholders. For example, in the year 1995 78% of all firms use only dividends and 22% of all firms provide no payouts at all. In 2006, 10% of all firms use both dividends and share repurchases, 39% pay only dividends, 6% use only share repurchases and 46% provide no payouts at all.

To summarize, the percentage of firms paying dividends is declining over the sample period from 1995 to 2006. Contrary to that finding, the aggregate level of dividends and the mean dividends paid by firms show the opposite trend, especially if only dividend paying firms are considered. Since the dividend payout ratio is less decreasing over time, a small fraction

Figure 5.10: Payout Vehicles
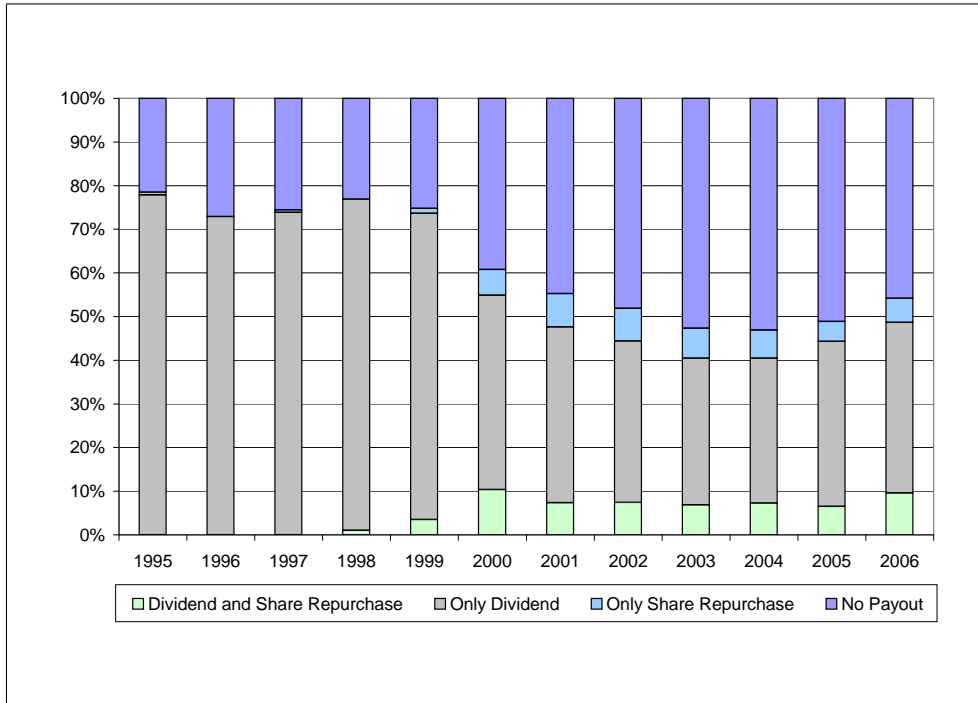
Figure 5.11: Dividends by Largest / Most Profitable Firms
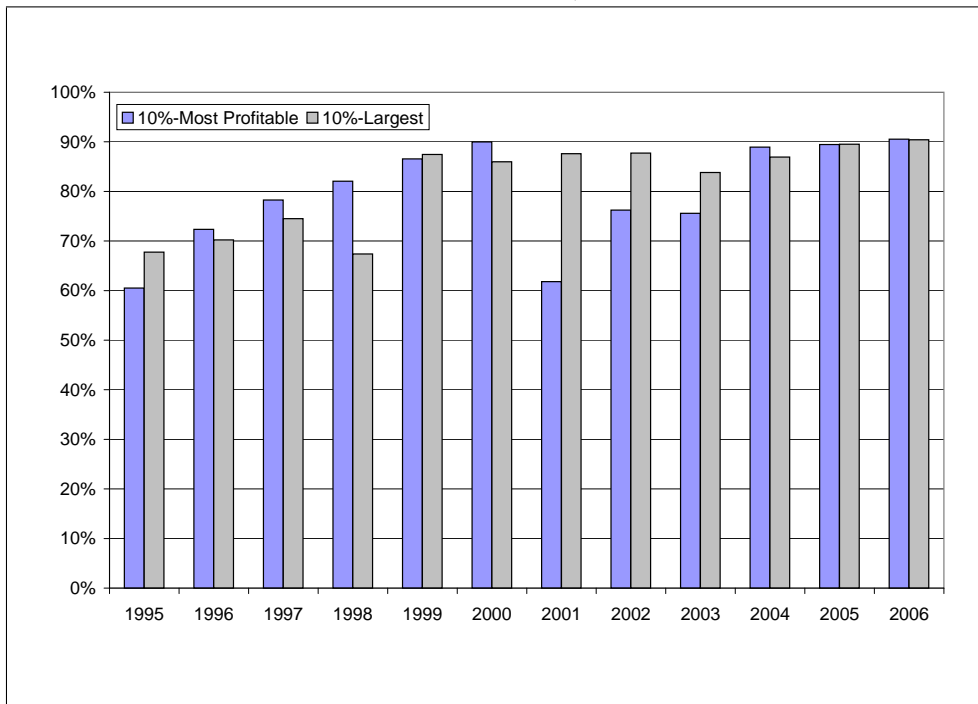
of very profitable firms seems to be responsible for the majority of aggregate earnings and dividends. Finally, the data show that share repurchases are by far less common than dividend payments in the German environment.[7]

5.1.4 Diversification

Now I present descriptive statistics for diversification. Thereby, both business segment and geographical diversification are considered. For business segment diversification, I distinguish between related, unrelated and total diversification (cf. section 4.3.3).

The univariate analysis indicates significant differences in terms of diversification between family firms and non-family firms. The results can be found in table 5.4. A first glance on diversification measures shows that family firms seem to be less diversified in terms of total and unrelated business segment diversification and geographical diversification as compared to their non-family counterparts. [8]

Table 5.4: Descriptive Statistics for Diversification

	All firms		Family firms		Non-family firms		
	Mean	*Median*	*Mean*	*Median*	*Mean*	*Median*	*t-test*
Total BSD	0.49	0.51	0.40	0.35	0.55	0.58	-3.43***
Related BSD	0.19	0.00	0.17	0.00	0.21	0.00	-1.39
Unrelated BSD	0.30	0.05	0.24	0.00	0.34	0.26	-2.93***
Geographical Div.	0.54	0.57	0.47	0.49	0.59	0.64	-3.47***

Note: ***, ** and * indicate significance on the 1%-, 5%- and 10%-level respectively. The t-statistics are corrected for serial correlation. BSD stands for Business Segment Diversification. A detailed definition of all variables can be found in table Appendix 1.
Source: Own work based on Schmid et al. (2008).

Figure 5.12 illustrates the development of the related, unrelated and total business segment diversification over the sample period. Interestingly, the average diversification level decreases significantly over my sample period. While the entropy index for total diversification is nearly 0.7 in 1995, it decreases to about half this value in 2006. Similar trends are observable for related and unrelated diversification. Furthermore, the level of unrelated diversification is higher as for related diversification in all sample years.

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[7]Please note that although only mean values are reported in the figures, very similar time characteristics are found for the median values of the payout ratios. To enhance the clarity of the figures, median values are not reported.

[8]However, as argued before, multivariate techniques are needed to recognize differences between family

Figure 5.12: Business Segment Diversification (All Firms)
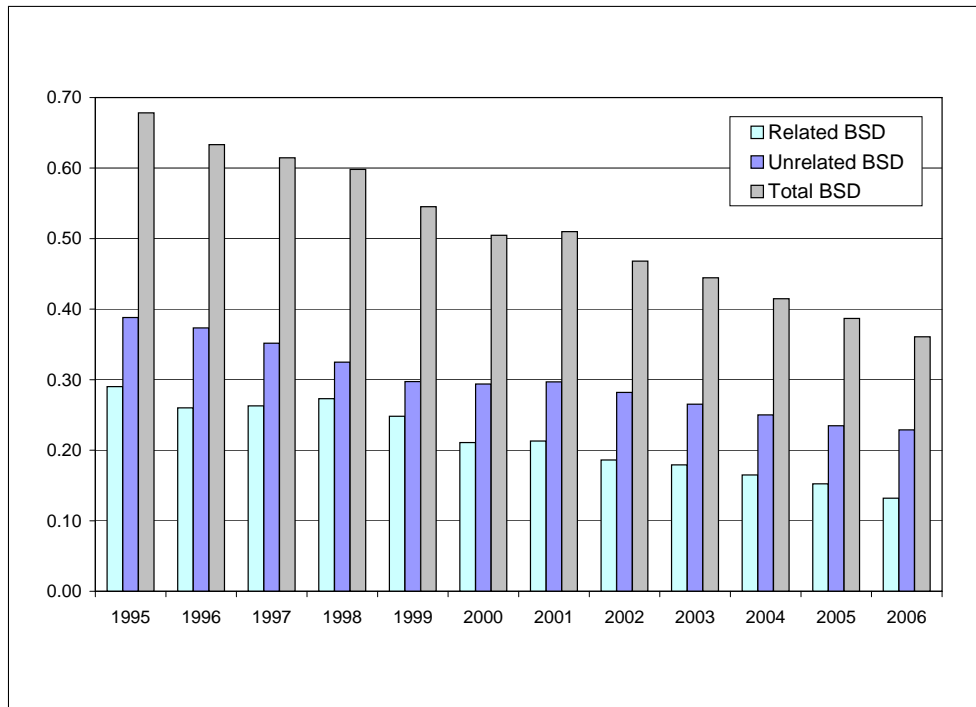
In the next step, I only analyze those firms which have business segment diversification, i.e. which have more than one business segment. Results are shown in figure 5.13. Again, the level of total diversification decreases during the sample period. However, the decrease is less severe. The entropy index for total business segment diversification is about 0.8 in 1995 and 0.65 in 2006. Similar trends are observable for related and unrelated business segment diversification. One potential explanation for this less severe decrease for diversified firms is that many firms that enter the sample are not diversified at all. For example, many of the companies which had their IPO between 1998 and 2000 may be poorly diversified and are solely focused on Internet services (cf. section 4.1.4).

To investigate if these new listings cause the decrease of business segment diversification during the sample period, I only analyze firms that are in the sample for the entire period in the next step. Results are shown in figure 5.14. Again, the level of total BSD decreases over the sample period, from about 0.7 in 1995 to about 0.5 in 2006. Interestingly, the level remained largely constant between 1995 and 2002, and started to decrease afterwards.

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firms and non-family firms in terms of firm-level characteristics more accurately.

Figure 5.13: Business Segment Diversification (Only Diversified Firms)
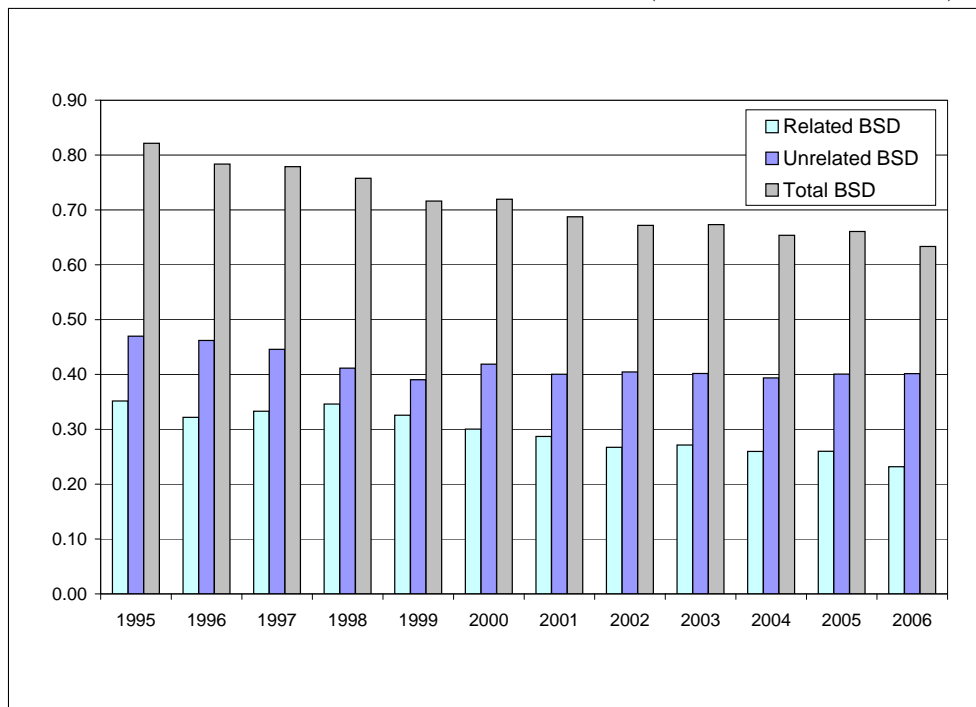
These results suggest the diversification decreased during my sample period, even after controlling for a possible sample composition bias.

Beneath business segment diversification, the level of geographical diversification is of interest for my empirical analysis. Figure 5.15 shows the development of the geographical diversification over the sample period. Contrary to the level of business segment diversification, geographical diversification remains largely constant over all years. It decreases from 1995 to 1999, but starts to increase again to its initial value afterwards.

In the next step, the level of diversification in family firms and non-family firms is analyzed, both for total business segment and geographical diversification. Results are presented in figures 5.16 and 5.17. For total business segment diversification, I find that family firms are less diversified in every sample year compared to their non-family counterparts. The time trend pointed out before (decrease over the sample period) holds true for both family and non-family firms. Hence, these descriptive results indicate strong differences between family and non-family firms in terms of business segment diversification. However, as argued before, these results have to be interpreted with caution since important aspects

Figure 5.14: Business Segment Diversification (Balanced)
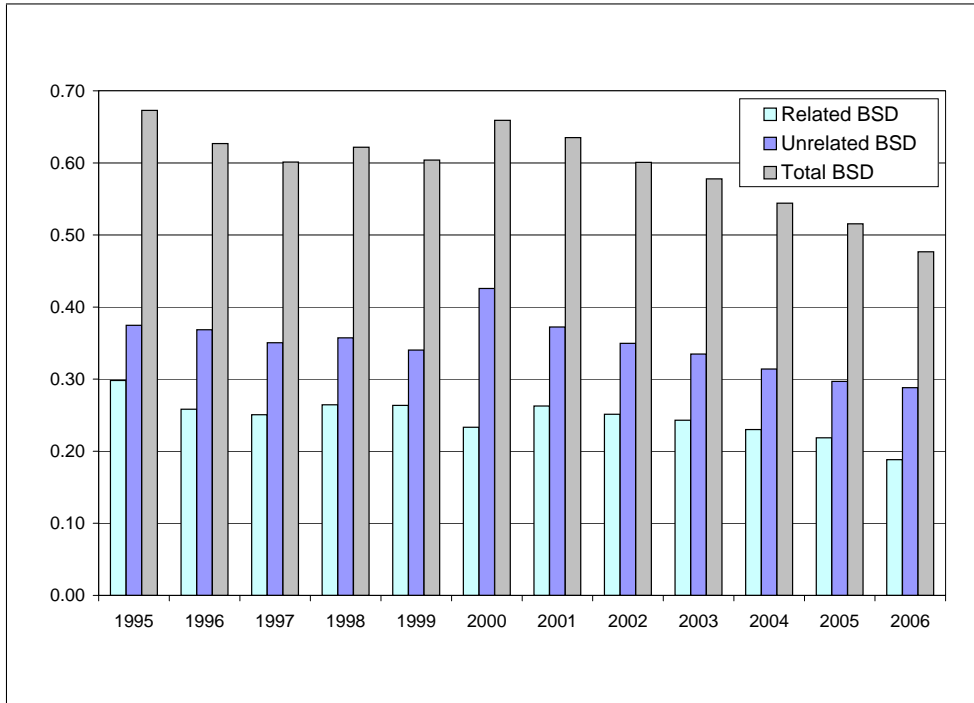
Figure 5.15: Geographical Diversification (All Firms)
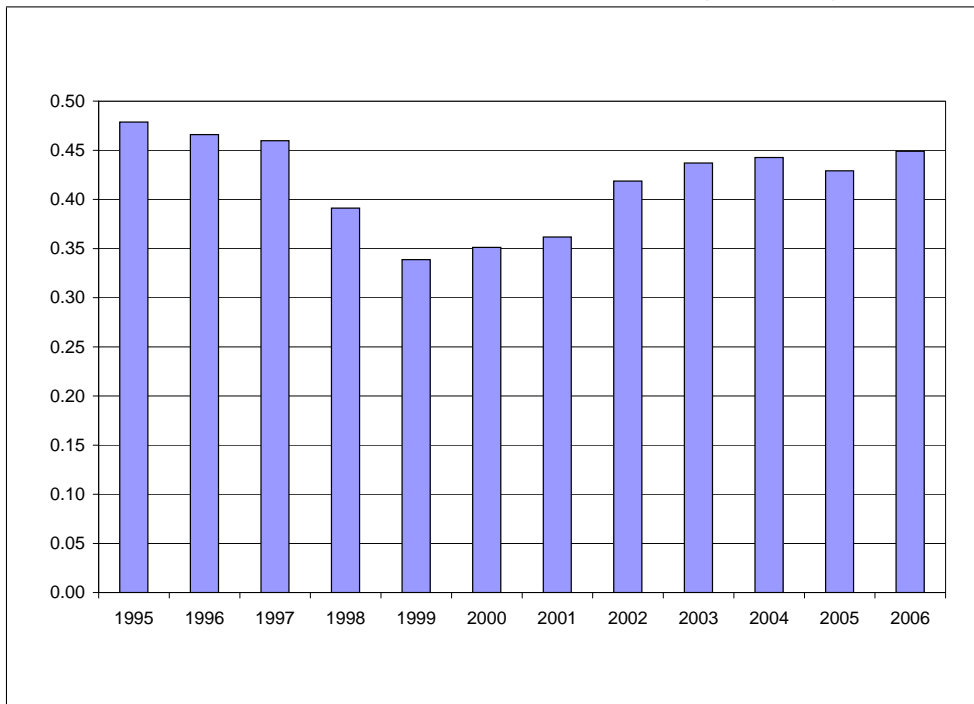
Figure 5.16: Business Segment Diversification (Family Firms)
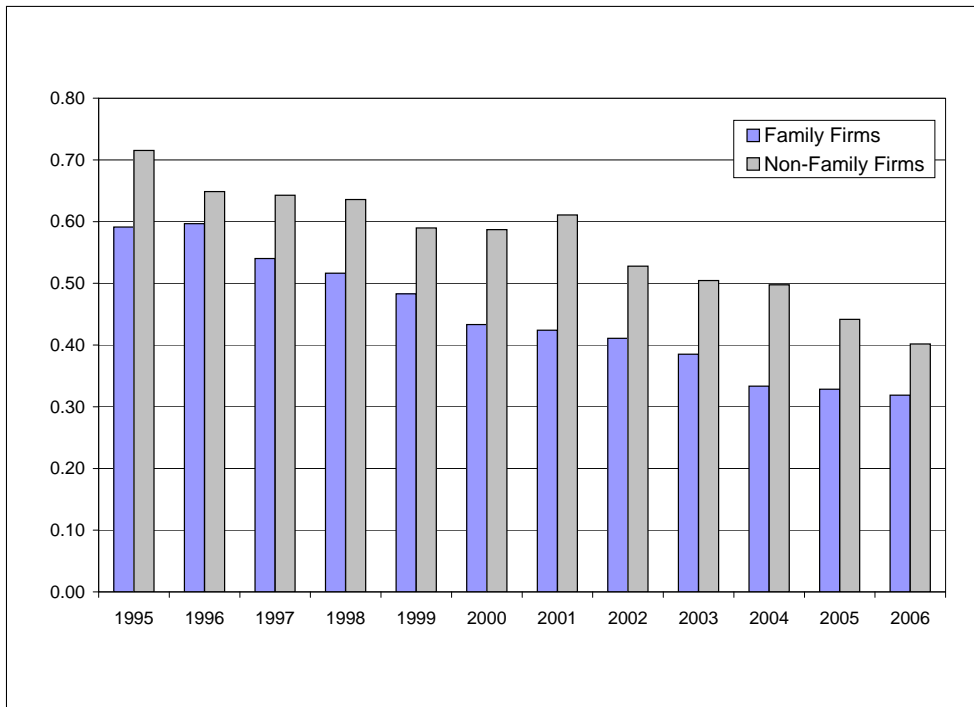
like for example firm size are not taken into consideration. In terms of geographical diversification, similar results are found. Family firms show less geographical diversification than their non-family counterparts in every sample year. Interestingly, the geographical diversification in family firms shows more variation over time than for non-family firms. From 1997 to 1999, it decreases from about 0.4 to below 0.25. After 2001, it starts to increase again. The level in 2006 is roughly the same as it was in 1995, both for family and non-family firms.

To summarize, I find that the level of business segment diversification (total, unrelated and related) decreases in the period 1995 to 2006. While new listings do have an effect, they are not the only reason for this decrease. Hence, German firms seem to focus more on their "core" business and less on diversification in 2006 as compared to 1995. The level of geographical diversification remains rather constant over the sample period. Furthermore, family firms are less diversified, both in terms of business segment and geographical diversification in all sample years.

Figure 5.17: Geographical Diversification (Family Firms)
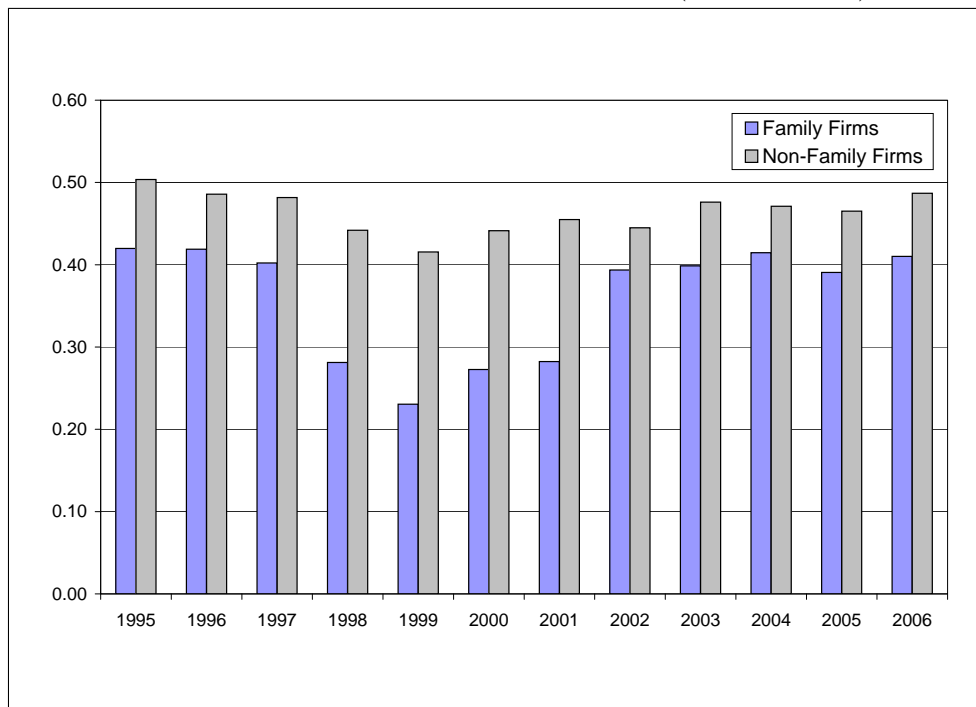
5.1.5 Firm characteristics

Family firms differ in several firm characteristics from their non-family counterparts, as shown in table 5.5. Family firms are smaller in terms of assets, sales and employees. For example, the average number of employees over all sample firms is 11,379. While family firms have on average 6,324 employees, non-family firms have 15,863. Not surprisingly, the mean values for the size proxies assets, sales and employees are much higher than the median values. Furthermore, family firms are younger in terms of years since incorporation. For example, family firms are on average 31 years old, in comparison to an average age of 72 years for non-family firms. There are differences in terms of several other firm characteristics, like for example the tangible assets ratio or the accounting standard applied, as well. Interestingly, family firms do not differ from non-family firms in terms of corporate performance and market-to-book ratios based on these univariate statistics.

Table 5.5: Descriptive Statistics for Firm Characteristics

	All firms		Family firms		Non-family firms		
	Mean	*Median*	*Mean*	*Median*	*Mean*	*Median*	*t-test*
Assets (in million Euro)	2,988.08	142.74	996.62	74.67	4,757.64	310.49	-3.30***
Sales (in million Euro)	2,501.35	167.39	1,121.77	80.38	3,735.04	369.07	-3.24***
Employees	11,379	1023	6,324	428	15,863	2159	-2.65***
Firm Age	52.97	28	31.18	15	72.42	74	-10.79***
IPO Age	14.62	6	5.91	4	22.38	11	-12.34***
Profitability	-0.07	0.11	0.10	0.09	-0.27	0.11	-1.19
Tangible Assets Ratio	0.23	0.20	0.20	0.15	0.26	0.24	-4.81***
Market-to-Book	2.86	1.73	3.08	1.74	2.66	1.72	0.72
Accounting Standard	0.46	0.00	0.32	0.00	0.58	1.00	-8.85***

Note: ***, ** and * indicate significance on the 1%-, 5%- and 10%-level respectively. The t-statistics are corrected for serial correlation. A detailed definition of all variables can be found in table Appendix 1.
Source: Own work based on Ampenberger et al. (2009).

5.2 Capital structure decisions in family firms

The following sections deal with the question if and why family firms differ from their non-family counterparts in terms of capital structure decisions. First, the question if there are differences between family and non-family firms is addressed. After that, the effects of family ownership and management are analyzed. To ensure the validity of the results, I present a large battery of robustness tests. In a last step, the question why these differences occur is raised.[9]

5.2.1 Family firms versus non-family firms

In a first step, I test if family firms use higher, lower or equal levels of leverage compared to non-family firms. Whereas *hypothesis CS-H1* and *hypothesis CS-H2* postulate lower leverage in family firms, *hypothesis CS-H3* states the opposite. In the empirical analysis, family firms are found to show significantly lower levels of leverage. Results for market leverage are presented in table 5.6.[10]

The coefficients of the family firm variable estimated by pooled-OLS, BE and FE regres-

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[9]Please note that the following sections are partly based on Ampenberger et al. (2009).

[10]The qualitatively similar results for book leverage, long-term market and book leverage as well as financial book and market leverage are presented in tables Appendix 3, Appendix 4, Appendix 5, Appendix 6 and Appendix 7.

sions[11] are all negative and - in the case of pooled-OLS and BE estimates - statistically significant at the 1% significance level. Even more, the coefficients indicate high economic significance as well. For market leverage, I find - based on pooled-OLS estimates - that family firms have a leverage ratio that is about 19% lower compared to the sample mean of all non-family firms. To summarize, the results strongly support the hypothesis of lower leverage levels in family firms compared to non-family firms.[12] Consequently, *hypothesis CS-H3* has to be rejected. However, although the results so far support lower leverage ratios in family firms, the reason therefore is still unknown. Hence, neither *hypothesis CS-H1* nor *hypothesis CS-H2* can be rejected. The effects of family ownership and management are analyzed in a next step to disentangle the rationale behind capital strucutures decisions in family firms.

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[11]For a detailed description of these estimation methods, cf. section 4.4.

[12]It is interesting to note that the adjusted R-square of the regressions are comparable to earlier empirical work on capital structure decisions: For example, for market leverage, it is 26% for pooled-OLS estimates, 32% for BE estimates and 80% for FE estimates. Thereby, in accordance with Lemmon et al. (2008), a strong explanatory power of firm-fixed effects is observed.

Table 5.6: Capital Structure: Family Firms

Model	I a	I b	I c
Family Firm	**-0.060***	**-0.073***	**-0.017**
	(-3.16)	**(-3.42)**	**(-0.87)**
Firm Size [Ln]	0.029***	0.035***	0.046***
	(6.02)	(6.60)	(5.79)
Profitability	-0.000080	0.00044	-0.00034***
	(-0.93)	(0.79)	(-4.10)
Outside Blockholders	-0.034	-0.10***	-0.040**
	(-1.35)	(-3.23)	(-2.00)
Firm Specific Risk	0.14***	0.16***	0.062***
	(4.63)	(4.17)	(2.93)
Firm Age [Ln]	0.0097	-0.0028	0.083***
	(1.28)	(-0.33)	(4.09)
Tangible Assets Ratio	0.24***	0.22***	0.31***
	(5.15)	(3.91)	(6.25)
Market-to-Book	-0.00041	-0.0019*	-0.000080
	(-0.90)	(-1.69)	(-0.37)
Accounting Standard	0.076***	0.11***	0.017
	(4.34)	(3.66)	(1.51)
Payout Ratio	-0.025	-0.040	-0.014
	(-1.61)	(-0.97)	(-1.45)
Industry Leverage	0.54***	0.70**	0.43***
	(6.56)	(2.14)	(5.36)
Expected Inflation	0.042***	-0.036	0.020*
	(3.55)	(-0.32)	(1.79)
Observations	3859	3859	3859
Adj. R-squared	0.26	0.32	0.80
Model	OLS	BE	FE

The dependent variable is MARKET LEVERAGE. A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Ampenberger et al. (2009).

In terms of control variables, firm size is found to have a positive and highly significant correlation with the level of leverage in the regression models. Other highly significant control variables that are positively correlated with leverage are firm-specific risk and industry leverage. The tangible assets ratios shows - as expected by capital structure theories - a positive correlation with the level of leverage. For the expected inflation rate I find a positive and statistically significant effect in the majority of the models as well. Furthermore, I find that firms which follow German GAAP have higher levels of leverage,

which is an expected result given that German GAAP is a conservative accounting system. Outside blockownership has on average a negative impact on firm leverage. Profitability has a negative influence on the leverage ratio in the FE model, whereas firm age has a positive influence. For the market-to-book and the payout ratio, I do not find a consistent influence on firm leverage. These findings are largely consistent with standard capital structure theories and the recent empirical findings for the U.S. and Germany presented in Frank and Goyal (2009) and Elsas and Florysiak (2008), respectively. By and large, results for the control variables in the regressions on the other leverage definitions are comparable.

5.2.2 Family ownership and management 1/2

In the next step, the effect of the three components that can qualify a firm as family firm are disentangled: Family ownership, family management board and family supervisory board participation. Results for market leverage are presented in table 5.7.[13] The analysis indicates almost no evidence that family ownership alone leads to lower leverage ratios. Hence, monitoring incentives of family shareholders are not the reason for lower leverage ratios in family firms. Consequently, *hypothesis CS-H1a* is rejected.

The regression results show that leverage is only lower in firms with family participation in the firm's top-management.[14] However, the interpretation of this result is still complex: On the one hand, family participation in the firm's top-management is expected to lead to interest alignment between family shareholders and the managers. Consequently, *hypothesis CS-H1b* can not be rejected. On the other hand, only the presence in the firm's top-management (and their direct influence on the corporate policy) may enable the family shareholders to extract private benefits of control. Hence, neither *hypothesis CS-H2a* nor *hypothesis CS-H2b* can be rejected. The force behind lower leverage ratios in family firms still remains unknown. In section 6.1.2, a setting is presented that allows to test the convergence of interest (*hypothesis CS-H1b*) against the risk aversion (*hypothesis CS-H2a*)

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[13]The qualitatively similar results for book leverage, long-term market and book leverage as well as financial book and market leverage are presented in tables Appendix 3, Appendix 4, Appendix 5, Appendix 6 and Appendix 7.

[14]It is important to note that family management without family ownership is extremely uncommon. Hence, family management participation is nearly always accompanied by family ownership. However, section 5.2.3 provides an alternative test for the effect of simultaneous family ownership and management.

and control retention (*hypothesis CS-H2b*) rationale.

Table 5.7: Capital Structure: Family Ownership and Management 1/2

Model	I a	I b	I c
Family Ownership	**-0.054**	**-0.064**	**-0.040**
	(-1.49)	**(-1.44)**	**(-1.24)**
Family MB	**-0.048****	**-0.052****	**-0.048****
	(-2.46)	**(-2.19)**	**(-2.38)**
Family SB	**-0.019**	**-0.013**	**-0.00017**
	(-0.91)	**(-0.53)**	**(-0.0094)**
Firm Size [Ln]	0.028***	0.035***	0.047***
	(5.72)	(6.50)	(6.02)
Profitability	-0.000098	0.00039	-0.00033***
	(-1.13)	(0.69)	(-4.03)
Outside Blockholders	-0.041	-0.11***	-0.047**
	(-1.62)	(-3.21)	(-2.28)
Firm Specific Risk	0.13***	0.16***	0.061***
	(4.50)	(4.12)	(2.87)
Firm Age [Ln]	0.0088	-0.0036	0.080***
	(1.16)	(-0.42)	(3.94)
Tangible Assets Ratio	0.25***	0.22***	0.30***
	(5.21)	(3.95)	(6.21)
Market-to-Book	-0.00040	-0.0019*	-0.000072
	(-0.89)	(-1.67)	(-0.34)
Accounting Standard	0.076***	0.11***	0.015
	(4.36)	(3.76)	(1.32)
Payout Ratio	-0.024	-0.040	-0.012
	(-1.54)	(-0.97)	(-1.32)
Industry Leverage	0.54***	0.72**	0.42***
	(6.52)	(2.19)	(5.27)
Expected Inflation	0.040***	-0.032	0.015
	(3.31)	(-0.28)	(1.30)
Observations	3859	3859	3859
Adj. R-squared	0.26	0.31	0.80
Model	OLS	BE	FE

The dependent variable is Market Leverage. A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Ampenberger et al. (2009).

For family participation in the supervisory board, no statistically significant effect can be detected. Since the management board has by far the strongest influence on corporate decision making in a two-tier board system (cf. 2.3.2 for more details on the German two-tier

board system) and the convergence-of-interest effect accompanied by family participation in the management board reduces agency costs more effectively than with participation in the supervisory board, this result is not surprising.

Similar arguments as for management board participation of the family can be found for the presence of a founder CEO. Additionally, the presence of the founder as CEO enhances both interest alignment between family shareholders and the top-management and the families possibilities to influence corporate policy decisions compared to the presence of a family member in the management board (as investigated in the previous section).[15]. The results for the CEO effect on the different leverage definitions are reported in tables Appendix 8 to Appendix 10. The results support the view that leverage is lower in firm still run by the founder. The coefficient for the dummy variable indicating the presence of a founder as CEO is negative and significant in most models.[16] However, lower leverage if the founder acts as the firm's CEO is again consistent with higher convergence of interest or higher possibilities to extract private benefits of control (either in the form of risk aversion or control retention).

To conclude, empirical results lead to a rejection of *hypothesis CS-H1a*, since monitoring incentives of family shareholders are not the "force" behind lower leverage ratios in family firms. Only if the family is involved in the day-by-day business of the firm, either as member of the management board or as the CEO, there is a change in the firm's capital structure. However, the empirical tests so far are not able to distinguish between the convergence of interest and the extraction of private benefits rationale. An empirical test setting to disentangle these explanations is presented in section 6.1.2.

5.2.3 Family ownership and management 2/2

As described in the last section, family ownership alone does not lead to lower leverage ratios. Only if the family is represented in firm's top-management, leverage ratios are lower. In order to test the effect of simultaneous family ownership and management in greater detail, an interaction term of family ownership and family participation in the

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[15]Cf. section 2.1.2 for a detailed description of the role of the founder in her corporation.
[16]Please note that I do not control for the level of family ownership in these models.

management board is introduced (FAMILY OWNED*MANAGED).[17] Participation in the supervisory board is not considered because the analysis described above shows that no significant effects are found for supervisory board membership. Since this interaction term is different from zero only if family management and ownership occur at the same time, I expect that its influence on capital structure is negative.

The results for market leverage presented in table 5.8 strongly support this.[18] The coefficient for the interaction term is negative in all models, indicating that ownership and management board participation at the same time lead to lower levels of leverage. All estimates are statistically significant the 1%-level. Hence, it can be shown that family firms with both family management and ownership have significantly lower leverage ratios. However, as argued before, this finding does not allow me to distinguish between the lower agency conflict I (convergence of interest) and higher agency conflict II (extracion of private benefits) rational.

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[17]Please note that this can be seen as a very restrictive definition of a family firms since it requires a strong involvement of the family into the family business with holding a seat in the management board and family ownership at the same time.

[18]The qualitatively similar results for book leverage, long-term market and book leverage as well as financial book and market leverage are presented in tables Appendix 3, Appendix 4, Appendix 5, Appendix 6 and Appendix 7.

Table 5.8: Capital Structure: Family Ownership and Management 2/2

Model	I a	I b	I c
Family Owned*Managed	**-0.12***	**-0.12***	**-0.11***
	(-3.06)	**(-2.84)**	**(-3.43)**
Firm Size [Ln]	0.029***	0.037***	0.046***
	(5.90)	(6.93)	(5.81)
Profitability	-0.00012	0.00035	-0.00033***
	(-1.37)	(0.63)	(-3.92)
Outside Blockholders	-0.025	-0.086***	-0.046**
	(-1.06)	(-2.79)	(-2.28)
Firm Specific Risk	0.13***	0.17***	0.060***
	(4.44)	(4.21)	(2.82)
Firm Age [Ln]	0.011	-0.0020	0.078***
	(1.43)	(-0.25)	(3.84)
Tangible Assets Ratio	0.24***	0.21***	0.30***
	(5.12)	(3.80)	(6.08)
Market-to-Book	-0.00042	-0.0020*	-0.000082
	(-0.91)	(-1.79)	(-0.39)
Accounting Standard	0.079***	0.12***	0.015
	(4.62)	(4.09)	(1.34)
Payout Ratio	-0.024	-0.040	-0.012
	(-1.53)	(-0.97)	(-1.34)
Industry Leverage	0.55***	0.76**	0.43***
	(6.58)	(2.33)	(5.31)
Expected Inflation	0.041***	-0.032	0.016
	(3.39)	(-0.28)	(1.41)
Observations	3859	3859	3859
Adj. R-squared	0.25	0.31	0.80
Model	OLS	BE	FE

The dependent variable is MARKET LEVERAGE. A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Ampenberger et al. (2009).

5.2.4 Robustness tests

This section explores the robustness of the results along five dimensions: (i) misspecifications (ii) sample composition effects (iii) non-linear effects (iv) the influence of other blockholders and (v) endogeneity. All robustness tests apply to the overall differences between family and non-family firms in terms of market leverage. Results are reported in

tables 5.9, 5.10 and 5.11.

Misspecifications

The results are robust to the usage of several alternative control variables, such as the natural logarithm of sales in lieu of employees as a proxy for firm size, total risk in lieu of firm specific risk, a dummy variable for dividend in lieu of payout ratio and the natural logarithm of IPO age in lieu of founding age to control for firm age. Furthermore, the results are also robust to the treatment of preferred capital as debt rather than equity. None of those modifications changed the results (results not reported).

Elsas and Florysiak (2008) use regressor variables *lagged by one year* in all of their regressions. Behind this procedure is the idea that current firm characteristics, such as firm size and available collateral, determine future borrowing capacity. In contrast, I have used contemporaneous firm characteristics in all regressions. However, the results remain largely unchanged if I use lagged instead of contemporaneous regressors (results not reported).

The empirical tests of the founder CEO impact indicate that firms under the leadership of the company founder exhibit significant lower leverage ratios. However, since such effects require an active company founder those results might be biased towards younger firms. Hence I apply an alternative dummy variable for a FAMILY CEO that takes the value one if the founder or a relative of the founder is CEO and zero otherwise. This robustness test leads to similar results indicating that besides the founder CEO effect any family member in charge of running the family business significantly reduces the leverage within the firm (results not reported).[19]

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[19] At first glance this result is surprising having in mind the numerous studies of U.S. family firms who find only a founder CEO-effect for corporate performance but conclude that firms with descendant CEOs perform worse than firms with founder CEOs (for example, see Villalonga and Amit (2006) or Perez-Gonzalez (2006)). However, the analysis of the family CEO remains largely driven by founder CEOs. Additionally, it is interesting that Sraer and Thesmar (2007) in their analysis of French family firms find that both family firms with founder CEOs and descendant CEOs perform better than family firms with outside CEOs. Against the background that France is similar to Germany in terms of institutional environment it is interesting to note that there seems to be not so strong differences in both countries in terms of CEO quality between founders and descendants.

Sample composition effects

The composition of my sample changes substantially over time (cf. section 4.1.4). In the context of capital structure decisions, the changing sample composition can affect the results in several ways. One concern is that new lists during the 1998 to 2000 period have different firm characteristics than established companies. For the U.S., Fama and French (2004a) have argued that both the number and characteristics of new lists have changed substantially in the U.S. Cross sectional characteristics of new lists show more left skewed profitability in combination with more right skewed growth options resulting in a sharp decline of survival rate. Fama and French (2001) further show that those changing firm characteristics can have a large influence on corporate policy decisions, such as payout policy.

Hence, I analyze whether the changing characteristics of new lists affect the results. To do so, I run all regression models for two separate sub-samples (cf. table 5.9, models Ib and Ic): One regression is based on a sub-sample of firms whose IPO was in the 1998 to 2000 period and one regression for the sub-sample of firm with an IPO before or after this IPO boom phase. However, by excluding the "Neuer Markt" companies the results remain qualitatively unchanged. The same regression is performed for companies which had their IPO during the 1998 to 2000 period. Interestingly, the coefficient for the variable family firm is again highly significant and larger compared to the previous regression. This indicates that the difference in leverage is even more pronounced for firms which went public during this boom phase. The second test involves the introduction of a dummy variable "high-tech firm" for all IPOs during this boom phase (model Ia). Nevertheless, the influence of the family firm status remains strong in the robustness test regressions, dissipating concerns that the results are driven by sample composition effects. Family firms differ from their non-family counterparts in terms of capital structure decisions and this result is not subject to different firm characteristics of new lists.

Table 5.9: Capital Structure: Robustness Tests 1: Sample Composition and Timing Effects

Model	I a	I b	I c	II a	II b
	Sample composition effects			Timing effects	
	Dummy	IPO 98-00	no 98-00 IPO	95 - 00	01 - 06
Family Firm	-0.058***	-0.096***	-0.067**	-0.083***	-0.067***
	(-3.04)	(-2.96)	(-2.44)	(-3.65)	(-2.76)
High Tech Firm	-0.038				
	(-1.64)				
Firm Size [Ln]	0.027***	0.028***	0.044***	0.036***	0.031***
	(5.36)	(2.97)	(6.74)	(6.24)	(5.14)
Profitability	-0.000080	0.00052	-0.56***	0.00018	-0.18***
	(-0.94)	(0.90)	(-4.98)	(0.58)	(-4.42)
Outside Blockholders	-0.036	-0.13**	-0.090**	-0.12***	-0.025
	(-1.44)	(-2.26)	(-2.38)	(-3.47)	(-0.74)
Firm Specific Risk	0.14***	0.092*	0.27***	0.20***	0.030
	(4.61)	(1.86)	(3.78)	(4.79)	(0.64)
Firm Age [Ln]	0.0056	0.0010	-0.0098	0.0075	0.0038
	(0.72)	(0.081)	(-0.87)	(0.83)	(0.45)
Tangible Assets Ratio	0.24***	0.40***	0.13*	0.32***	0.13**
	(5.06))	(4.62)	(1.82)	(5.32)	(2.11)
Market-to-Book	-0.00042	-0.0039**	-0.00058	-0.0033**	-0.0014**
	(-0.94)	(-2.12)	(-0.45)	(-2.22)	(-1.97)
Accounting Standard	0.069***	0.048	0.18***	0.088***	0.082***
	(3.95)	(1.15)	(3.84)	(3.14)	(2.84)
Payout Ratio	-0.027*	0.040	-0.029	-0.044	0.018
	(-1.72)	(0.62)	(-0.58)	(-1.09)	(0.50)
Industry Leverage	0.55***	0.21	1.00**	-0.64	0.83*
	(6.71)	(0.45)	(1.98)	(-0.98)	(1.78)
Expected Inflation	0.045***	1.93	-0.023	-0.28**	0.12
	(3.80)	(1.15)	(-0.078)	(-2.07)	(1.07)
Observations	3855	1624	2231	2428	1431
Adj. R-squared	0.26	0.17	0.43	0.31	0.41
Model	OLS	BE	BE	BE	BE

A detailed description of the variables can be found in table Appendix 1. The dependent variable is MARKET LEVERAGE. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Ampenberger et al. (2009).

Second, the composition of a firm's capital structure is determined by equity and debt issues. Market-timing explanations propose that firms issue equity during favorable market times when equity prices are overvalued ("window of opportunity") and buy back shares when equity prices are undervalued (cf. Baker et al. (2002)). Especially, stock markets

(both initial and seasoned public offerings) seem to be highly cyclical (cf. Bayless and Chaplinsky (1996) or Lowry and Schwert (2002)). Hence, I control for timing effects by dividing the sample into two sub-periods (cf. table 5.9, models IIa and IIb): one sub-sample covers only observations during the 1995 to 2000 period (six years) that includes the boom phase at the IPO-market while the other sub-sample covers only firm-year observations during the 2001 to 2006 period (six years) of normal to conservative stock market climate. In both sub-periods the observed family firm effects remain qualitatively unchanged.

Non-linear effects

Linear regressions only correct for linear influences of control variables. In order to control for non-linear effects of firm size, I include a squared term of firm sizes (cf. table 5.10, model Ia) and additionally divide the sample in two sub-samples (models Ib and Ic). In particular, I use the median value of FIRM SIZE to divide the sample in two sub-samples of equal size. Overall, both methods lead to qualitatively unchanged findings, what indicats that there is no non-linear size effect that biases the results for family firms. In order to check whether the results are sensitive to outliers I have winsorized the variables at 2.5% (model II). Again, I find qualitatively the same results as for the regressions without outlier corrections.

Table 5.10: Capital Structure: Robustness Tests 2: Non-linear Effects

Model	I a	I b	I c	II
	Quadratic Firm Size	Small firms	Large firms	Winsorizing (2.5%)
Family Firm	**-0.061***	**-0.059**	**-0.067***	**-0.050***
	(-3.21)	**(-2.40)**	**(-2.75)**	**(-2.98)**
Firm Size [Ln]^2	0.040**			
	(2.48)			
Firm Size [Ln]		0.037***	0.031***	0.039***
		(6.05)	(3.48)	(8.91)
Profitability	-0.000076	-0.72***	-0.00015**	-0.27***
	(-0.89)	(-7.51)	(-2.38)	(-6.48)
Outside Blockholders	-0.035	-0.021	-0.034	-0.023
	(-1.40)	(-0.77)	(-0.92)	(-1.08)
Firm Specific Risk	0.14***	0.29***	0.073***	0.19***
	(4.65)	(6.38)	(4.10)	(7.37)
Firm Age [Ln]	0.0095	0.0085	0.028**	0.010
	(1.26)	(0.98)	(2.40)	(1.43)
Tangible Assets Ratio	0.24***	0.19***	0.40***	0.23***
	(5.06)	(3.18)	(6.68)	(5.06)
Market-to-Book	-0.00041	-0.00036	-0.00035	-0.032***
	(-0.90)	(-0.73)	(-0.90)	(-10.4)
Accounting Standard	0.075***	0.081***	0.079***	0.091***
	(4.34)	(3.88)	(3.26)	(6.07)
Payout Ratio	-0.026	0.0023	-0.072***	-0.022
	(-1.64)	(0.13)	(-3.19)	(-1.54)
Industry Leverage	0.55***	0.40***	0.48***	0.35***
	(6.58)	(3.63)	(3.38)	(4.43)
Expected Inflation	0.043***	0.037**	0.022	0.039***
	(3.59)	(2.48)	(1.16)	(4.00)
Constant	-0.26**	-0.17	-0.32**	-0.11
	(-2.14)	(-1.35)	(-2.31)	(-1.13)
Observations	3859	2248	1611	3859
Number of clusters	591	299	292	591
Adj. R-squared	0.26	0.35	0.31	0.38

A detailed description of the variables can be found in table Appendix 1. The dependent variable is MARKET LEVERAGE. All models are pooled-OLS regressions. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Ampenberger et al. (2009).

Other blockholders

Another potential concern is that the results for family firms are not caused by lower leverage of family firms but by higher leverage ratios in firms with other types of blockholders.

In the prior analysis, I compared family firms to the universe of non-family firms, which is, of course, heterogeneous. To account for this concern, I introduce dummy variables for the existence of several types of non-family blockholders, namely government, financial, private and strategic blockholder (cf. table 5.11, model Ia).[20] As the results demonstrate, family firms show less leverage even after controlling for those types of blockholders. None of the blockholder variables is statistically different from zero, except for financial block-holders which lead to a slightly higher leverage.

Furthermore, bank ownership is both very common in the German environment and potentially important for capital structure decisions (models Ib and Ic). Bank ownership might lower informational asymmetries and conflicts between debt and equity providers, leading to lower cost and hence higher attractiveness of debt. In order to control if these effects bias the results for family firms, I introduce bank ownership as additional control variable. In a first step, I include the total bank ownership. As the regression indicates, bank ownership increases leverage. However, family firms show less leverage even after controlling for bank ownership. In a second step, I split bank ownership in ownership by domestic and foreign banks. Interestingly, only domestic shareholders lead to a higher leverage ratio. Again, family firms show lower levels of leverage as compared to non-family firms, even after controlling for bank ownership.

As last type of blockholder, I control for insider ownership in the robustness test (model Id).[21] Theoretical arguments (based on interest alignment, risk aversion and control) postulate that firms with high levels of insider ownership use leverage. Hence, the prior results for family firms might be biased by the fact that insider and family ownership have considerable interference (cf. figure 2.1 on page 19). However, the results show no effect of insider ownership. Consequently, I claim that the prior results are caused by family firm characteristics and not by insider ownership.

Endogeneity

As in most empirical corporate governance studies, endogeneity may be a problem with the analysis of capital structure decisions in family firms. The methods that help to alleviate

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[20]For the construction of these variables, cf. section 4.1.2.
[21]For the construction of these variable, cf. section 4.1.2.

concerns of endogeneity are described in section 4.4.2.

I start with potential "reverse causality". In general, the results remain robust to the use of a lagged family firm variable (cf. 5.11, model IIa). I additionally use a propensity score based matching procedure, which is described in detail in section 4.4.2. For this, a year-wise kernel matching approach based on a propensity score is applied. To allow for a reasonable time of capital structure adjustment, I compare the book leverage two years before and two years after the treatment. For this, capital structure data on 78 firms that change from a family to a non-family firm is available.[22] I find that the average treatment effect on the treated (ATT) is 0.104 and significant.[23] Since standard errors may be biased I alternatively used a bootstrapping method to calculate them, but the results were in the same order of magnitude.

Besides the matching estimator based on the advancement of family firms to non-family firms, I apply a matching estimator on another treatment: the exit of the last family member from the firm's management board. This is especially promising since my prior analyses show that the involvement of family members in the management board has a strong (negative) influence on leverage. The matching estimator is constructed in a very similar way as described above. However, I first consider only those family firms with family representation in the management board at any time during my sample period. In a second step, I identify those firms in which the family leaves the management board during the sample period and use this "exit" as the treatment variable. Propensity score calculation and measurement of changes in the book leverage are equal to the estimator for the development of family firms to non-family firms. As expected, I find a positive average treatment effect on the treated (ATT) with a coefficient of 0.111. The corresponding t-value is 2.42, with similar results obtained from bootstrapped standard errors.

To alleviate concerns regarding omitted variables, I conduct an instrumental variable approach, which is described in detail in section 4.4.2. First stage regression results are not reported. I report the results of the second-stage-regressions in table 5.11, model IIb. The

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[22]In general, there are 115 transitions in my sample. However, due to data constraints not all of them can be used in this context.

[23]Just recently, Lemmon et al. (2008), p. 1576 conclude that "leverage ratios are remarkably stable over time". Against this background the observed changes in capital structure on this large scale around the treatment events is interesting and a strong sign for the causal effects of family firm characteristics on capital structure decisions.

results demonstrate that the instrumented dummy for family firms is still negative and significant at the 1%-level. Hence, the instrumental variable helps to alleviate concerns that the results are biased by omitted variables.

To summarize, these tests accounting for potential endogeneity strongly support the prior results: Family firms evolving to non-family firms significantly change their capital structure. In fact, leverage ratios increase significantly after some time period necessary for adjustment of capital structure. A similar effect is observed for the withdrawals of family members from the management board. Furthermore, an instrumental variable approach leads to similar results as the prior regressions. Overall, these robustness tests suggests a significant, negative and causal relationship between family firm characteristics (especially family involvement in the firm's top-management) and the level of leverage.

Table 5.11: Capital Structure: Robustness Tests 3: Blockholders and Endogeneity

Model	I a	I b	I c	I d	II a	II b
	Blockholder Identity				Endogeneity	
	Type	*Banks*		*Insiders*	*1-year lag*	*TE*
Family Firm	-0.049***	-0.059***	-0.059***	-0.058***	-0.049**	-0.18***
	(-2.61)	(-3.12)	(-3.12)	(-2.99)	(-2.38)	(-2.59)
Government Bl.	0.051					
	(1.17)					
Financial Bl.	0.042*					
	(1.68)					
Private Bl.	-0.0048					
	(-0.15)					
Strategic Bl.	-0.017					
	(-0.84)					
Bank Ow.		0.21***				
		(3.30)				
Foreign Bank Ow.			0.22***			
			(3.32)			
Domestic Bank Ow.			-0.071			
			(-0.26)			
Insider Ow.				-0.020		
				(-0.55)		
Control Variables	*Results for control variables not reported*					
Observations	3859	3859	3859	3859	3303	3794
Number of clusters	591	591	591	591	541	583
Adj. R-squared	0.26	0.26	0.26	0.26	0.22	...
Model	OLS	OLS	OLS	OLS	OLS	TE

A detailed description of the variables can be found in table Appendix 1. The dependent variable is MARKET LEVERAGE. TE is a treatment effects model. Bl. stands for blockholder ans Ow. for ownership. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Ampenberger et al. (2009).

5.2.5 The "force" behind capital structure decisions in family firms

The previous analyses demonstrated that listed family firms in Germany have significantly lower leverage ratios than non-family firms. This result does not depend on the estimation method and is mainly driven by simultaneous family ownership and management. A

battery of robustness tests shows that this result is robust against several concerns. Despite the very robust results, the interpretation is still sophisticated. In particular, it is unclear what determines the lower leverage in family firms. In order to discriminate between the lower agency conflict I (*hypothesis CS-H1*) and the higher agency conflict II (*hypothesis CS-H2*) rationale[24], I apply different empirical test settings. Results are presented in tables 5.12 and 5.13.

Alignment versus voting power

In this section, an empirical test setting to discriminate between the convergence of interest (*hypothesis CS-H1b*) and the extraction of private benefits (*hypothesis CS-H2*) is presented. For this purpose, two empirical tests are conducted. The first test analyzes if large external blockholders beneath the family influence the capital structure decision in family firms. A large blockholder beneath the family can hinder them from extraction private benefits from "their firm". For this, two dummy variables that indicate an "uncontrolled" family shareholder if there is no external blockholder with at least 5% (25%) of the firm's voting rights and a "controlled" family shareholder if such a blockholder exists are analyzed (cf. 5.12, model Ia and Ib). A family shareholder is in place if the family owns at least 25% of the firm's voting rights. The results, which are presented in table 5.12, show that uncontrolled family shareholders chose significantly lower leverage ratios than controlled family shareholders. If a firm has both a family and an outside blockholder with 25% of ownership, leverage ratios are even (slightly) higher than in non-family firms. If convergence of interest and hence lower agency conflict I would be the "force" behind lower leverage ratios in family firms, I would expect that controlled and uncontrolled family shareholders choose similar levels of leverage since interest alignment should not be affected by a second external blockholder. Since lower leverage ratios are only found in firms with uncontrolled family shareholders, I conclude that higher agency conflict II is responsible for the prior results since a second large blockholder may hinder family shareholders from extracting private benefits of control.

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[24]As found out before, neither monitoring incentives of family shareholders (*hypothesis CS-H1a*) nor lower agency conflict III (*hypothesis CS-H3*) are the rationale behind capital structure decisions in family firms.

Table 5.12: Capital Structure: Agency Conflict I vs. II

Model	I a	I b	II a	II b	II c	II d
	Controlled vs. uncontrolled		Interest alignment versus voting power			
	5%-blockholder	25%-blockholder	Index	Median	75%-percentile	Mean
Controlled Family	-0.015	0.036*				
	(-0.75)	(1.83)				
Uncontrolled Family	-0.069***	-0.068***				
	(-2.98)	(-3.17)				
Alignment Index			-0.054			
			(-0.86)			
Voting power Index			-0.053**			
			(-2.15)			
Type I Family Firm				-0.050**	-0.050**	-0.051**
				(-2.24)	(-2.52)	(-2.37)
Type II Family Firm				-0.062**	-0.058**	-0.055**
				(-2.23)	(-2.18)	(-2.18)
Type III Family Firm				-0.042	-0.036	-0.032
				(-1.62)	(-1.26)	(-0.82)
Type IV Family Firm				-0.089***	-0.13***	-0.088***
				(-3.31)	(-4.38)	(-3.29)
Control variables	*Results for control variables not reported*			*Results for control variables not reported*		
Observations	3859	3859	3840	3859	3859	3859
Number of clusters	591	590	589	591	591	591
Adj. R-squared	0.25	0.25	0.25	0.26	0.26	0.26

A detailed description of the variables can be found in table Appendix 1. The dependent variable is MARKET LEVERAGE. All models are pooled-OLS regressions. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Ampenberger et al. (2009).

The second test analyzes the firm-specific factors influencing the two agency conflicts. Convergence of interest is assumed to be highest if the family is both a large shareholder and controls a significant part of the firm's management board. To measure this, an ALIGNMENT INDEX is constructed. In contrast, the family's possibility to extract private benefits are highest if they have huge voting power and no other external blockholder with the power to control them is present in the firm. Hence, I construct a voting power index. For the ALIGNMENT INDEX, the product of the family's voting rights and the fraction of executive managers related to the family is used. For example, if all managers of the firm have a relation to the family and if the family controls all voting rights, the alignment index would equal one. The VOTING POWER INDEX is the fraction of the family's voting rights to the voting rights in hands of all blockholders with a voting rights ownership stake above 5%. Hence, if the family is the only blockholder, the voting power index equals one. As a first analysis, I perform a model with the alignment index and the voting power index as additional control variable (cf. table 5.12, model IIa). I find that the voting power index has a strong negative impact on the leverage ratio, while the alignment index has no effect. In a second step, I subdivide all family firms based on their alignment and voting power index. For this, I define four family firm types:

Type I family firm: Low alignment index and low voting power index

Type II family firm: Low alignment index and high voting power index

Type III family firm: High alignment index and low voting power index

Type IV family firm: High alignment index and high voting power index

First, the median index value (model IIb) is used as divisor between high and low. Second, the 75% percentile (model IIc) and third, the mean of the index value (model IId) is used as divisor. For all types of family firms lower leverage ratios as in non-family firms are expected since both alignment and voting power are in place. As argued before, voting power should influence the capital structure decision if agency conflict II is the "force" behind lower leverage ratios in family firms. Consequently, type II and IV family firms are expected to have the lowest leverage ratios. If lower agency conflict I is the rational, high interest alignment is expected to cause lower leverage. Hence, in this case type III and IV family firms are assumed to have the lowest leverage ratios. Results for this test

are presented in 5.12, models IIb to IId. The results show that both type I and IV family firms have lower levels as their non-family counterparty. Interestingly, type III family firms have no statistically significant lower leverage ratios as non-family firms, although the coefficient is negative. Contrary, type II family firms have significantly lower ratios. Hence, I argue that the firm-specific factor leading to lower leverage ratios in family firms is voting power by the family and not interest alignment.

Both tests presented in this section lead to the conclusion that lower leverage ratios in family firms are caused by higher agency conflict II and - as a consequence - extraction of private benefits of control by the family shareholders. Hence, *hypothesis CS-H2* has to be accepted, while *hypothesis CS-H1b* and hence *hypothesis CS-H1* are rejected. However, the question if these private benefit is risk aversion (*hypothesis CS-H2a*) or control retention (*hypothesis CS-H2b*) can still not be answered. The next section presents a test setting that addresses this question.

International evidence

As shown in the previous section, higher agency conflict II and not lower agency conflict I is the "force" behind lower leverage ratios in family firms. In order to further investigate this aspect, i.e. to determine whether families avoid debt due to risk aversion (*hypothesis CS-H2a*) or control retention (*hypothesis CS-H2b*), I extend the analysis to international data on family firms and capital structure decisions. If control retention leads to lower leverage ratios in family firms, shareholder and creditor right protection in a specific institutional environment are expected influence the family's decision about the debt / equity mix. In countries with high investor protection, family firms might use more or equal levels of debt to forgo control loss by shareholders, while the opposite is true for countries with weak shareholder rights protection. Furthermore, international data provide an additional test for the conclusion that agency conflict I is not the "force" behind lower leverage in family firms.[25]

To analyze the capital structure decisions of family firms in different institutional envi-

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[25]If lower agency conflict I causes lower leverage ratios, I expect no effect of the shareholder protection in a country since both interest alignment and monitoring incentives are higher in family firms independent of shareholder protection.

ronments, I use ownership data provided by Claessens et al. (2000). These data cover nine East Asia countries, for which I obtain accounting information via *Worldscope* for the years 1998 to 2002. I define family firms as those firms with at least 20% family ownership and management representation of the family. Since Claessens et al. (2000) do not distinguish between family and family ownership, this definition differs from the one used in the analysis of German corporations. However, by defining only those firms as family firms which have both family ownership and management, the difference should be small since family representation is characteristic for founders and their families. To measure the level of shareholder and creditor right protection, I use the LaPorta et al. (1998) CREDITOR and SHAREHOLDER RIGHTS index.[26]

In a first step, I analyze differences between family firms and their non-family counterparts in terms of market leverage with consideration of the creditor and shareholder rights index as control variables (cf. table 5.13, model I).[27] Interestingly, family firms do not differ from their non-family counterparts in terms of leverage in this specification. As expected, creditor rights in a country decrease leverage, while shareholder rights have the opposite effect. In a second step, I interact the family firm variable with the countries level of shareholder protection. If control retention is the rationale behind my prior result of lower leverage ratios in family firms, they are expected to avoid equity as source for financing if shareholder protection is high. After inclusion of the interaction term, the results change significantly (model II): Family firms show - on average - lower levels of leverage. If shareholder protection is high, family firms change their policy and prefer debt over equity, i.e. they increase their leverage. In principle, these results are in line with those of Ellul (2009) who analyzes firms from Western Europe and the U.S. However, I find in contrast to Ellul (2009) that family firms have on average lower leverage ratios after controlling for an interaction term of the family firm status and the level of shareholder protection. A possible explanation for this difference is that the level of shareholder protection and legal enforcement is lower in East Asia than it is in Western Europe and the U.S., and hence equity is - on average - more attractive for family firms in those countries.

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[26]Unfortunately, I am not able to include all control variables in this specification, e.g. outside blockholders or firm age. Furthermore, ownership information is static over time. Hence, I apply only pooled-OLS and between-firm effects regressions. However, I find comparable signs as in my and other studies on capital structure for the control variables. Hence, I argue that there is no reason to believe that these drawbacks bias the results for family firms.

[27]Not reported results for book leverage lead to qualitatively similar results.

Table 5.13: Capital Structure: International Evidence

Model	I a	I b	II a	II b
Family Firm 2	**0.013**	**0.013**	**-0.091*****	**-0.092*****
	(1.24)	**(1.26)**	**(-2.62)**	**(-2.77)**
Shareholder Rights * Family Firm 2			**0.031*****	**0.031*****
			(3.16)	**(3.24)**
Creditor Rights	-0.025***	-0.024***	-0.022***	-0.024***
	(-3.53)	(-3.32)	(-3.14)	(-3.34)
Shareholder Rights	0.050***	0.062***	0.045***	0.033***
	(4.85)	(6.46)	(4.01)	(2.72)
Sales [Ln]	0.042***	0.045***	0.045***	0.042***
	(13.8)	(15.8)	(15.9)	(14.0)
Profitability	-0.25***	-0.22***	-0.23***	-0.25***
	(-2.90)	(-4.56)	(-4.74)	(-2.92)
Market-to-Book [Ln]	-0.20***	-0.19***	-0.19***	-0.20***
	(-11.2)	(-17.6)	(-17.6)	(-11.2)
Dividend [Dummy]	-0.19***	-0.26***	-0.26***	-0.19***
	(-18.9)	(-21.4)	(-21.5)	(-18.9)
Tangible Assets Ratio	0.050***	0.045***	0.046***	0.050***
	(3.92)	(3.67)	(3.77)	(4.00)
Stock Volatility	0.054***	0.033***	0.033***	0.053***
	(6.30)	(4.29)	(4.32)	(6.31)
Constant	0.20***	0.22***	0.28***	0.25***
	(3.10)	(3.47)	(4.20)	(3.80)
Observations	7575	7575	7575	7575
Adj. R-squared	0.46	0.49	0.50	0.46
Model	OLS	BE	OLS	BE

A detailed description of the variables can be found in table Appendix 1. The dependent variable is MARKET LEVERAGE. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Ampenberger et al. (2009).

Risk aversion as the "force" behind lower leverage ratios in German family firms is not able to explain the results for East Asian firms.[28] If risk aversion were the reason, the level of shareholder protection should not influence the family's decision concerning the leverage ratio. Behind this background, that the desire of the family for control retention is the main "force" behind capital structure decisions in family firms. Hence, *hypothesis CS-H2a* is rejected, while *hypothesis CS-H2b* is accepted.

In this context, German family firms avoid debt in order to decrease their loss of control to debt providers. Especially in the German environment, equity might be an attractive

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[28]Furthermore, convergence of interest, which was excluded as possible explanation in the last section, would neither be able to explain this result.

source for financing for family firms because Germany lacks an active market for corporate control, shareholder representation at the annual shareholder meeting is comparatively low and incentives for shareholders to take legal actions are still limited with regard to weak law enforcement (cf. Goergen et al. (2008)). In contrast, relationship-based lenders, such as the German house-banks, have strong incentives to acquire information, benefit from repeated actions with the borrower and engage in monitoring the management (Greenbaum and Thakor (1995), Boot (2000), Elsas and Krahnen (2004)). Moreover, banks do not only play a pivotal role in economic viable firms but do also actively engage in restructuring distressed firms (Brunner and Krahnen (2008), Jostarndt and Sautner (2010)). Consequently, equity is more attractive for family firms as debt in the German environment.

5.2.6 Summary

The results demonstrate that family firms use less debt (irrespective of the leverage definition applied) than their non-family counterparts. In a second step, I show that family ownership per se does not change the firm's capital structure decision. Only in firms in which family ownership is accompanied by the family's involvement in the top-management (either as member of the management board or CEO), leverage ratios are lower. These results are robust to a battery of robustness tests. Finally, I use a propensity-score based matching estimator and an instrumental variable approach to alleviate concerns of endogeneity. Overall, my empirical analysis suggests a strong, negative and causal relationship between family firm characteristics (especially family management in combination with family ownership) and the level of leverage.

Although the result of lower leverage ratios within German family firms is very robust, the interpretation why family firms use less debt is not straightforward. Hence, different empirical tests are implemented in order to identify the force behind the results (i.e. lower agency conflict I or higher agency conflict II).[29] Thereby it can be shown that not lower agency conflict I, but higher agency conflict II and control retention as private benefit of the family is the "force" behind lower leverage ratios in family firms. To disentangle the impact of agency conflict I and II, the level of interest alignment is tested against the family's

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[29]Since family firms are found to have lower leverage ratios, lower agency conflict III disqualifies as the rationale behind this result. Hence, the following tests focus on agency conflict I and II as potential explanations.

voting power and the scope of the analysis is extended to international data on East Asian firms. Hence, lower leverage ratios in family firms are not an optimal response to their different governance system (i.e. lower agency conflict I and hence less need for debt as disciplinary device for management), but an extraction of private benefits of control. The long-term orientation and the desire to bequeath the family business to future generations create a strong need to avoid a loss of control over the family business. I provide evidence that such control retention matters in the context of capital structure decisions in family firms. While Ellul (2009) argues that family shareholders in general prefer equity over debt with regard to control considerations, my results show that this depends on the monitoring incentives of the firm's different stakeholders and their possibilities to exercise control. If monitoring incentives and control possibilities of banks in a corporate governance regime like the German are very strong, family firms rely less on debt in order to avoid tighter creditor monitoring and retain control over the family business. Hence, family control retention as a form of private benefits of control might be an explanation for hitherto inconclusive results on family firms and capital structure decisions.

5.3 Payout policy decisions in family firms

The following sections deal with the question if and why family firms differ from their non-family counterparts in terms of payout policy. First, the question if there are overall differences between family and non-family firms is addressed. In a second step, the effects of family ownership and family management are analyzed. After that, a large battery of robustness tests is presented to demonstrate that the results are stable against several different concerns, e.g. endogeneity. In a last step, the reason for differences between family firms and their non-family counterparts is investigated.[30]

5.3.1 Family firms versus non-family firms

First, I test *hypothesis PA-H1* stating that family firms have less payout than non-family firms against *hypothesis PA-H2* which claims the opposite. For this, I first analyze the

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[30]Please note that the following sections are partly based on Schmid et al. (2010).

firms' propensity to pay dividends, buy back shares and conduct any payout with help of probit models (cf. section 4.4.1). Results are reported in table 5.14.

As indicated by the results, family firms have a significantly higher propensity to pay dividends, while the existence of other non-family shareholders has the opposite effect (model Ia). With regard to the propensity for share repurchases there seems to be no difference between family firms and non-family firms (model Ib). However, the low number of only 389 share repurchase events in the 1995 to 2006 period might adversely affect the estimation quality of the probit model for share repurchases. While the Pseudo R-square for the probit model on dividend payments and total payout is 41% and 33%, it is only 12% for the probit model on share repurchases. Hence, the estimation results for share repurchases have to be interpreted with some caution. In terms of the overall probability for any kind of payout (dividend or share repurchase), family firms have again a significantly higher payout probability than non-family firms (model Ic).

Table 5.14: Payout Policy: Family Firms (Propensity)

Model	I a	I b	I c
	Dividend	Repurchase	Payout
Family Firm	**0.32***	**0.056**	**0.26***
	(2.96	**(0.56)**	**(2.69)**
Outside Blockholder [25%]	-0.33***	-0.20**	-0.26***
	(-3.12)	(-1.98)	(-2.83)
Firm Size [Ln Assets]	0.30***	0.11***	0.25***
	(8.18)	(3.33)	(7.28)
Profitability [ZDP]	0.59***	0.089	0.25
	(3.43)	(0.68)	(1.60)
Voting-Cashflow Wedge	0.46***	-0.029	0.35**
	(2.79)	(-0.20)	(2.15)
Book Leverage	-0.88***	-0.90***	-1.14***
	(-4.40)	(-4.61)	(-6.03)
Firm Specific Risk	-2.68***	-0.47***	-2.21***
	(-11.9)	(-2.72)	(-11.4)
Firm Age [Ln]	0.11**	-0.070*	0.12***
	(2.40)	(-1.73)	(2.95)
Market-to-Book	0.00087	-0.0014	0.00035
	(0.78)	(-0.24)	(0.26)
Mean Industry Level	3.09***	5.93***	3.07***
	(6.17)	(6.19)	(5.67)
Observations	3894	3125	3536
Pseudo R-square	0.41	0.12	0.33

A detailed description of the variables can be found in table Appendix 1. All models are probit regressions. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2010).

In a second step, the payout level is analyzed. Results for this are reported in table Appendix 11. As explained in section 4.3.2, "zero distribution profits" are used as a proxy for corporate earnings to normalize total dividends, share repurchases and the sum of both payout vehicles. However, the results largely support those from the probit regressions: Family firms pay more dividends and have more total payout than their non-family counterparts. However, the statistical significance of the results is rather weak, especially for total payout.

Consequently, I have to reject *hypothesis PA-H1* which predicts lower payout in family firms and accept *hypothesis PA-H2* which predicts the opposite. Higher agency conflict

II, and not lower agency conflict I, seems to influence the behavior of family firms with respect to their payout policy.

Furthermore, I find that firm size, profitability and firm age are positively correlated with the propensity for dividends or any payout. Larger, older and more profitable firms have a higher payout probability. In addition, the usage of control-enhancing instruments (such as pyramidal ownership or dual-class shares) and the associated deviation from the one share-one vote-principle increases the probability for payouts. Firms that operate in industries with a large number of dividend paying firms show a higher payout probability. In contrast, firm-specific risk and book leverage are negatively correlated with the dividend payment propensity. Finally, there seems to be no significant influence of the market-to-book ratio (as a proxy for growth opportunities). For the probit estimations on share repurchases, I find that the control variables are less significant and point partly in different directions. In terms of firm age, younger firms are more likely to use share repurchases as payout vehicle to shareholders. By and large, the control variables in the regressions on the payout levels point in the same direction (cf. table Appendix 11).

5.3.2 Family ownership and management

In a second step, I analyze the impact of family ownership alone and family ownership in combination with family management. The results, which are presented in table 5.15, indicate that the propensity to pay dividends is positively affected by family ownership while family management does have no impact (model Ia). A similar effect can be observed for the total payout propensity (model Ic). However, neither family ownership nor family management have an impact on the probability of share repurchases (model Ic). Regarding the dividend payout ratios, similar results are found (cf. table Appendix 12). Hence, family ownership has a strong positive influence on the dividend and total payout ratio while the influence of family management is insignificant.

Table 5.15: Payout Policy: Family Ownership and Management (Propensity)

Model	I a	I b	I c
	Dividend	Repurchase	Payout
Family Ownership	**0.56****	**0.26**	**0.73*****
	(2.39)	**(1.27)**	**(3.52)**
Family Management	**0.085**	**-0.028**	**-0.031**
	(0.63)	**(-0.23)**	**(-0.27)**
Outside Blockholder [25%]	-0.29***	-0.18*	-0.22**
	(-2.78)	(-1.72)	(-2.29)
Firm Size [Ln Assets]	0.30***	0.11***	0.24***
	(8.07)	(3.30)	(7.17)
Profitability [ZDP]	0.56***	0.077	0.21
	(3.28)	(0.58)	(1.39)
Voting-Cashflow Wedge	0.44***	-0.053	0.31*
	(2.67)	(-0.35)	(1.95)
Book Leverage	-0.89***	-0.90***	-1.16***
	(-4.43)	(-4.60)	(-6.12)
Firm Specific Risk	-2.67***	-0.47***	-2.21***
	(-12.0)	(-2.71)	(-11.4)
Firm Age [Ln]	0.10**	-0.070*	0.11***
	(2.20)	(-1.72)	(2.68)
Market-to-Book	0.00093	-0.0013	0.00042
	(0.82)	(-0.22)	(0.31)
Mean Industry Level	3.10***	5.91***	3.10***
	(6.17)	(6.15)	(5.65)
Observations	3894	3125	3536
Pseudo R-squared	0.41	0.12	0.33

A detailed description of the variables can be found in table Appendix 1. All models are probit regressions. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2010).

The results indicate that family ownership and not family representation in the firm's top-management affects payout policy in family firms. To summarize, the payout policy is family firms is in line with the higher agency conflict II rationale (*hypothesis PA-H2*), with control retention as the private benefit for the family. By choosing higher levels of dividends, the family can generate a steady income stream without any loss of control over "their" firm.

5.3.3 Robustness tests

This section explores the robustness of the results for payout policy. The focus lies on the following aspects: (i) misspecifications, (ii) size effects and lagged variables, (iii) sample composition and tax regime effects (iv) the influence of other blockholders and (v) concerns of endogeneity. In this section, probit estimations for the propensity to pay dividends are reported, if not stated otherwise. I focus on dividends (rather than share repurchases or total payouts) in the robustness tests since dividends are the dominant payout vehicle in Germany. However, unreported robustness tests with the overall propensity for payout instead of the dividend payout propensity as dependent variable lead to similar results.

Misspecifications

The results are stable regarding the usage of several alternative control variables, such as ln sales or ln employees in lieu of ln assets as a proxy for firm size, ln IPO age in lieu of ln firm age as a proxy for the firm's life cycle stage or total risk in lieu of firm-specific risk. The results remain also robust if only dividends to common shareholders instead of dividends to common and preferred shareholders are considered (results are areunreported).

Following the previous literature on dividend policy in Germany, I use ZDP in order to normalize dividend payments, share repurchase and total payouts (cf. section 4.3.2). One advantage of these payout ratios is that they account for the difference in taxation of retained and distributed earnings under the full imputation system before 2001. However, from a legal perspective payout decisions are based on annual net income (which is also used to calculate payout ratios in former empirical work, e.g. in Julio and Ikenberry (2004) or von Eije and Megginson (2008)). Additionally, Andres et al. (2008) argue that German firms base their dividend payout decisions on cashflows rather than earnings. For these reasons, I calculate two alternative payout ratios: First, I normalize dividend payments by annual net income and second by cashflow. Thereby, I calculate the cashflow as the "zero-distribution profits" plus depreciation and changes in pension provision and provisions for risks and charges. In both models, which are not reported, the coefficient for family firms remains positive and significant.

Size effects and lagged variables

There is a tendency that large established and profitable firms account for the majority of payouts (cf. DeAngelo et al. (2004)). This trend is also confirmed in my sample as over the entire sample period the 10% of the most profitable firms account for 79% of all payouts (cf. section 5.1.3). To test whether non-linear size effects affect the results for family firms, the median firm size is used in order to divide the sample in a subset of large and small firms. Results are reported in table 5.16, models Ia and Ib. Thereby, I find that the coefficient for family firms is positive and statistically different from zero at the 1%-significance-level in the subset of large firms but insignificant in the subset of small firms. One reason for this result might be that the propensity to pay out dividends is strongly correlated with firm size. In general, larger and mature firms are more likely to pay dividends (and distribute their earnings) than young and growing firms (which prefer to retain earnings for profitable investments). This effect seems to be especially pronouced in family firms.

Furthermore, the payout policy in a specific year may be strongly influenced by the firm's characteristics of last year. Consequently, I analyze if this effect leads to a bias for my results in two ways: First, replace the contemporary values of the control variables with those one year before. Second, I use the first lag for all variables, including the family firm status. However, the results shown in table 5.16, models IIa and IIb, indicate that the results are highly robust to the usage of lagged variables.

Table 5.16: Payout Policy: Robustness Tests 1: Size effects and Lagged Variables

Model	I a	I b	II a	II b
	Size Effects		Lagged Variables	
	Small Firms	Large Firms	Only Control	All
Family Firm	**0.033**	**0.55*****	**0.25****	**-0.37*****
	(0.20)	**(4.01)**	**(2.20)**	**(-3.28)**
Outside Blockholder [25%]	-0.34*	-0.37***	-0.36***	0.32***
	(-1.94)	(-2.90)	(-3.15)	(7.88)
Firm Size [Ln Assets]	0.31***	0.25***	0.32***	1.29***
	(3.02)	(5.01)	(7.90)	(7.50)
Profitability [ZDP]	0.46**	1.06**	1.29***	0.40**
	(2.32)	(2.14)	(7.48)	(2.25)
Voting-Cashflow Wedge	-0.031	0.55***	0.40**	-1.26***
	(-0.100)	(2.71)	(2.27)	(-5.52)
Book Leverage	-0.65**	-1.21***	-1.25***	-2.47***
	(-2.34)	(-3.92)	(-5.50)	(-9.62)
Firm Specific Risk	-2.35***	-2.88***	-2.46***	0.13**
	(-8.12)	(-8.82)	(-9.60)	(2.53)
Firm Age [Ln]	0.12	0.10*	0.13***	-0.00039
	(1.41)	(1.90)	(2.58)	(-0.29)
Market-to-Book	0.0013	0.00055	-0.00038	1.90***
	(0.60)	(0.42)	(-0.29)	(3.84)
Mean Industry Level	2.24***	3.83***	1.91***	0.22*
	(2.85)	(5.15)	(3.88)	(1.88)
Observations	1663	2231	3315	3315
Pseudo R-square	0.32	0.31	0.41	0.41

A detailed description of the variables can be found in table Appendix 1. All models are probit regressions on the variable DIVIDEND. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2010).

Sample composition and tax regime effects

As argued in section 4.1.4, the sample composition is heavily affected by the large number of IPOs during the 1998 to 2000 period. In the context of payout policy decisions, the changing sample composition can affect the results in several ways. One concern is that new lists during the 1998 to 2000 period have different firm characteristics than established companies. For the U.S., Fama and French (2004a) have argued that both the number and

characteristics of new lists have changed substantially in the U.S.[31] Furthermore, Fama and French (2001) show that these changing firm characteristics can have a large influence on corporate policy decisions. In this vein, von Eije and Megginson (2008) argue that the huge increase of listed firms on technology markets such as the Alternative Investment Market (U.K.) or the Neuer Markt (Germany), might be responsible for the large decline in terms of cash dividend payers. Their argument is that "high-tech" firms distribute fewer profits among their shareholders due to high internal growth opportunities. Hence, I analyze whether the changes in the sample composition affect the results for firms' payout policy decisions. To do so, I run a regression model for two additional, separate sub-samples: One regression is based on a sub-sample of firms whose Initial Public Offering was in the 1998 to 2000 period and one regression for the sub-sample of firms with an IPO before or after this IPO boom phase. Results are reported in table 5.17, models Ia and Ib. As an alternative test, I use the full sample and include a dummy variable for an IPO between 1998 and 2000 (model Ic). The coefficients for family firms are positive in all three specifications. However, the effect for family firms with an IPO between 1998 and 2000 is not significant. By contrast, the coefficient for family firms remains different from zero at the 1%-significance-level in the other two models. This suggests that the family firm effect is stronger among established firms if compared to "high tech" firms.

Another possible concern about the analysis are changes in the taxation of dividends and share repurchases which may influence firms' payout decisions depending on their ownership structure. Several authors have argued that a tax clientele effect exists (cf. for example Lie and Lie (1999), Fenn and Liang (2001), Perez-Gonzalez (2002) and Barclay et al. (2009)). Since Germany underwent a major tax reform in the year 2001[32], I control for this heterogeneity by dividing the sample into two sub-periods: one sub-sample covers only observations during the 1995 to 2000 period (six years under the "old" tax regime, model IIa) while the other sub-sample covers only firm-year observations during the 2001 to 2006 period (six years under the "new" tax regime, model IIb). However, the results indicate that family firms have a higher propensity to pay dividends before and after the tax reform. Hence, the results are not biased by the change of the tax system from a full

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[31]By and large, they find that new lists show more left skewed profitability in combination with more right skewed growth options, resulting in a sharp decline of the survival rate.

[32]Section 2.3.4 provides a detailed discussion of the regulation and taxation of corporate payouts to shareholders.

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[32]Section 2.3.4 provides a detailed discussion of the regulation and taxation of corporate payouts to shareholders.

imputation system to a shareholder relief system.

Table 5.17: Payout Policy: Robustness Tests 2: Sample Composition and Tax Regime

Model	I a	I b	I c	II a	II b
		Sample Composition		Tax Regime	
	IPO 98-00	IPO before/after	Dummy IPO	95 - 00	01 - 06
Family Firm	**0.23**	**0.45*****	**0.33*****	**0.40*****	**0.27****
	(1.38)	**(2.83)**	**(3.05)**	**(2.64)**	**(2.18)**
Dummy IPO			**-0.13**		
			(-0.95)		
Outside Blockholder [25%]	-0.078	-0.42***	-0.33***	-0.28**	-0.35***
	(-0.47)	(-3.10)	(-3.13)	(-2.12)	(-2.68)
Firm Size [Ln Assets]	0.32***	0.31***	0.31***	0.23***	0.35***
	(5.45)	(6.22)	(8.10)	(4.87)	(8.07)
Profitability [ZDP]	0.63***	0.43	0.59***	0.77*	0.60***
	(3.09)	(1.25)	(3.42)	(1.90)	(3.26)
Voting-Cashflow Wedge	0.072	0.52**	0.44***	0.73***	0.37**
	(0.28)	(2.27)	(2.68)	(2.83)	(2.00)
Book Leverage	-0.095	-1.92***	-0.92***	-1.88***	-0.49**
	(-0.37)	(-5.42)	(-4.48)	(-5.55)	(-2.17)
Firm Specific Risk	-2.68***	-2.58***	-2.64***	-2.63***	-2.70***
	(-8.73)	(-7.69)	(-11.8)	(-8.31)	(-9.44)
Firm Age [Ln]	0.10	0.12*	0.098*	-0.0041	0.17***
	(1.39)	(1.79)	(1.96)	(-0.067)	(3.04)
Market-to-Book	0.0015	0.00085	0.00085	-0.0017	0.0042**
	(0.74)	(0.67)	(0.75)	(-0.74)	(2.23)
Mean Industry Level	1.37	4.08***	3.04***	4.32***	2.42***
	(1.47)	(5.52)	(6.04)	(4.25)	(3.01)
Observations	1692	2198	3890	1404	2490
Pseudo R-square	0.35	0.35	0.41	0.33	0.42

A detailed description of the variables can be found in table Appendix 1. All models are probit regressions on the variable DIVIDEND. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2010).

Other blockholders

The results are unchanged if I measure the influence of the non-family blockholders more accurate: For this, I use several dummy variables in order to distinguish blockholders according to their identity (government, financial, individual and strategic investor). The construction of these variables in described in section 4.1.2. Results are reported in table 5.11, models Ia and Ib. I find that the influence of family shareholders is robust under

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this specification (model Ia). Other types of blockholders have either no or the opposite effect. In particular, model Ia shows that large, strategic and financial shareholders have a negative influence on the dividend propensity. Government blockholder and individual blockholder do not affect payout policy. If I further analyze only firm-year observations in which a loss occurs, the influence of family shareholders remains positive and statistically different from zero at the 1%-level. By contrast, the effects of all other types of controlling shareholders are insignificant.

Additionally, I find that the number of outside blockholders has a negative effect on payout propensity (model IIa). Interestingly, this effect changes to the opposite if I restrict the test sample to firms with a controlling outside shareholder who owns at least 25% of the firm's voting rights. In this case, the effect of additional blockholders on dividend propensity is positive (model IIb). This finding is consistent with the results of Gugler (2003a), who argue that "rent extraction" of large blockholders may be limited if there are other powerful shareholder.

Table 5.18: Payout Policy: Robustness Tests 3: Non-Family Blockholders

Model	I a	I b	II a	II b
	Blockholder Identity		Number Outside Blockholders	
	All Firms	Non-Profitable	All Firms	With Blockholder
Family Firm	**0.28*****	**0.37*****		
	(2.62)	**(2.61)**		
Government Blockholder	**-0.33**	**-0.39**		
	(-1.25)	**(-1.02)**		
Finanical Blockholder	**-0.24***	**-0.19**		
	(-1.71)	**(-1.02)**		
Private Blockholder	**0.21**	**-0.031**		
	(1.11)	**(-0.11)**		
Strategic Blockholder	**-0.45*****	**-0.18**		
	(-3.42)	**(-1.12)**		
Number Blockholders			**-0.11*****	**0.14****
			(-3.38)	**(2.14)**
Firm Size [Ln Assets]	0.30***	0.32***	0.29***	0.26***
	(8.04)	(6.83)	(7.33)	(4.78)
Profitability [ZDP]	0.59***	-0.039	0.55***	0.33
	(3.44)	(-0.11)	(3.36)	(1.08)
Voting-Cashflow Wedge	0.41**	0.19	0.40**	0.51**
	(2.55)	(0.82)	(2.36)	(2.08)
Book Leverage	-0.91***	-0.48*	-0.97***	-1.45***
	(-4.59)	(-1.95)	(-4.74)	(-4.18)
Firm Specific Risk	-2.71***	-2.16***	-2.50***	-2.12***
	(-12.1)	(-7.32)	(-11.1)	(-6.50)
Firm Age [Ln]	0.11**	0.070	0.082*	0.081
	(2.46)	(1.20)	(1.84)	(1.22)
Market-to-Book	0.00098	0.00069	0.00071	0.000012
	(0.87)	(0.63)	(0.60)	(0.011)
Mean Industry Level	3.15***	5.45***	3.12***	3.22***
	(6.25)	(5.28)	(6.59)	(3.92)
Observations	3894	1257	3894	1514
Pseudo R-square	0.41	0.39	0.39	0.35

A detailed description of the variables can be found in table Appendix 1. All models are probit regressions on the variable DIVIDEND. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2010).

Endogeneity

A possible concern with this analysis is the that the relationship between family ownership, firm profitability and payout policy might be endogenous (cf. section 4.4.2). In particular, the family's decision to remain a large shareholder may be endogenous. For example, if there are information asymmetries between informed family owners and outside investors, the former may have incentives to sell their ownership stake if they believe the stock is overvalued or the firm will make substantial losses in the future. Under such circumstances, the positive relationship between family ownership and the higher payout propensity and level may be subject to reverse causality. In order to alleviate concerns of reverse causality, a propensity score based matching technique is applied (cf. section 4.4.2 for a detailed description of this approach).[33]

In this context, two types of matching estimators are used: the nearest neighbor estimator and kernel estimator. I analyze the impact of the transition from a family to a non-family firm along two dimensions: First, I compare the propensity to pay dividends and second, I compare the level of dividends paid. To allow for a reasonable time of payout policy adjustment, I compare the firm's dividend payouts two year after the transition with those two year before the transition. For this, dividend data for 58 firms that change from a family to a non-family firm is available.[34]

Both estimators lead to similar results: The propensity to pay dividends is significantly reduced through the transition from a family firm to a non-family firm. If I compare the treatment group with the control group (average treatment effect on the treated), the propensity to pay out dividends is lower for firms that evolved from a family to a non-family firm as compared to family firms which had a similar propensity for evolvement. The results are statistically significant (also if bootstrapped standard errors are used). Hence, the transition from a family firm to a non-family firm leads to a significantly lower propensity for dividend payments.

Finally, I perform a similar analysis for the dividend payout ratio. Thereby, the pay-

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[33]Of course, another potential source of endogeneity is omitted variable bias. One natural approach to deal with this problem is the application of an IV estimator. However, this approach is not included in the analysis presented in this dissertation.

[34]In general, there are 115 transitions in my sample. However, due to data constraints not all of them can be used in this context.

out ratio is found to decrease for firms that evolved from a family to a non-family firm. The results are statistically significant (also if bootstrapped standard errors are used), both for nearest neighbor and kernel matching. Altogether, the robustness test for potential reverse causality in the family firm payout relationship based on a propensity based matching technique suggests that there is indeed a causal relationship between family firm characteristics and dividend policy.

5.3.4 The "force" behind payout policy decisions in family firms

As demonstrated in the last sections, family firms have higher payouts, both if measured as the propensity to pay or as the level of payout. Since less agency conflict I predicts lower payout ratios in family firms (*hypothesis PA-H1*), the "force" behind payout policy in family firms is their higher agency conflict II. Higher payouts enable family shareholders to generate a steady income stream without loosing the control over "their" firm (*hypothesis PA-H2*). To further investigate this aspect, I analyze if founder-controlled or real family firms cause the observed differences for "general" family firms. If the control retention rationale holds true, I expect real family firms to show higher payout than founder-controlled and of course non-family firms.

Tensions within the family can affect payout policy choices because they might increase the need for a steady income stream to the family, especially if some family members are firm insiders, while others are outsiders. These intra-family disagreements about payout policy might be pronounced if there are conflicts between multiple family members and/or generations. For example, in the early years of the business, the founder might be willing to forgo corporate payouts in order to develop the business. However, in the later stage of the family business new family members and/or generations come in play and the potential for disagreement over the magnitude and timing of payouts might grow (cf. DeAngelo et al. (2009)). In this context, the need for a steady income stream without loosing control is more pronounced than in early stages of the firm.

To investigate this in greater detail, I follow the methodology of Miller et al. (2007) in order to distinguish between founder-controlled and real family firms (cf. section 2.1.2). The desire for dividends and payout in general is expected to be stronger in real family

firms than in founder-controlled firms if the control retention rationale holds true.

Table 5.19: Payout Policy: Founder-controlled vs. Real Family Firms (Propensity)

Model	I a	I b	I c
	Dividend	Repurchase	Payout
Founder-controlled Firm	**0.24***	**0.092**	**0.15**
	(1.90)	**(0.75)**	**(1.30)**
Real Family Firm	**0.37***	**0.020**	**0.35***
	(2.96)	**(0.16)**	**(3.11)**
Outside Blockholder [25%]	-0.33***	-0.20**	-0.26***
	(-3.12)	(-1.96)	(-2.82)
Firm Size [Ln Assets]	0.30***	0.11***	0.24***
	(8.11)	(3.36)	(7.21)
Profitability [ZDP]	0.59***	0.091	0.24
	(3.38)	(0.69)	(1.53)
Voting-Cashflow Wedge	0.45***	-0.021	0.33**
	(2.73)	(-0.14)	(2.07)
Book Leverage	-0.89***	-0.89***	-1.16***
	(-4.44)	(-4.56)	(-6.09)
Firm Specific Risk	-2.67***	-0.48***	-2.20***
	(-11.9)	(-2.75)	(-11.3)
Firm Age [Ln]	0.10**	-0.068	0.11***
	(2.21)	(-1.64)	(2.68)
Market-to-Book	0.00082	-0.0014	0.00031
	(0.73)	(-0.24)	(0.23)
Mean Industry Level	3.07***	5.92***	3.04***
	(6.13)	(6.17)	(5.57)
Observations	3894	3125	3536
Pseudo R-square	0.41	0.12	0.33

A detailed description of the variables can be found in table Appendix 1. All models are probit regressions. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2010).

The results for the regressions on the propensity for payout are reported in table 5.19. As can be seen, mainly real family firms have a higher propensity to pay dividends or engage in any payout. In terms of any payout, there is no significant difference between founder-controlled firms and non-family firms (although the coefficient is positive). Contrary, the effect of real family firms on dividend and any payout is strong, both from a statistical and economic point of view. Consequently, payout policy in family firms seems affected by

the firm's life cycle. This is consistent with the control retention rationale, which claims that family firms pay more dividends because of their desire for a steady income stream without a loss of control. As argued before, this desire for a steady income stream may be especially pronounced in later generation family firm, with possibly higher tensions within the family. The results for the level of payout are qualitatively similar as those for the payout propensity (cf. table Appendix 13).

5.3.5 Summary

To summarize, I find that family firms are more likely to pay out earnings to shareholders in the form of dividends. For share repurchases, no significant differences are found. In terms of the payout level, the results are weaker, but point in the same direction. Furthermore, family ownership seems to be the main reason behind this result. The "force" behind this result is the desire for control retention of the family firm. Dividends allow them to realize a steady income stream without loosing control over "their" firm. Hence, family firms adapt their payout policy due to higher agency conflict II, not lower agency conflict I. The fact that real family firms are more likely to pay dividends than founder-controlled and non-family firms supports this argumentation. The robustness tests indicate that this finding is robust against different concerns, including reverse causality.

5.4 Diversification decisions in family firms

The following sections deal with the question if and why family firms differ from their non-family counterparts in terms of diversification decisions. For this, both business segment and geographical diversification are analyzed. First, the question if there are differences is addressed. In a second step, the effects of family ownership and family management are analyzed. After that, a large battery of robustness tests is presented to demonstrate that the results are stable against several different concerns, e.g. endogeneity. In a last step, the question why these differences occur is raised.[35]

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[35]Please note that the following sections are partly based on Schmid et al. (2008).

5.4.1 Family firms versus non-family firms

In a first step, overall differences between family firms and their non-family counterparts in terms of total, related and unrelated business segment diversification are analyzed. Results are presented in table 5.20. While *hypothesis DIV-H1* and *hypothesis DIV-H2b* predict lower levels of diversification, *hypothesis DIV-H2a* states the opposite. Surprisingly and contrary to prior studies for the U.S. Anderson and Reeb (2003*b*) and Gomez-Mejia et al. (2010)), I find no differences between family firms and non-family firms in terms of total business segment diversification (models Ia to Ic). For related business segment diversification, no significant differences are found as well (models IIa to IIc). However, family firms are less likely to diversify in unrelated business segments (models IIIa to IIIc).

The rationale behind less unrelated diversification can be twofold: First, agency conflict I may be less pronounced in family firms (*hypothesis DIV-H1*), leading to less unrelated diversification. Second, the family's desire for control retention may prevent them from diversifying in unrelated segments (*hypothesis DIV-H2b*). However, the question which of those two potential explanations is true can not be answered with this test setting and will be addressed later.

The reasons for equal levels of total and related business segment diversification in family and non-family firms may be related to the different institutional environment of Germany, as compared to the U.S. Both prior studies, Anderson and Reeb (2003*b*) and Gomez-Mejia et al. (2010), focus on the U.S. and find that family firms are less likely to diversify. However, the U.S. capital market differs substantially from the German one in terms of investor protection and shareholder rights, which are much higher in the U.S.[36] In an institutional environment with a high level of shareholder rights, family firms might avoid raising new equity to finance diversifying investment to retain control over "their" firm (*hypothesis DIV-H2b*).[37] Contrary, new equity may become more attractive for family firms in an institutional environment with lower levels of shareholder rights. In this case, new equity is accompanied by less loss of control for the family.

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[36]La Porta et al. (1998) calculate an "anti-director" index of five for the U.S. and one for Germany.

[37]Another way to finance diversification is, of course, debt. The creditor rights index reported by La Porta et al. (1998) is one for the U.S. and three for Germany. However, there are reasons why family firms want to avoid debt, e.g. the increased bankruptcy risk (cf. Ampenberger et al. (2009)). Hence, the financing of diversification with debt is a less effective risk reduction strategy.

Table 5.20: Diversification: Family Firms (BSD)

Model	I a	I b	I c	II a	II b	II c	III a	III b	III c
	Total BSD			**Related BSD**			**Unrelated BSD**		
Family Firm	**-0.059**	**-0.084***	**-0.18**	**0.024**	**-0.0079**	**0.049**	**-0.083****	**-0.076****	**-0.26***
	(-1.23)	**(-1.83)**	**(-1.19)**	**(0.61)**	**(-0.24)**	**(0.30)**	**(-2.08)**	**(-2.05)**	**(-1.74)**
Outside Blockholders	-0.073	-0.12*	-0.34	0.043	0.044	0.022	-0.12**	-0.16***	-0.51**
	(-1.24)	(-1.79)	(-1.63)	(0.92)	(0.90)	(0.11)	(-2.21)	(-3.00)	(-2.57)
Firm Size [Ln]	0.058***	0.051***	0.091**	0.029***	0.020**	0.13***	0.029***	0.031***	0.068*
	(4.40)	(3.94)	(2.23)	(2.86)	(2.19)	(3.49)	(2.70)	(2.94)	(1.81)
Accounting Standard	-0.074*	-0.14**	-0.22	-0.024	-0.071	-0.013	-0.050	-0.069	-0.13
	(-1.67)	(-2.12)	(-1.58)	(-0.68)	(-1.51)	(-0.090)	(-1.40)	(-1.30)	(-1.03)
Tangible Assets Ratio	0.25**	0.22*	1.52***	0.19**	0.15*	0.88**	0.065	0.071	0.56
	(2.22)	(1.81)	(3.95)	(2.08)	(1.73)	(2.30)	(0.69)	(0.71)	(1.54)
Market Leverage	0.052	0.078	0.26	-0.063	-0.017	-0.14	0.12	0.095	0.48*
	(0.64)	(0.84)	(0.98)	(-0.97)	(-0.25)	(-0.49)	(1.64)	(1.25)	(1.80)
Payout Ratio	-0.014	0.020	-0.15	-0.0026	0.00013	-0.12	-0.012	0.020	-0.069
	(-0.31)	(0.25)	(-1.05)	(-0.084)	(0.0023)	(-0.87)	(-0.33)	(0.31)	(-0.52)
Profitability	-0.049	-0.065	-0.10	-0.084*	-0.11	-0.41*	0.035	0.046	0.031
	(-0.77)	(-0.60)	(-0.39)	(-1.67)	(-1.44)	(-1.66)	(0.69)	(0.52)	(0.11)
Market-to-Book	-0.00062*	-0.0017	-0.0023	-0.00018	0.00074	-0.00015	-0.00045	-0.0025	-0.0020
	(-1.70)	(-0.87)	(-1.38)	(-0.88)	(0.52)	(-0.098)	(-1.38)	(-1.53)	(-0.97)
Voting-Cashflow Wedge	-0.038	-0.043	-0.011	-0.024	0.017	-0.025	-0.014	-0.060	-0.11
	(-0.70)	(-0.71)	(-0.065)	(-0.55)	(0.39)	(-0.14)	(-0.32)	(-1.22)	(-0.66)
Firm Specific Risk [Ln]	-0.13	-0.15	-0.39	-0.070	-0.10	-0.79**	-0.064	-0.044	-0.043
	(-1.28)	(-0.85)	(-1.12)	(-0.99)	(-0.83)	(-2.06)	(-0.76)	(-0.31)	(-0.13)
Firm Age [Ln]	-0.010	-0.0027	0.00016	0.017	0.0019	0.054	-0.028	-0.0045	-0.046
	(-0.41)	(-0.11)	(0.0020)	(0.99)	(0.11)	(0.65)	(-1.24)	(-0.23)	(-0.60)
Observations	1832	1832	1832	1832	1832	1832	1832	1832	1832
Adj. / Pseudo R-squared	0.16	0.17	0.10	0.12	0.087	0.10	0.15	0.17	0.10
Model	OLS	BE	Probit	OLS	BE	Probit	OLS	BE	Probit

The dependent variable is models a and b is BSD and in model c BSD [DUMMY]. A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.

Source: Own work based on Schmid et al. (2008).

In the context of diversification decisions, this is of pronounced importance since diversification has both costs and benefits for the family. Consequently, they have to balance the benefits from diversification, i.e. risk reduction on the firm level, with its drawbacks, i.e. the decrease of control over "their" firm. Of course, the optimal balance for the family depends on the institutional environment and especially on the cost of new equity in terms of control loss.

This provides a (possible) explanation why German family firms show equal levels of diversification. While family firms in the U.S. diversify less, the optimal balance between risk aversion and control retention is different in the German environment, leading to equal levels of diversification in family and non-family firms. To further analyze what determines this optimal balance, I focus on the impact on family ownership and management in a next step.

5.4.2 Family ownership and management

In a second step, I analyze the impact of the two components that qualify a firm as a family firm: Family ownership and family management.[38] The results for family ownership and management are presented in table 5.21. Thereby I find that family ownership has a positive impact on the overall level of business segment diversification, while family management has the opposite effect (models Ia to Ic). Hence, firms with high family ownership are more likely to engage in diversification than non-family firms. In contrast, the active participation of the family in the firm's top-management has the opposite effect.

These results lead to a rejection of *hypothesis DIV-H1b*. The empirical evidence is against the hypothesis that family ownership leads to monitoring incentives which reduce agency conflict I and as a consequence the level of firm diversification. In contrast, high family ownership seems to lead to an increase of the family's risk aversion. Hence, *hypothesis DIV-H2a* has to be accepted since risk aversion is the predominant "force" in highly family owned firms. Furthermore, the participation of the family in the firm's top-management decreases firm diversification. However, the rationale behind lower diversification in family

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[38] Please note that family management, i.e. the presence of the family in either the management or supervisory board, without family ownership is an extremely rare situation. In contrast, family management is nearly always accompanied by family ownership.

owned and managed firms is not unambiguous: Both higher interest alignment (*hypothesis DIV-H1a*) or the family's desire for control retention (*hypothesis DIV-H2b*) may cause this result. If I split up overall business segment diversification into related and unrelated diversification, I find that family ownership increases the level of related diversification (models IIa to IIc). In contrast, family management reduces the level or unrelated diversification (models IIIa to IIIc).

If the higher agency conflict II and hence the extraction of private benefits of control is the "force" behind diversification decisions in family firms, families have to balance the costs, i.e. control loss and benefits, i.e. risk reduction, from diversification. Beneath the country's institutional environment, family firm characteristics are expected to influence the optimal balance. While high family ownership is expected to increase risk aversion, family management might might raise the relative importance of control retention. If diversification increases, their control over the firm is likely to decrease (either due to new equity or external human capital). However, the "costs" for the family in terms of loss of control are smaller with diversification in related business segments since this form of diversification is less expensive and less new expertise knowledge in the form of human capital is needed. The results support this view: First, family ownership (slightly) increases related business segment diversification, compared to non-family firms (models IIa to IIc). Second, family managed firms are less likely to diversify in unrelated business segments (models IIIa to IIIc).

To summarize, the "force" behind diversification decisions in family owned firms is risk aversion (*hypothesis DIV-H2a*). Thereby, the diversification takes mainly place in related business segments. In contrast, firms that are both family managed and owned are less diversified than their non-family counterparts, mainly driven by less unrelated diversification. However, the rationale for this is not unambiguous: Either interest alignment is higher in these firms (*hypothesis DIV-H1a*), or the family's desire for control retention leads to less diversification (*hypothesis DIV-H2b*). In the latter case, family management enhances the influence of the family on the corporate policy decisions of the firm, increasing their possibilities to extract private benefits. Section 6.1.2 introduces an empirical test setting that enables me to distinguish between these two possible explanations for lower diversification in family owned and managed firms.

Table 5.21: Diversification: Family Ownership and Management 1/2 (BSD)

Model	I a	I b	I c	II a	II b	II c	III a	III b	III c
	Total BSD			**Related BSD**			**Unrelated BSD**		
Family Ownership	0.19**	0.20**	0.81**	0.17**	0.18**	0.54*	0.016	0.022	0.24
	(2.22)	(2.02)	(2.49)	(2.03)	(2.53)	(1.69)	(0.23)	(0.28)	(0.79)
Family Management	-0.15***	-0.16***	-0.50***	-0.044	-0.066*	-0.12	-0.10**	-0.094**	-0.35**
	(-3.02)	(-3.03)	(-2.98)	(-1.07)	(-1.75)	(-0.63)	(-2.44)	(-2.18)	(-2.07)
Outside Blockholders	-0.063	-0.10	-0.26	0.059	0.066	0.100	-0.12**	-0.17***	-0.48**
	(-1.03)	(-1.45)	(-1.20)	(1.26)	(1.35)	(0.49)	(-2.21)	(-2.96)	(-2.36)
Firm Size [Ln]	0.055***	0.048***	0.082**	0.028***	0.019**	0.13***	0.027**	0.029***	0.062*
	(4.15)	(3.72)	(2.00)	(2.72)	(2.05)	(3.39)	(2.55)	(2.77)	(1.65)
Accounting Standard	-0.082*	-0.15**	-0.25*	-0.030	-0.077*	-0.033	-0.052	-0.073	-0.15
	(-1.84)	(-2.28)	(-1.76)	(-0.84)	(-1.65)	(-0.23)	(-1.46)	(-1.36)	(-1.13)
Tangible Assets Ratio	0.25**	0.21*	1.51***	0.18**	0.14	0.85**	0.066	0.068	0.56
	(2.17)	(1.71)	(3.85)	(1.99)	(1.62)	(2.18)	(0.71)	(0.69)	(1.52)
Market Leverage	0.047	0.072	0.24	-0.068	-0.020	-0.15	0.11	0.092	0.48*
	(0.58)	(0.78)	(0.88)	(-1.04)	(-0.30)	(-0.51)	(1.63)	(1.22)	(1.77)
Payout Ratio	-0.026	0.0031	-0.21	-0.013	-0.015	-0.15	-0.013	0.018	-0.086
	(-0.57)	(0.038)	(-1.46)	(-0.41)	(-0.25)	(-1.08)	(-0.37)	(0.27)	(-0.65)
Profitability	-0.065	-0.096	-0.16	-0.096*	-0.14*	-0.45*	0.031	0.040	0.0067
	(-1.01)	(-0.89)	(-0.61)	(-1.90)	(-1.76)	(-1.77)	(0.61)	(0.45)	(0.025)
Market-to-Book	-0.00057	-0.0016	-0.0022	-0.00014	0.00083	-0.00010	-0.00043	-0.0024	-0.0019
	(-1.64)	(-0.79)	(-1.36)	(-0.69)	(0.58)	(-0.064)	(-1.35)	(-1.48)	(-0.95)
Voting-Cashflow Wedge	-0.054	-0.061	-0.068	-0.035	0.0052	-0.061	-0.020	-0.066	-0.14
	(-1.02)	(-1.00)	(-0.40)	(-0.79)	(0.12)	(-0.35)	(-0.47)	(-1.33)	(-0.86)
Firm Specific Risk [Ln]	-0.14	-0.16	-0.44	-0.075	-0.11	-0.82**	-0.067	-0.049	-0.066
	(-1.35)	(-0.93)	(-1.26)	(-1.08)	(-0.91)	(-2.13)	(-0.78)	(-0.34)	(-0.20)
Firm Age [Ln]	-0.012	-0.00021	-0.017	0.015	0.0027	0.052	-0.027	-0.0029	-0.045
	(-0.49)	(-0.0088)	(-0.21)	(0.89)	(0.16)	(0.64)	(-1.25)	(-0.15)	(-0.59)
Observations	1832	1832	1832	1832	1832	1832	1832	1832	1832
Adj. / Pseudo R-squared	0.17	0.18	0.12	0.13	0.099	0.11	0.15	0.17	0.10
Model	OLS	BE	Probit	OLS	BE	Probit	OLS	BE	Probit

The dependent variable is models a and b is BSD and in model c BSD [DUMMY]. A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.

Source: Own work based on Schmid et al. (2008).

5.4.3 Family owned versus family managed firms

The analysis in the last section distinguished between family ownership and management. To analyze the effects of family ownership and family management in combination with family ownership more precisely, I go one step further and define different family firm types. In many cases, family ownership and family management occur at the same time. However, there are also family firms in the dataset that are *mainly owned* by the family (without a strong management board participation of the family) and others that are *mainly managed* by the family (without large family ownership).[39] I use this heterogeneity in terms of family characteristics for this alternative test of the effects of family management and ownership. All family firms are assigned to one of the following three family firm groups:

FAMILY MANAGED: Family firms that are highly family-managed. A family firm is assigned to this group if at least half of the members of the firm's management board are members of the family, while the family ownership is below 20%.

FAMILY OWNED: Family firms that are highly family-owned. A family firm is assigned to this group if the family ownership is at least 50%, but the family is represented in the firm's management board with a fraction smaller than 20%.

FAMILY OWNED/MANAGED: Family firms that have similar levels of family ownership and family management. All family firms which are neither classified as family managed nor family owned are assigned to this group.

Of course, the perfect test would be to compare firms which have only family ownership with firms which have only family management. However, these extreme cases are very rare in the sample, especially family management without family ownership. Hence, I decided to define these three types of family firms. Dummy variables for each type of family firm are created and analyzed with respect to overall, related and unrelated diversification.[40]

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[39]As mentioned before, there are nearly no cases of firms with family management, i.e. family participation in the firm's management or supervisory board, but no family ownership. However, there are cases of firms which are "mainly" managed by the family.

[40]For this additional test, I only report estimated based on pooled-OLS regressions.

Table 5.22: Diversification: Family Ownership and Management 2/2 (BSD)

Model	Ia	Ib	Ic
	Total BSD	Related BSD	Unrelated BSD
Family Managed	**-0.14***	**-0.048**	**-0.093**
	(-1.86)	**(-1.05)**	**(-1.63)**
Family Owned	**0.086**	**0.16****	**-0.072**
	(1.33)	**(2.15)**	**(-1.29)**
Family Owned/Managed	**-0.10****	**-0.017**	**-0.086****
	(-2.18)	**(-0.48)**	**(-2.07)**
Outside Blockholders	-0.065	0.050	-0.12**
	(-1.11)	(1.10)	(-2.19)
Firm Size [Ln]	0.056***	0.027***	0.029***
	(4.23)	(2.68)	(2.66)
Accounting Standard	-0.076*	-0.026	-0.050
	(-1.74)	(-0.74)	(-1.40)
Tangible Assets Ratio	0.25**	0.18**	0.064
	(2.19)	(2.03)	(0.68)
Market Leverage	0.045	-0.070	0.11
	(0.55)	(-1.11)	(1.63)
Payout Ratio	-0.019	-0.0069	-0.012
	(-0.42)	(-0.23)	(-0.34)
Profitability	-0.068	-0.10*	0.033
	(-1.03)	(-1.96)	(0.64)
Market-to-Book	-0.00061*	-0.00017	-0.00044
	(-1.68)	(-0.78)	(-1.37)
Voting-Cashflow Wedge	-0.046	-0.032	-0.014
	(-0.87)	(-0.74)	(-0.33)
Firm Specific Risk [Ln]	-0.15	-0.083	-0.065
	(-1.40)	(-1.16)	(-0.77)
Firm Age [Ln]	-0.015	0.013	-0.028
	(-0.58)	(0.78)	(-1.25)
Observations	1832	1832	1832
Adj. R-squared	0.17	0.14	0.15

A detailed description of the variables can be found in table Appendix 1. All models are pooled-OLS regressions. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2008).

The results for this analysis are reported in table 5.22, models Ia to Ic. If the prior results hold true under this alternative test setting, I expect that type I and type III family firms have lower levels of overall and unrelated diversification relative to non-family firms while the type II family firms exhibit higher levels of total and related diversification. Indeed,

both family managed and family owned/managed family firms exhibit lower levels of unrelated and overall diversification relative to non-family firms (and similar levels of related diversification). By contrast, family owned family firms show higher levels of related diversification relative to non-family firms, but no statistically significant differences in terms of overall diversification (although the coefficient is - as expected - positive). Firms that have family management in combination with (at least some) family ownership are less likely to diversify. In contrast, firms without significant family management are more likely to diversify, especially in related business segments.

5.4.4 Geographical diversification

Finally, I analyze the level of geographical diversification in family firms. In this context, no significant differences between family and non-family firms are identified (cf. table Appendix 14 for the results). Neither family ownership nor family management have a significant impact on the level of geographical diversification. Finally, I analyze founder-controlled and real family firms[41] to investigate if these firms exhibit any differences compared to non-family firms in terms of geographical diversification. I find that the coefficient for founder-controlled firms is negative and weakly significant in two out of three models (models IIIb and IIIc). Hence, it seems that founder-controlled firms exhibit lower levels of geographical diversification relative to non-family firms while real family firms do not. Overall, these results suggest that geographical diversification is rather driven by market forces, i.e. firm growth, and the firm's life cycle than by family firm characteristics. However, I have to acknowledge that one limitation of the analysis is that I can measure the geographical regions just in a very broad sense with regard to the reporting in the Thomson Worldscope database as already described in the section 4.3.3.

5.4.5 Robustness tests

The following section describes robustness tests for the prior results. If not noted otherwise, all tests were conducted for the entropy index of total business segment diversification using pooled-OLS regression. Since I do not find significant differences between family and

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[41]Cf. sections 2.1.2 and 4.1.2 for a detailed description of the two concepts.

non-family firms regarding overall business segment diversification, the focus lies on the effects of family ownership and management. In addition, I perform no robustness tests for geographical diversification as the main analysis indicates that there are neither differences between family firms and non-family firms nor notable effects of family management or ownership. Results are reported in tables 5.23 to 5.26.

Alternative measures of diversification

The results for family ownership and management are robust to the following different measures of business segment diversification:

The share of sales generated **outside** the firm's main business segment. Thereby, the firm's main business segment is classified by the 4-digit SIC code segment with the highest sales.

The **number** of business segments (based on 2-digit and 4-digit SIC codes).

The **Herfindahl index** for sales based on the 4-digit and 2-digit SIC codes. For reasons of easier interpretation, 1-Herfindahl index is used as the measure of diversification. Thus, the measure increases with the diversification level.

Results for the effects of family ownership and family management are reported in table 5.23. I find that family management has a strong negative influence on all alternative measures of corporate diversification. By contrast, family ownership shows a positive correlation with the sales outside the main business segment, the number of 4-digit SIC codes and the Herfindahl index for 4-digit SIC codes, but no significant correlation with the measures based on 2-digit SIC codes. Since the Herfindahl index for 4-digit (2-digit) SIC codes can be interpreted as an alternative measure for total (unrelated) diversification, this result is also consistent with the main body of this analysis. Overall, the results suggest that the effect of family management on diversification decisions is strong and negative. If members of the family are present in the firm's management or supervisory board, the family firm is less likely to diversify. The effect of family ownership points in the opposite direction and is present for overall diversification, but not for unrelated diversification.

Table 5.23: Diversification: Robustness Tests 1: Alternative Diversification Measures

Model	I a	I b	I c	I d	I e
	Main Segment Outside Sales	Number Segments		Herfindahl	
		4-digit	2-digit	4-digit	2-digit
Family Ownership	**0.099****	**0.39***	**0.0057**	**0.12****	**0.015**
	(2.25)	**(1.93)**	**(0.038)**	**(2.40)**	**(0.35)**
Family Management	**-0.081****	**-0.29****	**-0.20****	**-0.097****	**-0.069****
	(-3.20)	**(-2.50)**	**(-2.23)**	**(-3.29)**	**(-2.54)**
Outside Blockholders	-0.027	-0.21	-0.34**	-0.043	-0.077**
	(-0.89)	(-1.31)	(-2.59)	(-1.21)	(-2.28)
Firm Size [Ln]	0.021***	0.17***	0.084***	0.027***	0.015**
	(3.35)	(4.63)	(3.02)	(3.70)	(2.32)
Accounting Standard	-0.042**	-0.14	-0.085	-0.047*	-0.030
	(-2.01)	(-1.11)	(-1.02)	(-1.89)	(-1.35)
Tangible Assets Ratio	0.11**	0.68**	0.22	0.15**	0.040
	(1.97)	(2.35)	(0.96)	(2.20)	(0.69)
Market Leverage	0.0011	0.22	0.34*	0.020	0.063
	(0.027)	(0.98)	(1.96)	(0.42)	(1.47)
Payout Ratio	-0.016	-0.029	-0.025	-0.022	-0.0100
	(-0.68)	(-0.26)	(-0.33)	(-0.83)	(-0.45)
Profitability	-0.024	-0.23	-0.016	-0.030	0.029
	(-0.76)	(-1.46)	(-0.14)	(-0.77)	(0.93)
Market-to-Book	-0.00030**	-0.0013	-0.00091	-0.00034*	-0.00028
	(-2.11)	(-1.17)	(-0.99)	(-1.84)	(-1.52)
Voting-Cashflow Wedge	-0.021	-0.16	-0.062	-0.032	-0.017
	(-0.78)	(-1.10)	(-0.61)	(-1.02)	(-0.65)
Firm Specific Risk [Ln]	-0.059	-0.23	-0.039	-0.083	-0.040
	(-1.13)	(-0.92)	(-0.19)	(-1.32)	(-0.74)
Firm Age [Ln]	-0.0047	-0.032	-0.048	-0.0051	-0.016
	(-0.39)	(-0.46)	(-0.83)	(-0.37)	(-1.27)
Observations	1832	1832	1832	1832	1832
Adj. R-squared	0.14	0.20	0.18	0.15	0.15

A detailed description of the variables can be found in table Appendix 1. All models are pooled-OLS regressions. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2008).

Non-linear size effects

The effect of firm size on the level of diversification is positive and consistent over all models. Larger firms exhibit higher levels of diversification. To account for possible non-

linearities of firm size, the following tests are conducted: First, I add a quadratic size term to the regression model (results are not reported) and second, I divide the whole sample in two sub-samples for large and small firms. I use the median value of the natural logarithm of employees to divide the sample. The dependent variable in these three models is the entropy measure for overall diversification. In a first step, I acknowledge that the inclusion of a quadratic term has no effect on the results (not reported). The second test shows that family ownership and family management have opposing effects in the sample of small firms. While the coefficient for family ownership is positive and statistically significant at the 1%-level the coefficient for family management is negative and as well statistically different from zero at the 5%-level (cf. table 5.24, model Ia). However, in the sub-sample of large firms I can only observe a statistically significant effect for family management at the 10%-level. Regarding family ownership there is no significant effect although the coefficient remains still positive (model Ib). This result might in part be driven by the fact that family ownership and family management are much more prevalent among small firms if compared to large firms. Hence, the main variables of interest exhibit a much larger variation in the sub-sample of the small firms than in the sub-sample of the large firms. Overall, the robustness test shows that firm size is an important factor for diversification decisions and the results are not as strong for large firms as they are for small firms.

Sampling procedure and lagged variables

One concern with the sampling procedure is that the required time period without transition of four years is - to some extend - arbitrary. To alleviate these concerns I have created alternative samples using time periods of two and six years instead of four years. As the results in table 5.24 (models IIa and IIb) indicate, I find similar effects for family ownership and family management in both alternative specification. Another concern is that past firm characteristics influence today's corporate policy. However, if I use lagged variables instead of contemporaneous regressors (model III), I obtain similar results in terms of magnitude and statistical significance.[42]

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[42]In this context, concerns regarding the family firm variable are lower since the sampling procedure requires that the firm is either a family or a non-family firm since at least four consecutive years.

Table 5.24: Diversification: Robustness Tests 2: Non-Linear and Sample Composition Effects

Model	I a	I b	II a	II b	III
	Non-linear size effects		Sampling procedure		1-year lag
	Small firms	Large firms	2-year	6-year	All variables
Family Ownership	**0.25*****	**0.19**	**0.13***	**0.16**	**0.18****
	(2.61)	**(1.30)**	**(1.81)**	**(1.60)**	**(2.06)**
Family Management	**-0.14****	**-0.14***	**-0.14*****	**-0.13****	**-0.15*****
	(-2.40)	**(-1.70)**	**(-3.47)**	**(-2.31)**	**(-2.82)**
Outside Blockholders	-0.013	-0.079	-0.071	-0.023	-0.054
	(-0.17)	(-0.90)	(-1.27)	(-0.31)	(-0.83)
Firm Size [Ln]	0.040*	0.051***	0.060***	0.062***	0.049***
	(1.77)	(2.83)	(5.33)	(3.67)	(3.35)
Accounting Standard	-0.11**	-0.063	-0.057	-0.050	-0.082*
	(-2.04)	(-0.97)	(-1.57)	(-0.87)	(-1.66)
Tangible Assets Ratio	-0.079	0.46***	0.14	0.33**	0.30**
	(-0.56)	(2.85)	(1.38)	(2.38)	(2.37)
Market Leverage	-0.012	0.12	0.015	-0.028	0.035
	(-0.12)	(0.99)	(0.91)	(-0.27)	(0.40)
Payout Ratio	-0.041	-0.0051	-0.017	-0.0093	0.0060
	(-0.74)	(-0.076)	(-0.46)	(-0.15)	(0.12)
Profitability	-0.0050	-0.088	-0.014	-0.11	-0.021
	(-0.058)	(-1.00)	(-1.56)	(-0.95)	(-0.35)
Market-to-Book	-0.00040	-0.000055	-0.00062***	-0.00053	-0.00062*
	(-0.73)	(-0.11)	(-3.14)	(-1.08)	(-1.87)
Voting-Cashflow Wedge	0.10	-0.11*	-0.060	-0.049	-0.055
	(1.25)	(-1.66)	(-1.20)	(-0.74)	(-0.96)
Firm Specific Risk [Ln]	-0.0098	-0.32**	-0.072	-0.11	-0.19*
	(-0.080)	(-1.98)	(-0.81)	(-0.80)	(-1.90)
Firm Age [Ln]	0.015	-0.022	-0.0018	-0.046	-0.022
	(0.55)	(-0.55)	(-0.091)	(-1.32)	(-0.80)
Observations	905	927	2707	1083	1463
Adj. R-squared	0.10	0.16	0.16	0.15	0.17

The dependent variable is TOTAL BSD. A detailed description of the variables can be found in table Appendix 1. All models are pooled-OLS regressions. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2008).

Other blockholders

In the main body of the analysis, I measure the influence of other, large shareholders rather broad by including the cumulated ownership fraction of all outside shareholders with

voting rights of at least 5% in the regressions In this robustness test I distinguish between financial, government, individual and strategic blockholders. Section 4.1.2 describes the construction of these variables. Results are reported in table 5.25, model I. However, no particular shareholder type except of government entities has a significant influence on the overall firm diversification. By contrast, the influence of family ownership and family management remains strong in this model. Hence, the results are robust against a more detailed analysis of different blockholder types.

Furthermore, the concepts of family ownership and insider ownership have considerable interference (cf. figure 2.1). Hence, one natural concern with my analysis is that I describe an insider ownership effect rather than an effect related to family firm characteristics. To alleviate these concerns, I perform the following robustness tests: In table 5.25, model IIa, I control for the level of insider ownership. In model IIb and IIc, I only include firms (both family and non-family firms) with insider ownership levels of at least 5% and 15%, respectively. The German capital market offers an ideal institutional setting to test these effects, as there are 87 (67) non-family firms with insider ownership of at least 5% (15%). The robustness tests indicate that the effects of family ownership and family management are persistent across all three models. In model IIa, the level of insider ownership has a negative coefficient that is statistically significant at the 10%-level, consistent with prior results for insider ownership and diversification found by Denis et al. (1997). Overall, these robustness tests indicate that the prior results are robust and effects stem from the unique characteristics of family firms rather than from insider ownership.

Table 5.25: Diversification: Robustness Tests 3: Blockholders

Model	I	IIa	IIb	IIc
	Blockholder identity	IO as control	IO > 5%	IO > 15%
Family Ownership	**0.18****	**0.27*****	**0.20****	**0.19***
	(2.24)	**(2.95)**	**(2.20)**	**(1.93)**
Family Management	**-0.13*****	**-0.15*****	**-0.13****	**-0.14****
	(-2.73)	**(-3.05)**	**(-2.16)**	**(-2.01)**
Government Blockholder	**0.21***			
	(1.95)			
Financial Blockholder	**-0.0050**			
	(-0.091)			
Private Blockholder	**-0.051**			
	(-1.14)			
Strategic Blockholder	**0.048**			
	(0.53)			
Insider Ownership		**-0.19***		
		(-1.89)		
Outside Blockholders		-0.14*	0.11	0.17
		(-1.87)	(0.92)	(0.98)
Firm Size [Ln]	0.051***	0.051***	0.044***	0.034*
	(3.77)	(3.87)	(2.65)	(1.81)
Accounting Standard	-0.087*	-0.071	-0.090	-0.11*
	(-1.96)	(-1.61)	(-1.56)	(-1.83)
Tangible Assets Ratio	0.23**	0.26**	0.13	0.21
	(2.04)	(2.24)	(0.95)	(1.37)
Market Leverage	0.042	0.051	0.059	0.060
	(0.52)	(0.63)	(0.60)	(0.56)
Payout Ratio	-0.028	-0.026	0.026	0.032
	(-0.63)	(-0.58)	(0.41)	(0.46)
Profitability	-0.064	-0.053	-0.063	-0.047
	(-0.99)	(-0.82)	(-0.89)	(-0.48)
Market-to-Book	-0.00058*	-0.00062*	-0.00090***	-0.00077***
	(-1.66)	(-1.83)	(-2.77)	(-3.34)
Voting-Cashflow Wedge	-0.052	-0.048	-0.055	-0.027
	(-0.93)	(-0.91)	(-0.85)	(-0.41)
Firm Specific Risk [Ln]	-0.13	-0.14	-0.15	-0.14
	(-1.22)	(-1.34)	(-1.10)	(-1.02)
Firm Age [Ln]	-0.0073	-0.0065	-0.026	-0.035
	(-0.29)	(-0.26)	(-0.75)	(-0.95)
Observations	1832	1832	1019	893
Adj. R-squared	0.18	0.18	0.12	0.1

The dependent variable is TOTAL BSD. A detailed description of the variables can be found in table Appendix 1. IO stands for Insider Ownership. All models are pooled-OLS regressions. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2008).

The life-cycle of the firm

One potential bias of this study is that family firms are - on average - much younger than non-family firms (cf. section 5.1.1). To account for this possible problem, I analyze real family firms and founder-controlled firms (cf. sections 2.1.2 and 4.1.2 for a detailed description). The results are presented in table Appendix 15. For total and related business segment diversification, I do not find significant differences between founder-controlled, real family firms and non-family firms. However, real family firms have lower levels of unrelated diversification relative to non-family firms, while founder-controlled firms have no differences. This is a strong indication that family firm characteristics rather than life-cycle effects influence the firm's decision to diversify in unrelated business fields.

Endogeneity

Several studies argue that governance structures are endogenously determined (Demsetz and Lehn (1985), Himmelberg et al. (1999), Demsetz and Villalonga (2001), Adams et al. (2009)). In this case, one potential source for endogeneity is that there may be a unobserved factor that simultaneously influences both the firm's governance structure and the diversification level. Consider a family firm that issues new equity in order to finance a diversifying acquisition. If the (capital-constrained) family is not able to fully participate in the seasoned equity offering, the ownership stake of the family will be diluted while at the same time the diversification level of the family business increases. If the dilution of the ownership stake is particularly strong, the firm may also change its status from a family firm to a non-family firm.[43] One potential solution to alleviate concerns of endogeneity is to use an instrumental variable approach, which is described in detail in section 4.4.2. Since the sample criteria differ for my analysis of diversification decisions[44], the correlation between the family firm dummy and the mean fraction of family firms in a particular industry is 37% in this context.

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[43]However, my analysis indicates the opposite. Especially firms that are highly family owned have more diversification than their non-family counterparts.

[44]Section 4.3.3 describes the sample criteria for the analysis of diversification decisions. In particular, I require a four year "tracking period".

Since I did not find any convincing results for differences between family firms and non-family firms in terms of overall and related diversification, I first focus on unrelated diversification.[45] In the first-stage regression, I examine the determinants of a firm being a family business or not using all of the control variables except the mean diversification level in an industry and the instrument (the mean fraction of family firms in a particular industry) as independent variables in a probit regression (results not reported). Afterwards, I perform the second stage regressions to analyze whether family firms show different levels of unrelated diversification. Second-stage results are reported in table 5.26, model I). I find that using the treatment effects models the results for family firms (in particular their lower level of unrelated diversification) do hold.

Furthermore, I argue that not only family firms as a whole are not randomly assigned to industries. Even family owned/managed firms show clustering in specific industries. Consequently, I apply the same procedure as for family firms and instrument these variables with the mean fraction of the specific industry. The results reported in models IIa and IIb support the prior results: Family owned/managed firms exhibit lower levels of overall and unrelated business segment diversification.

Overall, these results from the treatment effects models help to alleviate concerns that the results are driven by endogeneity of corporate governance structures.

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[45]The prior robustness tests were performed for overall business segment diversification with family ownership and family management as independent variables. However, no suitable instruments are available for these variables.

Table 5.26: Diversification: Robustness Tests 4: Instrumental Variable Approach

Model	I	IIa	IIb
	Unrelated BSD	Total BSD	Unrelated BSD
Family Firm	**-0.28****		
	(-2.19)		
Family Owned/Managed		**-0.54****	**-0.30*****
		(-2.38)	**(-2.59)**
Control Variables		*Results not reported*	
Observations	1798	1798	1798

A detailed description of the variables can be found in table Appendix 1. All models are second-stage results of a treatment-effects regression with instrumented family firm variables. The same control variables as in the prior regressions are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2008).

5.4.6 The "force" behind diversification decisions in family firms

Now, I move to the question what determines diversification decisions in family firm. As argued before, family firms that are mainly family owned are more diversified than non-family firms. The rationale behind that is the risk aversion of the family shareholders (*hypothesis DIV-H2a*). Table 5.27 provides another test to investigate diversification decision in highly family owned firms. For this, I compare family owned firms with the universe of all other firms, without controlling for the other types of family firms (family managed and family owned/managed firms). As can be seen, the results support the prior interpretation: Family owned firms are more diversified than the - of course heterogeneous - universe of other firms.

Table 5.27: Diversification: Risk Aversion

Model	Ia	Ib	Ic
	Total BSD	Related BSD	Unrelated BSD
Family Owned	**0.13****	**0.17****	**-0.033**
	(2.40)	**(2.46)**	**(-0.68)**
Outside Blockholders	-0.023	0.057	-0.080*
	(-0.41)	(1.38)	(-1.65)
Firm Size [Ln]	0.060***	0.028***	0.032***
	(4.50)	(2.78)	(2.93)
Accounting Standard	-0.074*	-0.025	-0.049
	(-1.69)	(-0.73)	(-1.36)
Tangible Assets Ration	0.23**	0.18**	0.053
	(2.06)	(2.03)	(0.55)
Market Leverage	0.064	-0.066	0.13*
	(0.79)	(-1.06)	(1.82)
Payout Ratio	-0.019	-0.0070	-0.012
	(-0.41)	(-0.23)	(-0.33)
Profitatbility	-0.059	-0.096*	0.037
	(-0.91)	(-1.86)	(0.73)
Market-to-Book	-0.00064*	-0.00019	-0.00046
	(-1.68)	(-0.89)	(-1.32)
Voting-Cashflow Wedge	-0.054	-0.033	-0.021
	(-1.03)	(-0.78)	(-0.48)
Firm Specific Risk [Ln]	-0.15	-0.082	-0.070
	(-1.44)	(-1.16)	(-0.82)
Firm Age [Ln]	-0.0026	0.016	-0.019
	(-0.11)	(0.97)	(-0.85)
Observations	1832	1832	1832

A detailed description of the variables can be found in table Appendix 1.
BSD stands for Business Segment Diversification. All models are pooled-
OLS regressions. Time and industry dummies and a constant are included.
The calculation of the standard errors and the regression methods are ex-
plained in section 4.4.1. T-statistics are presented in parentheses. ***, **
and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2008).

However, the interpretation of lower diversification in family managed and family owned
and managed firm as well as for the lower unrelated diversification in family firms according
to the main definition is not straightforward. Both lower agency conflict I, i.e. more
interest alignment (*hypothesis DIV-H1a*), and higher agency conflict II, i.e. the desire for
control retention of the family (*hypothesis DIV-H2b*), can explain this results.

To shed light on the question, I analyze diversification decisions of family firms in different
institutional environments. For this purpose, I use ownership data provided by Claessens

et al. (2000) and Faccio and Lang (2002). These data cover nine East Asian and 12 Western European countries, for which I obtain accounting and diversification information via *Thomson Worldscope* for the years 1998 to 2002. I define family firms as those firms with at least 20% family ownership and management representation of the family. Since Claessens et al. (2000) and Faccio and Lang (2002) do not distinguish between family and founding family ownership, this definition differs from the one used in the analysis of German corporations. However, by defining only those firms as family firms which have both family ownership and management, the difference should be small since family representation is characteristic for founders and their families. To measure the level of shareholder and creditor right protection, I use the La Porta et al. (1998) CREDITOR and SHAREHOLDER RIGHTS index.[46]

The results, presented in table 5.28, show that family firms are in general not more or less diversified than their non-family counterparts. This holds true for total, related and unrelated business segment diversification. However, if I include an interaction term of the family firm status and the country's shareholder rights index, I find that family firms are in general more diversified in terms of total and related business segment diversification. If shareholder are high, this effect is inverted. In countries with high shareholder protection, i.e. expensive equity in terms of loss of control, family firms are less likely to diversify. This holds true for total and related diversification. These results support the control retention rationale (*hypothesis DIV-H2b*)and are against the interest alignment explanation (*hypothesis DIV-H1a*). As argued before, firms need capital to finance diversification. If this capital leads to a high loss of control, family firms avoid new capital and do not diversify as much as their non-family counterparts. If interest alignment were the rationale behind diversification decisions, there is no reason why the level of shareholder protection should have an effect in this context. This interpretation might also explain why I find similar levels of total diversification in German family firms, compared to the universe of non-family firms, while Anderson and Reeb (2003*b*) and Gomez-Mejia et al. (2010) find the opposite for U.S. family firms. While new equity is rather "cheap" in terms of loss of control in Germany, it is very "expensive" in the U.S. Hence, family firms in

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[46]Unfortunately, I am not able to include all control variables in this specification, e.g. outside blockholders or firm age. Furthermore, ownership information is static over time. Hence, I apply only between-firm effects regressions.

Table 5.28: Diversification: International Evidence

Model	I a	I b	II a	II b	III a	III b
	Total BSD		Related BSD		Unrelated BSD	
Family Firm 2	**0.018**	**0.12****	**0.012**	**0.10*****	**0.0065**	**0.016**
	(0.92)	**(2.01)**	**(0.96)**	**(2.82)**	**(0.37)**	**(0.30)**
SR* Family Firm 2		**-0.028***		**-0.026*****		**-0.0026**
		(-1.81)		**(-2.65)**		**(-0.19)**
Sharholder Rights (SR)		0.016		-0.0094		0.026*
		(0.99)		(-0.92)		(1.75)
Dividend Payout	0.00036	0.00035	0.00021	0.00020	0.00015	0.00015
	(1.04)	(1.02)	(0.97)	(0.94)	(0.50)	(0.50)
Market Leverage	0.21***	0.21***	0.017	0.017	0.19***	0.19***
	(5.40)	(5.42)	(0.70)	(0.72)	(5.59)	(5.59)
Tangible Assets Ratio	-0.075***	-0.076***	-0.038***	-0.038***	-0.038**	-0.038**
	(-3.86)	(-3.88)	(-3.13)	(-3.17)	(-2.16)	(-2.17)
Firm Size [Ln]	0.071***	0.070***	0.022***	0.022***	0.048***	0.048***
	(15.6)	(15.5)	(8.03)	(7.85)	(12.0)	(12.0)
Profitability	-0.0070	0.00087	-0.019	-0.012	0.012	0.013
	(-0.097)	(0.012)	(-0.42)	(-0.26)	(0.19)	(0.20)
Market-to-Book [Ln]	0.024	0.024	0.014	0.014	0.010	0.0100
	(1.54)	(1.50)	(1.46)	(1.40)	(0.72)	(0.71)
Stock Volatility	-0.027**	-0.028**	-0.0043	-0.0051	-0.023**	-0.023**
	(-2.20)	(-2.27)	(-0.56)	(-0.67)	(-2.09)	(-2.09)
Observations	8676	8676	8676	8676	8676	8676

A detailed description of the variables can be found in table Appendix 1. All models are between-firm effects panel models. Time, industry and country dummies and a constant are included. BSD stands for Business Segment Diversification. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2008).

the U.S. avoid new equity and diversify less. Surprisingly, I find no differences in terms of unrelated diversification for the international dataset.

To summarize, family firms have to balance their desires for risk reduction on the firm-level against control retention. The diversification decision in family firms depends on two factors: First, the level of family ownership is of importance. If family ownership is very high, their desire for risk reduction is increased, leading to more diversification. Second, the level of shareholder protection plays an important role. If shareholder protection is high, family firms are more likely to avoid costly diversification, at the cost of an increased risk exposure of their equity and human capital.

Hence, higher agency conflict II seems to be the rationale for diversification decisions in family firms. Thus, *hypothesis DIV-H2* is accepted. However, the private benefit is either control retention or risk aversion, depending on the level of family ownership and on the loss of control accompanied by new equity. In highly family owned firms, the "force" behind diversification decisions in family firms is risk aversion. Consequently, *hypothesis DIV-H2a* has to be accepted for these firms. Contrary, control retention is the explanation for lower diversification levels of family managed and family managed and owned firms. Hence, (*hypothesis DIV-H2b*) is accepted for these firms. These results support the view that family firms are very heterogeneous, as already argued by Villalonga and Amit (2006) or Miller et al. (2007). My empirical analysis of diversification decisions reveals that the private benefit for the family depends on the specific family firm type (i.e. the level of ownership and participation in the firm's top-management).

5.4.7 Summary

In a first step, no differences between family firms and non-family firms in terms of total and related business segment diversification as well as for geographical diversification are found. However, family firms are more resistant to diversify in unrelated fields of business. In a second step, I show that the diversification decisions of family firms depend on their level of family ownership. Regarding the level of total diversification, I find that family ownership has a positive while family management has a negative impact. Firms that have high family ownership but low management participation are more likely to diversify. The opposite is true for firms with high family representation in the top-management, but low ownership.

The results support the view that not lower agency conflict I, but higher agency conflict II in family firms determines their diversification decisions. While highly family owned firms are more likely to diversify due to the family's risk aversion as a private benefit of control, family managed and family managed and owned firms are less likely to diversify due to the their desire for control retention. In this context, families seem to balance risk aversion, i.e. more diversification, against control retention, i.e. less diversification, since diversification requires often new equity (or debt) and new human capital in the top-management, leading to less family control over the firm. In family firms without family

representation in the top-management, risk aversion is more important for the family than control retention. Contrary, in firms with representation in the top-management, the family's desire for control retention overshadows their risk aversion. Hence, the chosen private benefit of control, i.e. risk aversion or control retention, depends on the family firm type.

As a consequence, family firms differ from non-family firms because of their higher agency conflict II, not lower agency conflict I. While an adaptation of the diversification level due to lower agency conflict I may represent an optimal response to the different governance structure of family firms, an adaptation due to higher agency conflict II can lead to sub-optimal levels of diversification within these firms.

This analysis also tests whether life-cycle effects influence diversification decisions, an aspect that has also been neglected so far by Anderson and Reeb (2003*b*) and Gomez-Mejia et al. (2010). However, the results are not biased by the life-cycle of the family firm. Overall, the results are robust against several several concerns, e.g. endogeneity.

5.5 Limitations

This section briefly outlines the limitations of my empirical analysis. As argued by Börsch-Supan and Köke (2002), empirical corporate governance studies face several econometric problems. The four most important sources for biased results are *reverse causality*, *omitted variables bias*, *measurement error* and *sample selectivity*.

Reverse causality: As already argued in section 4.4.2, reverse causality as a form of endogeneity can bias the regression results substantially. Thereby it is argued that the direction of interdependency between the dependent and the independent variables is not correctly estimated. Predominant examples in this context are empirical studies focusing on corporate performance and corporate governance. If the regression analysis reveals that higher ownership concentration is correlated with higher firm performance, it is not clear if the dependency is causal. One way of interpreting this result is that concentrated ownership indeed enhances firm performance. However, another possibility is that large professional investors only invest in well performing

firms (cf. Börsch-Supan and Köke (2002)). A simple regression analysis is not capable to distinguish between these two possible explanations. In my empirical analysis, similar problems can occur. For example, family shareholders might sell their equity stake if firm leverage becomes too high. Consequently, leverage would determine the family firm status and not vice versa. One way to address this problem is the usage of lagged variables. However, this approach has several drawbacks and should only be used as an additional test. Another way to rule out reverse causality is the application of propensity score based matching (cf. section 4.4.2). As indicated by the results of the matching estimator, my results are not subject to reverse causality.[47] However, one drawback of this approach is that I can only match on observables. If the propensity score fails to include relevant parameters that determine the change of a family firm to a non-family firm, the matching estimator may be biased itself.[48]

Omitted variables bias: Another problem that can cause endogeneity is the omission of variables that determine both the dependent and independent variables ("spurious correlation"). If such variables exist, the results from the regression analysis can be biased. For example, firm culture could influence the family firm status and the corporate policy of the firm. Unfortunately, it is not possible to measure firm culture in a direct way. Hence, it can not be included in the regression analysis. There exist two possible solutions for the omitted variables problem. First, the application of an FE estimator cancels out unobserved firm characteristics. However, the problem is that this is only true *time constant* firm characteristics. The second possible solution is the application of an instrumental variable (IV) approach (cf. section 4.4.2).[49] Since both FE and IV estimates support the pooled-OLS results, I conclude that omitted variables bias should not play a very important role in my analysis. However, none of these two possible solutions is perfect, and hence omitted variable

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[47]The matching estimator is used in the context of capital structure and payout policy. In these two cases, the results support a causal relationship that runs from family firm characteristics to corporate policy. In the case of diversification decisions, I did not apply the matching estimator since the estimated adjustment time of diversification is too long. However, the problem of reverse causality in this context is assumed to be lower due to the applied sampling procedure (cf. section 4.3.3).

[48]Possible parameters that are not captures in my framework are for example the age of the founder CEO, the number of children of the family or the relationship between different family members. Unfortunately, I can not include these factors since these data are not available for my sample.

[49]The IV approach was not applied for the analysis of payout policy. Hence, omitted variable bias can not be rejected in this context.

bias can not be completely rejected.[50]

Measurement error: The regression results can be biased because of measurement errors. The first possible source of measurement error is that accounting and capital market variables obtained by *Thomson Worldscope* and *Thomson Datastream* are not accurate, for example because accounting information was not correctly included in the database. Unfortunately, no natural solution for this possible concern exists. The second possible source are errors in the hand-collected variables, i.e. the information about the company's founder and the ownership structure. To minimize the probability for such a measurement error, I use several different sources to validate the identity of the company founder (cf. section 4.1.1). Ownership structures are mainly based on Hoppenstedt Aktienfürer. However, several different sources (cf. section 4.1.1) have been used to validate the ownership structures. Of course, this procedure can not totally alleviate concerns about measurement errors in the hand-collected variables. Furthermore, ownership structures may not be accurately represented in these databases (either because of errors in the database or because the shareholders do not report their ownership stakes accurately).[51]

Sample selectivity: In the context of sample selectivity, three major concerns arise: The restriction of my sample to listed CDAX companies, the changing composition of the sample over time and missing variables.

First, I do not consider unlisted companies, companies that are not listed in the EU regulated market at the Deutsche Börse Group ("Freiverkehr") and companies from the financial sectors. The exclusion of financial companies is necessary since their balance sheet structure differs substantially from industrial companies. The selected sample covering the non-financial CDAX companies represents the large majority of

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[50]Furthermore, Edwards and Nibler (2000) and Kaserer and Moldenhauer (2008) argue that the endogeneity problem is less severe in the German environment. One of the reasons for this is that stock based compensation is less common in Germany than for example in the U.S. (cf. Rapp et al. (2009) and Ernst et al. (2009)).

[51]Shareholders had to report their ownership stake to the company and the BaFin during my sample period if they exceed the following ownership thresholds: 5%, 10%, 25%, 50% and 75%. Starting with 2007, the reporting thresholds were changed to 3%, 5%, 10%, 15%, 20%, 25%, 30%, 50% and 75% (cf. §21 para. 1 WpHG). Furthermore, starting in 2002, members of the management and supervisory board as well as their families' have to report trades concerning their company immideately to the company and the public ("director dealings", §15 WpHG).

listed German firms.[52] Hence, the exclusion of companies traded in the "Freiverkehr" is not assumed to bias the results. The fact that my analysis does not cover unlisted companies is for sure a limitation. Since many companies, especially family firms, are unlisted in the German environment (cf. Fohlin (2007)), their inclusion would clearly enhance the representativeness of my analysis. Unfortunately, data availability for unlisted companies is very limited. Hence, an empirical analysis of these companies based on accounting data is not possible. Consequently, I decided not to include unlisted companies in my sample.

The *second* concern, the changing composition of the sample over time, may lead to biased results. Since my sample is unbalanced, admissions and leavings of companies may play an important role. Especially the large number of IPOs during the years 1998 to 2000 changed the composition of the sample substantially. Furthermore, the proportion of family and non-family firms (as well as founder-controlled and real family firms) changed substantially over time. I address this concern in my robustness test. However, a possible bias by changes of the sample can not be completely rejected.

The *third* concerns deals with the problem that only firm-year observations for which all necessary variables are available can be included in the regressions. If, for example, data availability is worse for small companies, they may be under-represented in the regressions. Consequently, the results may be biased. A possible solution for this problem is the application of a sample selection model (e.g. as proposed by Heckman (1979)). However, I did not apply such models for this dissertation.

Furthermore, the definition of a family firm is assumed to have a huge impact on the results. As argued in section 2.1.2, no widely accepted definition exists so far. An alternative to my way of defining family firms is the concept of "Substantial Family Influence Index" (SFI), which was proposed by Klein (2000) and recently used by Achleitner et al. (2009) in an adapted form.[53] However, I decided not to include this way of defining a family firm in my analysis. One rationale for this is that I already analyze the effects of family

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[52]In 2006, the CDAX accounted for about 60% of all traded shares and for about 95% of the whole market capitalization of listed companies (These figures are taken from the DAI Factbook 2009).

[53]The SFI has some advantages compared to my general definition of a family firm. Cf. Achleitner et al. (2009) for a detailed comparison of these two definitions.

ownership and management separately. Furthermore, this index is not very common in the financial economics literature on family firms. Concerning the theoretical framework of my analyses, I focus on agency theory. Alternative theories, such as for example stewardship theory, are largely neglected. Further research is known to clarify the compatibility of my results with these theories.

6 Conclusion

6.1 Concluding remarks

In this section I summarize the main results for capital structure, payout policy and diversification decisions in family firms. First, I answer the research questions if and how family firms differ from non-family firms in terms of corporate policy decisions. After that, the question why families influence the corporate policy of "their" firms is adressed in order to identify the economic "forces" governing family firms.

6.1.1 Main results for corporate policy decisions

Family firms differ substantially from their non-family counterparts in terms of corporate policy. *First*, family firms have lower leverage ratios, independent of the applied leverage definition. Not family ownership alone, but family ownership in combination with family representation in the firm's top-management affects the capital structure decision in these firms. *Second*, family firms have a higher probability for dividend (and total) payout to shareholders than their non-family counterparts. The results for payout levels, i.e. the fraction of distributed earnings, are weaker, but point in the same direction. Family ownership is found to cause this results, independent of the management representation of the family. *Third*, family firms are less likely to diversify in unrelated business segments, but show similar levels of total, related and geographical diversification as non-family firms. A more detailed analysis of the components that can qualify a firm as a family firm, i.e. family ownership and management, reveals that their impact is different. While highly family owned firms are more likely to diversify, especially in related business segments, highly family managed and family owned and managed firms are less likely to diversify,

mainly in unrelated business segments. For geographical diversification, neither of the components has a significant influence.

6.1.2 The "forces" governing family firms

After analyzing overall differences between family and non-family firms as well as the impact of the components that can qualify a firm as a family firm, I turn to the question why family firms adapt their corporate policy. From a theoretical point of view, family firms exhibit three peculiarities in terms of agency conflicts: They have lower agency costs resulting from agency conflicts I and III, but higher agency costs from agency conflict II. Following my prior argumentation, the two private benefits of control that are of particular relevance for families are risk aversion and control retention. Different empirical tests, including the analysis of an international dataset, reveal that the major "force" that governs family firms is *control retention*. Hence, family firms seem to adapt their corporate policy in a way that ensures (or even maximizes) their control over the firm. Furthermore, *risk aversion* plays a role in family firms that are characterized by high family ownership and low representation of the family in the firm's top-management, as indicated by the results for firm diversification. This result supports the view that family firms are heterogeneous. The level of family ownership and representation in the firm's top-management determine the private benefit most relevant for the family, i.e. either control retention or risk aversion.

To summarize, the consequences of higher agency conflict II in family firms seem to overshadow their lower agency conflict I (and lower agency conflict III in the context of capital structure decisions). This result is especially important since an adaption of corporate policy in family firms due to their lower agency conflict I and III might represent an optimal response to their different governance structures. Contrary, higher agency conflict II and the extraction of private benefits of control can have negative consequences for the firm's welfare, e.g. because family shareholders avoid raising new capital at the cost of firm growth. Of course, this finding does not implicate that family firms perform worse than their non-family counterparts.

6.2 Avenues for future research

The observed differences in terms of corporate policy corroborate the view that family firms are different. Of course, several important questions are not addressed by this dissertation and left for future research: *First*, to gain more insight into the interpretation of the results, survey evidence among CEOs of listed family firms might be reasonable to further illuminate their motivations behind corporate policy decisions. *Second*, another natural avenue for future research is to extend the analysis to the large number of privately held firms in Germany. However, data availability is a major concern in this context. *Third*, there might be other interesting corporate policy choices which are affected by family firm characteristics, such as mergers and acquisitions, hedging activities, executive compensation or corporate social responsibility. *Fourth*, one question that is not addressed by this dissertation is the performance relevance of the families' corporate policy adaptations. Their desire for control retention may hinder firm growth, e.g. because the family avoids raising new capital to finance net present value positive investment projects. Consequently, they probably could perform better without choosing levels of leverage, payout and diversification that ensure (or even maximize) their control over the firm. *Fifth*, the application of international panel ownership data would allow a more detailed analysis how family firms behave in terms of corporate policy in different institutional environments.

6.3 Contribution and implications

This dissertation contributes to the literature on family firms by complementing hitherto sparse empirical evidence on family firms and corporate policy decisions. My findings are of relevance for academics, equity investors, capital market regulators and family firms themselves.

First, for **academics** my results have several implications. My study suggests that the institutional environment is of huge importance for the understanding of corporate policy decisions in family firms. For example, family firms might prefer debt over equity in countries with high shareholder protection. However, in the German environment family firms avoid debt due to high creditor rights and tight creditor monitoring. Hence, it is

of crucial importance to consider the institutional environment when analyzing corporate policy decisions in family firms. Furthermore, my results reveal that the impact of family ownership and management should be disentangled carefully when analyzing family firms. For example, firms with high family management behave differently than firms with high family ownership in terms of diversification decisions. The last aspect relevant for academics is that this dissertations sheds light on a hitherto largely neglected question, i.e. why families affect corporate policy decisions. In this context, I provide novel empirical evidence that identifies control retention and - to a smaller extend - risk aversion as the "forces" governing family firms.

Second, **equity investors** interested in family firms might benefit from these results. As argued before, my results do not implicate that family firms do not perform better than non-family firms. As shown by previous research dealing with family firms and firm performance, especially firms still run by the company's founder might be interesting for equity investors. Behind this background, my results which contribute to a better understanding of family firms might increase their attractiveness for equity investors.

Third, these results have important implications for **capital market regulators**. Since my results reveal that families are concerned about a loss of control over "their" firm, regulators should think about ways to reduce these fears for family firms listed at public equity markets. Their desire for control retention can hinder the growth of family firms, e.g. because they abstain from financing profitable projects. One possible way for family firms to finance growth opportunities without loosing control are preferred shares, i.e. shares without a voting right. In the German environment, their usage is legally limited. However, preferred shares might be an attractive financing vehicle for family firms. Furthermore, mezzanine capital and public debt markets in general are promising approaches in this context. Altogether, regulatory adjustments that improve the possibilities of family firms to raise new capital without loosing control might enhance the growth of these firms.

Beneath improving growth opportunities for listed family firms, such regulatory adjustments can increase the attractiveness of an IPO for the huge amount of unlisted family firms in Germany as well. This large number of unlisted family firms can be seen as one reason that explains the still under-development German equity market, e.g. in comparison to the U.S. Hence, my results can help regulators to better understand the needs of

family firms and to adjust the regulatory framework in a way that makes public equity markets more attractive for them. As recently shown by Kaserer and Lenz (2009), the access to public equity markets has a positive impact on unlisted firms, e.g. in terms of sales growth. Hence, an increase in the number of firms listed at public equity markets is expected to improve the welfare of the whole economy. Especially in the German environment where family firms are the predominant form of unlisted companies, it is of crucial importance to reduce their reservations concerning an IPO. As my results suggest, the most promising way for this is to adapt the regulatory framework in order to dissipate or at least decrease their anxiety concerning a loss of control over "their" firm.

Fourth, the last group for which theses results are of interest are **family firms** themselves. My analysis reveals that corporate policy decisions in family firms are substantially influenced by the family, especially if they are represented in the firm's top-management. Hence, their influence remains strong, even after an IPO. Consequently, the decision to enter public equity markets is not necessarily accompanied by a total loss of control. These results, especially in combination with regulatory adjustments that explicitly consider the peculiarities and needs of family firms, can help to alleviate concerns of unlisted family firms regarding an IPO and thus increase the importance of public equity markets in Germany, at the benefit of the economic welfare.

Appendix

Table Appendix 1: Definition of Variables

Variable	Description
Family variables	
Family Firm	Dummy which is one if the founding family holds is at least 25% or the firm's voting rights (either direct or indirect) *and/or* a member of the founding family is represented in the management board *and/or* a member of the founding family is represented the supervisory board
Family Ownership	Percentage of ownership of the firm's voting rights held by all members of the founding family (either direct or indirect)
Family MB	Equals 1 if a member of the founding family is involved in the management board
Family SB	Equals 1 if a member of the founding family is involved in the supervisory board
Family Management	Equals 1 if a member of the founding family is involved either in the management or supervisory board
Real Family Firm	Dummy which is one if members of the founding family except the founder herself holt at least 25% or the firm's voting rights (either direct or indirect) *and/or* a member of the founding family except the founder herself is represented in the management board *and/or* a member of the founding family except the founder herself is represented the supervisory board
Founder-controlled Firm	All family firms that do not fulfill the criteria of a real family firm
Founder CEO	Equals 1 if the CEO is the founder of the firm
Family Owned*Managed	Interaction term of family ownership and family MB
Family Firm 2	Dummy which is one if is a family holds at least 20% of the firm's voting rights and is present in the firm's management
Leverage definitions	
Book Leverage	Total liabilities / Total assets
Market Leverage	Total liabilities / (Market value of equity + total liabilities)
Long-term Book Leverage	(Total liabilities - current liabilities) / Total assets
Long-term Market Leverage	(Total liabilities - current liabilities) / (Market value of equity + total liabilities)

Definition of Variables - continued

Variable	Description
Financial Book Leverage	(Total liabilities - provisions - accounts payable - deferred taxes) / (Book value of equity + total liabilities - provisions - accounts payable - deferred taxes)
Financial Market Leverage	(Total liabilities - provisions - accounts payable - deferred taxes) / (Market value of equity + total liabilities - provisions - accounts payable - deferred taxes)

Payout measurements

Variable	Description
Zero Distribution Profits	$\frac{D(1-t_c)}{1-t_d} + R$
Dividend	Dummy variable for dividend payment which equals 1 if the firm pays any dividend to common and preferred equity and zero otherwise
Repurchase	Dummy variable that equals one if the company buys back shares and zero otherwise
Payout	Dummy variable that equals one if the firm either pays dividends or repurchases shares and zero otherwise
Dividend Payout Ratio	Dividends divided by zero distribution profits. Adaptation: It is set to 1 if it is negative or above 1
Share Repurchase Payout Ratio	Repurchasing volume divided by zero distribution profits. Adaptation: It is set to 1 if it is negative or above 1
Total Payout Ratio	Sum of dividends and repurchase volume divided by zero distribution profits. Adaptation: It is set to 1 if it is negative or above 1

Diversification measurements

Variable	Description
Total BSD	Entropy index for overall business segment diversification
Related BSD	Entropy index for diversification within a 2-digit SIC code
Unrelated BSD	Entropy index for diversification over different 2-digit SIC code
Total BSD [Dummy]	Dummy variable which equals one if total BSD is above zero and zero otherwise
Related BSD [Dummy]	Dummy variable which equals one if related BSD is above zero and zero otherwise
Unrelated BSD [Dummy]	Dummy variable which equals one if unrelated BSD is above zero and zero otherwise
Geographical Diversification	Entropy index for diversification over different regions (Europe, Asia, America and Other)
Geographical Diversification [Dummy]	Dummy variable which equals one if geographical diversification is above zero and zero otherwise

Control variables

Variable	Description
Firm Size [Ln]	Natural logarithm of the firm's number of employees
Firm Size [Ln Assets]	Natural logarithm of the firm's total assets
Profitability	Earnings before interest, taxes, depreciation and amortization (EBITDA) / total assets
Profitability [ZDP]	ZDP / total assets
Outside Blockholders	Ownership fraction of voting rights in the hand of outside shareholders which have an ownership stake of at least 5%.
Outside Blockholder [25%]	Dummy variable that equals one if an outside blockholder with at least 25% of the firm's voting righs exists and zero otherwise

Variable	Description
Firm Specific Risk	Residuals' sum of squares from a regression of the individual stock returns on the returns of the market (CDAX)
Firm Age [Ln]	Natural logarithm of the number of years since the firm's incorporation
Tangible Assets Ratio	Tangible assets / Total assets
Market-to-Book	Market value of the firm / book value of the firm
Accounting Standard	Equals 1 if the firm applies German GAAP and zero if it applies US-GAAP or IFRS
Payout Ratio	Common dividends / net income available to common equity; Equals 1 if calculated payout ratio is below 0 or above 1.
Industry Leverage	Median leverage in the firm's industry indicated by the first number of the SIC code for each year. Thereby, the same definition as for the dependent variable is used to define leverage (e.g. market leverage))
Expected Inflation	Inflation rate of the following year
Voting-Cashflow Wedge	Dummy that equals 1 if there is a deviation of ownership and cashflow rights for the largest shareholder

Variables used for robustness and theory tests

Variable	Description
High-Tech Firm	Equals 1 if the firm went public during 1998 and 2000
Government Blockholder	Equals 1 if the state owns at least 25% of the voting rights and zero otherwise
Financial Blockholder	Equals 1 if a financial institute (banks, investment fonds, insurance companies or venture capital or private equity fonds) owns at least 25% of the voting rights and zero otherwise
Private Blockholder	Equals 1 if an individual (except the founding family or employees of the firm) owns at least 25% of the voting rights and zero otherwise
Strategic Blockholder	Equals 1 if a strategic investor (e.g. another company) owns at least 25% of the voting rights and zero otherwise
Bank Ownership	Cumulative ownership of voting rights in the hands of banks
Foreign Bank Ownership	Cumulative ownership of voting rights in the hands of foreign banks
Domestic Bank Ownership	Cumulative ownership of voting rights in the hands of domestic banks
Insider Ownership	Cumulative ownership of voting rights in the hands of firm insiders, i.e. active and former members of the management and supervisory board and their families
Controlled Family	The founding family owns at least 25% of the firm's voting rights **and at least one** external blockholder with at least 5% (25%) of the firm's voting rights is present.
Uncontrolled Family	The founding family owns at least 25% of the firm's voting rights **and no** external blockholder with at least 5% (25%) of the firm's voting rights is present.
Alignment Index	Product of the founding family's voting rights and the fraction of executive managers related to the founding family
Voting Power Index	Fraction of the founding family's voting rights to the voting rights in hands of all blockholders with an ownership fraction above 5%

Definition of Variables - continued

Variable	Description
Type I family firm	Family firm with low interest alignment index and low voting power index (divisor between high and low is either the median, the 75% percentile or the mean value)
Type II family firm	Family firm with low interest alignment index and high voting power index
Type III family firm	Family firm with high interest alignment index and low voting power index
Type IV family firm	Family firm with high interest alignment index and high voting power index
Shareholder Rights	Anti-director index as in La Porta et al. (1998), ranging from zero to six with six being the highest level of investor protection
Stock Volatility	Share price volatility over the last 12 months
Dividend [Dummy]	Dummy variable which equals 1 if the firm pays a dividend and zero otherwise
Family Managed	Family firms that are highly family-managed. A firm qualifies as as a type I family firm if at least half of the members of the firm's management board are members of the family, while the family ownership is below 20%
Family Owned	Family firms that are highly family-owned. A firm qualifies as a type II family firm if the family ownership is at least 50%, but the family is represented in the firm's management board with a fraction smaller than 20%
Family Owned/Managed	Family firms that have similar levels of family ownership and family management. All family firms which do neither fulfill the criteria of a family owned nor family managed firm are assigned to this group

This table provides an overview on the variables used in this dissertation. For a more comprehensive discussion of the variables, please refer to chapter 4.
Source: Own work.

Table Appendix 2: Shareholder Groups and Classes

Shareholder Group		Shareholder Class								
Name	Description	Family	Active Insider	Insider	Outside	Financial	Government	Strategic	Private	Other
MB	Member of the management board		x	x						
SB	Member of the supervisory board		x	x						
FMB	Former member of the management board			x						
FSB	Former member of the supervisory board			x						
PRIV	Private investor without an active role in the firm				x				x	
EMP	Employee outside the top-management									x
FF_MB	Founder who is member of the management board	x	x	x						
FF_SB	Founder who is member of the supervisory board	x	x	x						
FF_FMB	Founder who was member of the management board	x		x						
FF_FSB	Founder who was member of the supervisory board	x		x						
FF_PRIV	Founder without an active role in the firm	x								
FF_EMP	Founder who is an employee outside the top-management	x								
BANK	Universal banks, credit and investment banks (for their own account)				x	x				
INST	Institutional investors (e.g. investment funds)				x	x				
VCPE	Investment companies for venture capital and private equity				x	x				
INSR	Insurances				x	x				
CORP	Other corporations				x			x		
GOV	Federal state, land and all other public authorities				x		x	x		
ENDO	Foundations				x				x	
BGR	Strategic investors with more than 50% voting rights				x			x		
TRE	Treasury shares									x

This table shows the assignment of shareholder groups to shareholder classes. Every shareholder is assigned to a shareholder group, according to her identity. Please note that ownership hold by family members of a founder or member of the firm's top-management are assigned to the founder or the member of the top-management. For example, ownership of the wife of a founder who is currently member of the management board is assigned to the shareholder group "FF_MB". To simplify matters, the distinction between founders themselves and other members of the founding family is neglected in this illustration.
Source: Own work.

Table Appendix 3: Capital Structure: Book Leverage

Model	I a	I b	I c	II a	II b	II c	III a	III b	III c
Family Firm	-0.041***	-0.049**	-0.019						
	(-2.62)	(-2.46)	(-1.04)						
Family Ownership				-0.046	-0.066	-0.051*			
				(-1.44)	(-1.58)	(-1.70)			
Family [MB]				-0.042**	-0.043*	-0.023			
				(-2.43)	(-1.95)	(-1.13)			
Family [SB]				0.0029	0.011	0.018			
				(0.16)	(0.49)	(1.19)			
Family Owned*Managed							-0.11***	-0.12***	-0.086***
							(-3.18)	(-2.91)	(-2.62)
Firm Size [Ln]	0.039***	0.044***	0.045***	0.038***	0.043***	0.045***	0.039***	0.044***	0.045***
	(9.96)	(8.73)	(5.13)	(9.51)	(8.56)	(5.20)	(9.77)	(8.91)	(5.18)
Profitability	-0.00017***	0.00023	-0.00036***	-0.00020***	0.00015	-0.00035***	-0.00021***	0.00013	-0.00035***
	(-3.93)	(0.44)	(-6.62)	(-4.17)	(0.29)	(-6.52)	(-4.51)	(0.24)	(-6.43)
Outside Blockholders	-0.0080	-0.061**	-0.012	-0.015	-0.068**	-0.016	-0.0094	-0.058**	-0.016
	(-0.39)	(-2.06)	(-0.64)	(-0.74)	(-2.22)	(-0.83)	(-0.50)	(-2.05)	(-0.84)
Firm Specific Risk	0.11***	0.15***	0.055***	0.11***	0.15***	0.055***	0.11***	0.15***	0.053**
	(4.23)	(4.00)	(2.70)	(4.14)	(4.13)	(2.66)	(4.09)	(4.06)	(2.57)
Firm Age [Ln]	0.0080	0.0048	0.047***	0.0062	0.0032	0.045**	0.0080	0.0046	0.043**
	(1.19)	(0.62)	(2.59)	(0.92)	(0.42)	(2.46)	(1.20)	(0.61)	(2.34)
Tangible Assets Ratio	0.12***	0.11**	0.26***	0.13***	0.11**	0.27***	0.12***	0.11**	0.26***
	(2.92)	(2.07)	(5.67)	(3.00)	(2.15)	(5.74)	(2.94)	(2.03)	(5.60)
Market-to-Book	0.0011***	0.0024***	0.00089***	0.0011***	0.0023***	0.00088***	0.0010***	0.0023***	0.00088***
	(6.53)	(2.73)	(7.36)	(6.44)	(2.68)	(7.18)	(6.69)	(2.61)	(7.16)
Accounting Standard	0.078***	0.11***	0.044***	0.078***	0.11***	0.043***	0.081***	0.11***	0.043***
	(5.37)	(3.70)	(4.45)	(5.40)	(3.73)	(4.36)	(5.67)	(4.03)	(4.35)
Payout Ratio	-0.033**	-0.024	-0.028***	-0.031**	-0.021	-0.027***	-0.031**	-0.024	-0.027***
	(-2.46)	(-0.65)	(-3.44)	(-2.34)	(-0.56)	(-3.45)	(-2.37)	(-0.64)	(-3.52)
Industry Leverage	0.30***	0.41	0.33***	0.30***	0.42	0.33***	0.30***	0.48	0.33***
	(2.81)	(1.26)	(4.00)	(2.84)	(1.28)	(3.99)	(2.88)	(1.46)	(4.03)
Expected Inflation Rate	0.029**	0.046	0.030***	0.027**	0.046	0.027**	0.027**	0.047	0.028**
	(2.41)	(0.45)	(2.66)	(2.21)	(0.45)	(2.39)	(2.25)	(0.47)	(2.44)
Observations	3746	3746	3746	3746	3746	3746	3746	3746	3746
Adj. R-squared	0.28	0.35	0.81	0.28	0.36	0.81	0.28	0.36	0.81
Model	OLS	BE	FE	OLS	BE	FE	OLS	BE	FE

A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.

Source: Own work based on Ampenberger et al. (2009).

Table Appendix 4: Capital Structure: Long-term Book Leverage

Model	I a	I b	I c	II a	II b	II c	III a	III b	III c
Family Firm	-0.036***	-0.051***	-0.023*						
	(-3.10)	(-3.89)	(-1.68)						
Family Ownership				-0.0067	-0.012	-0.039*			
				(-0.32)	(-0.42)	(-1.80)			
Family [MB]				-0.052***	-0.053***	-0.039**			
				(-3.98)	(-3.52)	(-2.29)			
Family [SB]				0.0021	-0.0046	-0.0090			
				(0.18)	(-0.31)	(-0.76)			
Family Owned*Managed							-0.085***	-0.075***	-0.082***
							(-3.58)	(-2.70)	(-2.72)
Firm Size [Ln]	0.020***	0.024***	-0.0063	0.019***	0.023***	-0.0053	0.020***	0.025***	-0.0064
	(6.95)	(7.00)	(-0.95)	(6.52)	(6.89)	(-0.82)	(6.97)	(7.48)	(-0.99)
Profitability	-0.00035***	-0.00026	-0.00047***	-0.00037***	-0.00029	-0.00046***	-0.00038***	-0.00030	-0.00046***
	(-12.4)	(-0.75)	(-12.2)	(-12.5)	(-0.84)	(-12.2)	(-12.7)	(-0.88)	(-12.0)
Outside Blockholders	0.024	-0.0070	0.015	0.024	-0.0015	0.0089	0.026*	0.0076	0.013
	(1.60)	(-0.35)	(0.85)	(1.56)	(-0.075)	(0.50)	(1.78)	(0.39)	(0.73)
Firm Specific Risk	0.051***	0.085***	0.026***	0.050***	0.082***	0.026***	0.049***	0.086***	0.025***
	(4.66)	(3.26)	(2.92)	(4.60)	(3.16)	(2.83)	(4.55)	(3.27)	(2.77)
Firm Age [Ln]	0.0051	0.00033	0.021	0.0027	-0.00091	0.018	0.0053	0.0018	0.017
	(0.90)	(0.064)	(1.30)	(0.47)	(-0.17)	(1.10)	(0.93)	(0.36)	(1.04)
Tangible Assets Ratio	0.28***	0.28***	0.29***	0.28***	0.28***	0.29***	0.28***	0.27***	0.29***
	(8.69)	(7.91)	(6.37)	(8.87)	(7.93)	(6.35)	(8.82)	(7.74)	(6.28)
Market-to-Book	0.00016	-0.00011	0.00011	0.00017	-0.000054	0.00012	0.00016	-0.00016	0.00011
	(0.74)	(-0.16)	(0.97)	(0.82)	(-0.082)	(1.04)	(0.68)	(-0.25)	(0.94)
Accounting Standard	0.083***	0.087***	0.067***	0.081***	0.087***	0.065***	0.085***	0.095***	0.066***
	(7.49)	(4.84)	(7.06)	(7.44)	(4.79)	(6.96)	(7.87)	(5.30)	(7.02)
Payout Ratio	-0.029***	-0.036	-0.020**	-0.029***	-0.041	-0.018**	-0.028***	-0.036	-0.019**
	(-2.66)	(-1.41)	(-2.56)	(-2.65)	(-1.61)	(-2.46)	(-2.59)	(-1.42)	(-2.51)
Industry Leverage	0.31***	0.58	0.19**	0.31***	0.60*	0.19**	0.31***	0.64*	0.20**
	(3.07)	(1.63)	(2.30)	(3.01)	(1.68)	(2.31)	(3.09)	(1.79)	(2.37)
Expected Inflation	0.018*	-0.030	0.0084	0.016*	-0.030	0.0053	0.017*	-0.024	0.0067
	(1.93)	(-0.45)	(0.89)	(1.73)	(-0.46)	(0.57)	(1.86)	(-0.37)	(0.72)
Observations	3492	3492	3492	3492	3492	3492	3492	3492	3492
Adj. R-squared	0.35	0.47	0.75	0.36	0.47	0.75	0.35	0.46	0.75
Model	OLS	BE	FE	OLS	BE	FE	OLS	BE	FE

A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Ampenberger et al. (2009).

Table Appendix 5: Capital Structure: Long-term Market Leverage

Model	I a	I b	I c	II a	II b	II c	III a	III b	III c
Family Firm	-0.042***	-0.053***	-0.026**						
	(-3.90)	(-4.49)	(-2.09)						
Family Ownership				-0.017	-0.018	-0.027			
				(-0.87)	(-0.73)	(-1.16)			
Family MB				-0.045***	-0.043***	-0.052***			
				(-3.75)	(-3.18)	(-3.32)			
Family SB				-0.0067	-0.0080	-0.013			
				(-0.59)	(-0.60)	(-1.17)			
Family Owned*Managed							-0.077***	-0.058**	-0.093***
							(-3.40)	(-2.33)	(-3.32)
Firm Size [Ln]	0.016***	0.020***	0.0089	0.015***	0.020***	0.010*	0.016***	0.021***	0.0087
	(5.70)	(6.50)	(1.59)	(5.34)	(6.51)	(1.84)	(5.73)	(7.11)	(1.57)
Profitability	-0.00024***	-0.00012	-0.00034***	-0.00026***	-0.00015	-0.00033***	-0.00027***	-0.00015	-0.00033***
	(-7.11)	(-0.40)	(-11.9)	(-7.31)	(-0.48)	(-11.8)	(-7.83)	(-0.49)	(-11.4)
Outside Blockholders	0.0095	-0.015	-0.0056	0.0099	-0.0084	-0.011	0.017	0.0046	-0.0081
	(0.64)	(-0.87)	(-0.39)	(0.66)	(-0.45)	(-0.74)	(1.19)	(0.26)	(-0.56)
Firm Specific Risk	0.052***	0.080***	0.023***	0.051***	0.078***	0.022***	0.051***	0.082***	0.021***
	(4.96)	(3.42)	(2.92)	(4.80)	(3.33)	(2.75)	(4.78)	(3.46)	(2.71)
Firm Age [Ln]	0.0056	0.00038	0.039***	0.0042	-0.000087	0.035**	0.0064	0.0022	0.034**
	(1.12)	(0.083)	(2.61)	(0.82)	(-0.019)	(2.36)	(1.28)	(0.47)	(2.29)
Tangible Assets Ratio	0.29***	0.28***	0.27***	0.29***	0.28***	0.26***	0.29***	0.27***	0.26***
	(8.90)	(8.91)	(5.56)	(9.04)	(8.85)	(5.57)	(8.97)	(8.62)	(5.50)
Market-to-Book	-0.00011	-0.00071	-0.000058	-0.00010	-0.00069	-0.000049	-0.00012	-0.00078	-0.000061
	(-0.47)	(-1.22)	(-0.62)	(-0.45)	(-1.17)	(-0.55)	(-0.48)	(-1.32)	(-0.66)
Accounting Standard	0.066***	0.075***	0.044***	0.065***	0.076***	0.042***	0.069***	0.084***	0.043***
	(6.18)	(4.65)	(4.95)	(6.18)	(4.69)	(4.81)	(6.55)	(5.18)	(4.89)
Payout Ratio	-0.017*	-0.030	-0.0053	-0.016*	-0.034	-0.0037	-0.016	-0.031	-0.0039
	(-1.71)	(-1.34)	(-0.76)	(-1.70)	(-1.50)	(-0.55)	(-1.65)	(-1.35)	(-0.59)
Industry Leverage	0.27***	0.73**	0.20**	0.26***	0.78**	0.19**	0.27***	0.79**	0.20**
	(3.04)	(2.36)	(2.56)	(2.95)	(2.50)	(2.40)	(2.95)	(2.53)	(2.46)
Expected Inflation	0.024***	-0.053	0.0084	0.023***	-0.051	0.0046	0.023***	-0.049	0.0059
	(2.99)	(-0.92)	(0.98)	(2.77)	(-0.87)	(0.54)	(2.89)	(-0.83)	(0.69)
Observations	3500	3500	3500	3500	3500	3500	3500	3500	3500
Adj. R-squared	0.34	0.45	0.75	0.34	0.45	0.75	0.34	0.44	0.75
Model	OLS	BE	FE	OLS	BE	FE	OLS	BE	FE

A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.

Source: Own work based on Ampenberger et al. (2009).

Table Appendix 6: Capital Structure: Financial Book Leverage

Model	I a	I b	I c	II a	II b	II c	III a	III b	III c
Family Firm	-0.019	-0.038	-0.047**						
	(-0.80)	(-1.41)	(-1.98)						
Family Ownership				-0.031	-0.011	-0.061			
				(-0.72)	(-0.20)	(-1.55)			
Family MB				-0.054**	-0.065**	-0.036			
				(-2.06)	(-2.10)	(-1.28)			
Family SB				0.037	0.024	0.017			
				(1.63)	(0.81)	(0.76)			
Family Owned*Managed							-0.13**	-0.090	-0.10**
							(-2.53)	(-1.54)	(-2.36)
Firm Size [Ln]	0.043***	0.042***	0.058***	0.042***	0.041***	0.057***	0.042***	0.043***	0.057***
	(7.24)	(5.99)	(3.95)	(6.87)	(5.77)	(3.87)	(7.09)	(6.09)	(3.80)
Profitability	-0.11**	0.084	-0.13***	-0.11**	0.081	-0.13***	-0.10**	0.085	-0.13***
	(-2.23)	(1.18)	(-4.24)	(-2.24)	(1.14)	(-4.08)	(-2.10)	(1.19)	(-4.02)
Outside Blockholders	-0.034	-0.11***	-0.013	-0.039	-0.10***	-0.015	-0.048*	-0.099***	-0.012
	(-1.12)	(-2.73)	(-0.56)	(-1.26)	(-2.69)	(-0.64)	(-1.70)	(-2.74)	(-0.51)
Firm Specific Risk	0.16***	0.16**	0.065**	0.16***	0.16**	0.066**	0.16***	0.16**	0.062**
	(4.66)	(2.46)	(2.55)	(4.66)	(2.46)	(2.59)	(4.66)	(2.46)	(2.48)
Firm Age [Ln]	0.00064	-0.0033	0.056*	-0.0040	-0.0070	0.054*	-0.0022	-0.0038	0.052*
	(0.069)	(-0.33)	(1.86)	(-0.43)	(-0.69)	(1.84)	(-0.24)	(-0.38)	(1.73)
Tangible Assets Ratio	0.11*	0.14*	0.34***	0.11*	0.13*	0.34***	0.11*	0.14*	0.33***
	(1.72)	(1.87)	(3.83)	(1.68)	(1.81)	(3.81)	(1.71)	(1.92)	(3.71)
Market-to-Book	0.0018***	0.0038***	0.0014***	0.0018***	0.0038***	0.0014***	0.0018***	0.0035*	0.0014***
	(3.28)	(1.99)	(3.75)	(3.20)	(1.97)	(3.65)	(3.18)	(1.81)	(3.68)
Accounting Standard	0.053**	0.050	0.0071	0.053**	0.049	0.0055	0.055**	0.054	0.0052
	(2.27)	(1.30)	(0.53)	(2.30)	(1.27)	(0.42)	(2.36)	(1.42)	(0.40)
Payout Ratio	0.0012	-0.022	-0.012	0.0071	-0.017	-0.011	0.0059	-0.022	-0.012
	(0.050)	(-0.47)	(-1.01)	(0.30)	(-0.36)	(-0.91)	(0.25)	(-0.47)	(-0.95)
Industry Leverage	0.54***	0.86***	0.45***	0.52***	0.85***	0.44***	0.52***	0.87***	0.44***
	(6.12)	(2.74)	(6.95)	(5.88)	(2.71)	(6.73)	(6.01)	(2.76)	(6.71)
Expected Inflation	0.050***	0.20**	0.025	0.047**	0.20**	0.021	0.047**	0.20**	0.022
	(2.74)	(2.19)	(1.64)	(2.52)	(2.20)	(1.35)	(2.53)	(2.11)	(1.45)
Observations	2035	2035	2035	2035	2035	2035	2035	2035	2035
Adj. R-squared	0.18	0.23	0.83	0.19	0.24	0.83	0.19	0.23	0.83
Model	OLS	BE	FE	OLS	BE	FE	OLS	BE	FE

A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Ampenberger et al. (2009).

Table Appendix 7: Capital Structure: Financial Market Leverage

Model	I a	I b	I c	II a	II b	II c	III a	III b	III c
Family Firm	**-0.040**	**-0.048***	**-0.035**						
	(-1.52)	**(-1.74)**	**(-1.40)**						
Family Ownership				**-0.030**	**-0.024**	**0.0092**			
				(-0.65)	**(-0.43)**	**(0.21)**			
Family MB				**-0.045***	**-0.042**	**-0.060****			
				(-1.68)	**(-1.37)**	**(-2.24)**			
Family SB				**-0.00092**	**-0.0097**	**-0.0034**			
				(-0.038)	**(-0.32)**	**(-0.14)**			
Family Owned*Managed							**-0.100***	**-0.084**	**-0.060**
							(-1.89)	**(-1.43)**	**(-1.32)**
Firm Size [Ln]	0.030***	0.032***	0.048***	0.029***	0.031***	0.049***	0.030***	0.033***	0.047***
	(4.49)	(4.41)	(3.37)	(4.28)	(4.31)	(3.43)	(4.47)	(4.59)	(3.25)
Profitability	-0.22***	-0.024	-0.20***	-0.22***	-0.026	-0.20***	-0.22***	-0.025	-0.20***
	(-4.18)	(-0.36)	(-6.26)	(-4.18)	(-0.39)	(-6.14)	(-4.17)	(-0.37)	(-6.16)
Outside Blockholders	-0.050	-0.10***	-0.050**	-0.052	-0.10**	-0.050**	-0.046	-0.088**	-0.049**
	(-1.58)	(-2.62)	(-2.22)	(-1.65)	(-2.54)	(-2.11)	(-1.59)	(-2.41)	(-2.17)
Firm Specific Risk	0.20***	0.19***	0.056**	0.20***	0.18***	0.058**	0.19***	0.18***	0.053**
	(4.89)	(2.85)	(2.44)	(4.85)	(2.78)	(2.52)	(4.81)	(2.81)	(2.35)
Firm Age [Ln]	0.0062	0.0018	0.094***	0.0038	0.00044	0.090***	0.0054	0.0018	0.092***
	(0.70)	(0.18)	(2.91)	(0.42)	(0.043)	(2.84)	(0.61)	(0.18)	(2.85)
Tangible Assets Ratio	0.17**	0.20***	0.32***	0.17**	0.20***	0.31***	0.17**	0.20***	0.31***
	(2.40)	(2.68)	(3.96)	(2.39)	(2.66)	(3.84)	(2.38)	(2.72)	(3.85)
Market-to-Book	-0.00092	-0.0042***	0.00022	-0.00087	-0.0040**	0.00027	-0.00095	-0.0043***	0.00023
	(-1.10)	(-2.66)	(0.95)	(-1.04)	(-2.51)	(1.20)	(-1.14)	(-2.72)	(1.00)
Accounting Standard	0.050**	0.062	-0.012	0.050**	0.063*	-0.014	0.052**	0.067*	-0.013
	(2.08)	(1.64)	(-0.83)	(2.09)	(1.67)	(-0.93)	(2.16)	(1.76)	(-0.87)
Payout Ratio	0.00073	-0.077	0.00088	0.0029	-0.078	0.00076	0.0033	-0.078	0.0012
	(0.031)	(-1.61)	(0.059)	(0.12)	(-1.61)	(0.052)	(0.14)	(-1.63)	(0.080)
Industry Leverage	0.55***	1.10***	0.38***	0.54***	1.10***	0.38***	0.54***	1.10***	0.38***
	(5.92)	(3.07)	(6.54)	(5.80)	(3.08)	(6.45)	(5.87)	(3.10)	(6.43)
Expected Inflation	0.032*	0.21**	-0.011	0.031*	0.21**	-0.012	0.030*	0.20**	-0.012
	(1.83)	(2.29)	(-0.86)	(1.74)	(2.22)	(-0.92)	(1.69)	(2.12)	(-0.92)
Observations	2088	2088	2088	2088	2088	2088	2088	2088	2088
Adj. R-squared	0.21	0.23	0.83	0.21	0.22	0.83	0.21	0.23	0.83
Model	OLS	BE	FE	OLS	BE	FE	OLS	BE	FE

A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Ampenberger et al. (2009).

Table Appendix 8: Capital Structure: Founder CEO 1/3

Model	I a	I b	I c	II a	II b	II c
	Book Leverage			Market Leverage		
Founder CEO	-0.061***	-0.075***	-0.047**	-0.059**	-0.079***	-0.017
	(-2.89)	(-3.44)	(-2.14)	(-2.58)	(-3.36)	(-0.81)
Firm Size [Ln]	0.038***	0.040***	0.043***	0.028***	0.032***	0.041***
	(9.31)	(7.72)	(4.33)	(5.41)	(5.78)	(4.44)
Profitability	-0.00021***	0.000075	-0.00036***	-0.00012	0.00034	-0.00033***
	(-4.31)	(0.14)	(-7.42)	(-1.37)	(0.59)	(-4.45)
Outside Blockholders	-0.00072	-0.058**	-0.0043	-0.016	-0.070**	-0.032
	(-0.037)	(-2.04)	(-0.22)	(-0.65)	(-2.32)	(-1.52)
Firm Specific Risk	0.11***	0.10***	0.061***	0.14***	0.16***	0.062***
	(3.86)	(3.58)	(2.80)	(4.04)	(4.29)	(2.65)
Firm Age [Ln]	0.0049	0.0021	0.036*	0.0096	-0.0051	0.080***
	(0.69)	(0.26)	(1.92)	(1.21)	(-0.59)	(3.68)
Tangible Assets Ratio	0.100**	0.087	0.25***	0.23***	0.25***	0.30***
	(2.33)	(1.57)	(5.18)	(4.63)	(4.31)	(5.86)
Market-to-Book	0.0011***	0.0023**	0.00086***	-0.00033	-0.0017	-0.000063
	(5.57)	(2.54)	(6.46)	(-0.69)	(-1.57)	(-0.26)
Accounting Standard	0.076***	0.088***	0.044***	0.072***	0.087***	0.018
	(5.04)	(3.06)	(4.26)	(3.90)	(2.87)	(1.50)
Payout Ratio	-0.032**	-0.019	-0.027***	-0.024	-0.031	-0.013
	(-2.29)	(-0.50)	(-3.09)	(-1.38)	(-0.75)	(-1.30)
Industry Leverage	0.30***	0.61*	0.31***	0.56***	0.86***	0.44***
	(2.73)	(1.84)	(3.62)	(6.58)	(2.64)	(5.34)
Expected Inflation	0.030**	0.027	0.030**	0.043***	-0.065	0.023**
	(2.34)	(0.30)	(2.49)	(3.40)	(-0.68)	(2.00)
Observations	3449	3449	3449	3547	3547	3547
Adj. R-squared	0.29	0.35	0.82	0.26	0.31	0.81
Model	OLS	BE	FE	OLS	BE	FE

A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, **, and * indicate significance on the 1%-, 5%- and 10%-level.

Source: Own work based on Ampenberger et al. (2009).

Table Appendix 9: Capital Structure: Founder CEO 2/3

Founder CEO	Long-term book leverage			Financial book leverage		
	-0.048***	-0.051***	-0.044**	-0.084***	-0.095***	-0.083***
	(-3.33)	(-3.36)	(-2.40)	(-2.90)	(-3.12)	(-3.00)
Firm Size [Ln]	0.020***	0.023***	-0.0035	0.042***	0.042***	0.049***
	(7.18)	(6.54)	(-0.49)	(6.85)	(5.94)	(3.56)
Profitability	-0.00037***	-0.00030	-0.00048***	-0.13***	0.054	-0.14***
	(-11.7)	(-0.84)	(-12.2)	(-2.66)	(0.68)	(-4.08)
Outside Blockholders	0.028*	0.016	0.013	-0.041	-0.10***	-0.0061
	(1.95)	(0.85)	(0.75)	(-1.46)	(-2.89)	(-0.27)
Firm Specific Risk	0.051***	0.082***	0.026**	0.16***	0.17***	0.070**
	(4.49)	(3.40)	(2.31)	(4.49)	(2.77)	(2.51)
Firm Age [Ln]	0.0028	-0.00028	0.0053	-0.0048	-0.0047	0.055*
	(0.47)	(-0.053)	(0.33)	(-0.50)	(-0.46)	(1.96)
Tangible Assets Ratio	0.27***	0.28***	0.28***	0.097	0.12	0.32***
	(8.25)	(7.87)	(5.85)	(1.50)	(1.59)	(3.78)
Market-to-Book	0.00017	-0.00049	0.00012	0.0018***	0.0040**	0.0014***
	(0.69)	(-0.79)	(1.04)	(3.70)	(2.09)	(3.85)
Accounting Standard	0.083***	0.088***	0.069***	0.054**	0.060	0.0078
	(7.05)	(4.80)	(7.30)	(2.27)	(1.52)	(0.60)
Payout Ratio	-0.028**	-0.039	-0.016*	0.0011	-0.020	-0.0080
	(-2.47)	(-1.54)	(-1.96)	(0.046)	(-0.43)	(-0.67)
Industry Leverage	0.31***	0.73**	0.19**	0.57***	1.11***	0.45***
	(2.90)	(2.12)	(2.19)	(7.14)	(3.40)	(7.21)
Expected Inflation	0.021**	-0.062	0.015	0.058***	0.22**	0.032**
	(2.15)	(-1.06)	(1.56)	(3.14)	(2.43)	(2.10)
Observations	3214	3214	3214	1934	1934	1934
Adj. R-squared	0.36	0.46	0.75	0.21	0.26	0.84
Model	OLS	BE	FE	OLS	BE	FE

A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.

Source: Own work based on Ampenberger et al. (2009).

Table Appendix 10: Capital Structure: Founder CEO 3/3

Founder CEO	Long-term market leverage			Financial market leverage		
	-0.046***	-0.046***	-0.041***	-0.073***	-0.085***	-0.062**
	(-3.39)	(-3.44)	(-2.59)	(-2.61)	(-2.77)	(-2.08)
Firm Size [Ln]	0.016***	0.018***	0.0091	0.029***	0.031***	0.041***
	(5.61)	(5.78)	(1.50)	(4.32)	(4.21)	(2.96)
Profitability	-0.00027***	-0.00018	-0.00034***	-0.27***	-0.083	-0.23***
	(-7.40)	(-0.56)	(-11.4)	(-4.49)	(-1.17)	(-6.57)
Outside Blockholders	0.018	0.0079	-0.0040	-0.043	-0.094**	-0.045**
	(1.30)	(0.47)	(-0.27)	(-1.44)	(-2.57)	(-2.03)
Firm Specific Risk	0.055***	0.073***	0.024**	0.19***	0.17***	0.058**
	(4.79)	(3.41)	(2.45)	(4.60)	(2.63)	(2.37)
Firm Age [Ln]	0.0042	-0.00043	0.033**	0.0025	0.00034	0.092***
	(0.80)	(-0.091)	(2.07)	(0.28)	(0.033)	(2.90)
Tangible Assets Ratio	0.29***	0.29***	0.26***	0.16**	0.20***	0.31***
	(8.58)	(9.17)	(5.13)	(2.26)	(2.65)	(3.98)
Market-to-Book	-0.000064	-0.00069	-0.000039	-0.00081	-0.0033**	0.00026
	(-0.26)	(-1.25)	(-0.41)	(-0.98)	(-2.16)	(1.16)
Accounting Standard	0.065***	0.068***	0.044***	0.048*	0.061	-0.0084
	(5.73)	(4.20)	(4.82)	(1.94)	(1.57)	(-0.57)
Payout Ratio	-0.016	-0.036	-0.0030	0.0049	-0.072	0.0092
	(-1.63)	(-1.57)	(-0.41)	(0.21)	(-1.49)	(0.67)
Industry Leverage	0.34***	1.10***	0.22***	0.51***	1.08***	0.35***
	(3.60)	(3.51)	(2.67)	(5.57)	(3.08)	(6.24)
Expected Inflation	0.026***	-0.057	0.010	0.039**	0.22**	-0.0021
	(3.02)	(-1.10)	(1.10)	(2.19)	(2.39)	(-0.16)
Observations	3221	3221	3221	1985	1985	1985
Adj. R-squared	0.35	0.46	0.75	0.22	0.23	0.84
Model	OLS	BE	FE	OLS	BE	FE

A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.

Source: Own work based on Ampenberger et al. (2009).

Table Appendix 11: Payout Policy: Family Firms (Ratio)

Model	I a	I b	I c	II a	II b	II c	III a	III b	III c
	Dividend Payout Ratio			Share Rep. Payout Ratio			Total Payout Ratio		
Family Firm	**0.038***	**0.048**	**0.039****	**0.0041**	**-0.018**	**0.0018**	**0.038***	**0.0087**	**0.034**
	(1.93)	**(1.46)**	**(2.13)**	**(0.41)**	**(-0.60)**	**(0.15)**	**(1.79)**	**(0.19)**	**(1.57)**
Outside Blockholder [25%]	-0.012	0.013	-0.0059	-0.021**	-0.022	-0.023**	-0.031	-0.0070	-0.025
	(-0.69)	(0.55)	(-0.35)	(-2.36)	(-1.33)	(-2.18)	(-1.55)	(-0.25)	(-1.30)
Firm Size [Ln Assets]	0.032***	0.077***	0.040***	0.0044	0.0089	0.0031	0.027***	0.082***	0.036***
	(5.71)	(5.06)	(7.75)	(1.32)	(0.83)	(1.04)	(4.71)	(4.12)	(6.57)
Voting-Cashflow Wedge	0.048*	-0.012	0.019	-0.020	-0.023	-0.018	0.037	-0.012	0.015
	(1.75)	(-0.38)	(0.73)	(-1.48)	(-1.44)	(-1.35)	(1.25)	(-0.34)	(0.52)
Book Leverage	-0.059**	-0.042	-0.056**	-0.056***	-0.023	-0.050***	-0.11***	-0.054	-0.10***
	(-2.00)	(-1.11)	(-1.98)	(-2.74)	(-0.78)	(-3.00)	(-3.04)	(-1.22)	(-3.17)
Firm Specific Risk	-0.22***	-0.12***	-0.17***	-0.013	0.0023	-0.0099	-0.31***	-0.13***	-0.23***
	(-4.24)	(-4.72)	(-4.45)	(-0.72)	(0.12)	(-0.60)	(-8.92)	(-4.07)	(-7.79)
Firm Age [Ln]	0.014*	-0.014	0.018**	-0.0047	0.047**	-0.0040	0.0078	-0.011	0.010
	(1.68)	(-0.52)	(2.27)	(-1.15)	(2.03)	(-0.87)	(0.85)	(-0.31)	(1.14)
Market-to-Book	-0.000050	0.00023	0.00010	-3.4e-06	0.00020***	0.000079	-0.00013	0.00042**	0.00012
	(-0.24)	(1.60)	(0.76)	(-0.047)	(2.89)	(1.54)	(-0.61)	(2.19)	(0.64)
Accounting Standard	0.079***	0.062***	0.067***	-0.019	-0.013	-0.015	0.050**	0.057**	0.043**
	(3.80)	(2.67)	(3.50)	(-1.45)	(-1.13)	(-1.38)	(2.15)	(2.16)	(2.02)
Mean Industry Level	0.80***	0.90***	0.82***	0.96***	1.14***	1.04***	0.85***	0.89***	0.86***
	(7.67)	(7.33)	(7.60)	(4.47)	(4.87)	(4.64)	(7.21)	(7.04)	(7.35)
Observations	3833	3833	3833	3246	3246	3246	3246	3246	3246
Adj. R-square	0.25	0.50	0.25	0.048	0.31	0.055	0.19	0.45	0.19
Model	OLS	FE	RE	OLS	FE	RE	OLS	FE	RE

A detailed description of the variables can be found in table Appendix 1. OLS is a pooled OLS regression model, FE is a firm-fixed effects panel model and RE is a random-effects panel model. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2010).

Table Appendix 12: Payout Policy: Family Ownership and Management (Ratio)

Model	I a	I b	I c	II a	II b	II c	III a	III b	III c
	Dividend Payout Ratio			Share Rep. Payout Ratio			Total Payout Ratio		
Family Ownership	0.057***	0.067**	0.056***	0.019	0.0055	0.016	0.071***	0.049	0.060***
	(2.71)	(2.46)	(2.96)	(1.40)	(0.22)	(1.09)	(3.04)	(1.50)	(2.75)
Family Management	0.0011	0.024	0.0078	-0.010	-0.0053	-0.0084	-0.017	0.017	-0.0033
	(0.048)	(0.71)	(0.38)	(-0.74)	(-0.19)	(-0.54)	(-0.67)	(0.37)	(-0.13)
Outside Blockholder [25%]	-0.0070	0.019	0.00040	-0.020**	-0.021	-0.022**	-0.028	-0.00085	-0.019
	(-0.38)	(0.81)	(0.023)	(-2.27)	(-1.28)	(-2.10)	(-1.38)	(-0.031)	(-1.02)
Firm Size [Ln Assets]	0.032***	0.075***	0.040***	0.0042	0.0081	0.0030	0.027***	0.080***	0.036***
	(5.75)	(5.01)	(7.77)	(1.26)	(0.76)	(1.00)	(4.64)	(4.02)	(6.51)
Voting-Cashflow Wedge	0.045	-0.013	0.017	-0.022	-0.023	-0.019	0.031	-0.011	0.012
	(1.63)	(-0.39)	(0.66)	(-1.59)	(-1.38)	(-1.40)	(1.07)	(-0.30)	(0.43)
Book Leverage	-0.059*	-0.042	-0.055*	-0.056***	-0.022	-0.050***	-0.11***	-0.052	-0.10***
	(-1.95)	(-1.14)	(-1.93)	(-2.69)	(-0.74)	(-2.97)	(-2.91)	(-1.19)	(-3.08)
Firm Specific Risk	-0.22***	-0.12***	-0.17***	-0.012	0.0013	-0.0098	-0.30***	-0.13***	-0.22***
	(-4.27)	(-4.74)	(-4.49)	(-0.69)	(0.067)	(-0.60)	(-8.77)	(-4.13)	(-7.71)
Firm Age [Ln]	0.014	-0.0083	0.018**	-0.0051	0.048**	-0.0042	0.0064	-0.0063	0.0094
	(1.59)	(-0.31)	(2.21)	(-1.23)	(2.01)	(-0.91)	(0.71)	(-0.17)	(1.06)
Market-to-Book	-0.000057	0.00022	0.000099	9.7e-07	0.00020***	0.000081	-0.00012	0.00042**	0.00013
	(-0.28)	(1.56)	(0.74)	(0.014)	(2.87)	(1.57)	(-0.51)	(2.18)	(0.69)
Accounting Standard	0.077***	0.061***	0.066***	-0.020	-0.013	-0.016	0.046**	0.058**	0.042*
	(3.71)	(2.66)	(3.46)	(-1.53)	(-1.11)	(-1.42)	(1.97)	(2.18)	(1.95)
Mean Industry Level	0.80***	0.90***	0.82***	0.96***	1.14***	1.04***	0.86***	0.89***	0.87***
	(7.66)	(7.32)	(7.60)	(4.47)	(4.88)	(4.65)	(7.28)	(7.06)	(7.40)
Observations	3833	3833	3833	3246	3246	3246	3246	3246	3246
Adj. R-squared	0.25	0.5	0.25	0.049	0.31	0.056	0.19	0.45	0.19
Model	OLS	FE	RE	OLS	FE	RE	OLS	FE	RE

A detailed description of the variables can be found in table Appendix 1. OLS is a pooled OLS regression model, FE is a firm-fixed effects panel model and RE is a random-effects panel model. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2010).

Table Appendix 13: Payout Policy: Founder-controlled vs. Real Family Firms (Ratio)

Model	I a	I b	I c	II a	II b	II c	III a	III b	III c
	Dividend Payout Ratio			**Share Rep. Payout Ratio**			**Total Payout Ratio**		
Founder-Controlled Firm	0.026	0.039	0.029	-0.0027	-0.035	-0.0094	0.024	-0.010	0.018
	(1.18)	(1.16)	(1.42)	(-0.20)	(-1.06)	(-0.61)	(0.96)	(-0.21)	(0.73)
Real Family Firm	0.048**	0.059	0.050**	0.0095	0.0037	0.013	0.049*	0.032	0.050*
	(1.97)	(1.39)	(2.12)	(0.78)	(0.12)	(0.92)	(1.93)	(0.56)	(1.85)
Outside Blockholder [25%]	-0.012	0.013	-0.0055	-0.021**	-0.021	-0.023**	-0.030	-0.0058	-0.024
	(-0.67)	(0.56)	(-0.32)	(-2.35)	(-1.27)	(-2.14)	(-1.54)	(-0.21)	(-1.26)
Firm Size [Ln Assets]	0.032***	0.076***	0.039***	0.0042	0.0090	0.0028	0.027***	0.082***	0.036***
	(5.68)	(5.04)	(7.72)	(1.24)	(0.83)	(0.90)	(4.67)	(4.13)	(6.48)
Voting-Cashflow Wedge	0.046*	-0.012	0.018	-0.021	-0.024	-0.019	0.034	-0.013	0.013
	(1.68)	(-0.38)	(0.69)	(-1.58)	(-1.43)	(-1.45)	(1.17)	(-0.35)	(0.46)
Book Leverage	-0.059**	-0.041	-0.056**	-0.056***	-0.023	-0.050***	-0.11***	-0.053	-0.10***
	(-1.99)	(-1.10)	(-1.97)	(-2.72)	(-0.76)	(-3.00)	(-3.03)	(-1.21)	(-3.15)
Firm Specific Risk	-0.22***	-0.12***	-0.17***	-0.012	0.0029	-0.0091	-0.31***	-0.13***	-0.22***
	(-4.26)	(-4.77)	(-4.48)	(-0.69)	(0.15)	(-0.56)	(-8.91)	(-4.06)	(-7.79)
Firm Age [Ln]	0.014	-0.015	0.017**	-0.0052	0.047**	-0.0049	0.0069	-0.012	0.0089
	(1.58)	(-0.54)	(2.17)	(-1.23)	(2.02)	(-1.05)	(0.74)	(-0.32)	(0.99)
Market-to-Book	-0.000054	0.00022	0.000100	-2.6e-06	0.00020***	0.000079	-0.00013	0.00041**	0.00012
	(-0.26)	(1.56)	(0.74)	(-0.037)	(2.92)	(1.55)	(-0.60)	(2.18)	(0.65)
Accounting Standard	0.077***	0.061***	0.065***	-0.020	-0.013	-0.017	0.047**	0.057**	0.041*
	(3.73)	(2.66)	(3.44)	(-1.55)	(-1.15)	(-1.52)	(2.03)	(2.14)	(1.91)
Mean Industry Level	0.80***	0.90***	0.82***	0.97***	1.14***	1.04***	0.85***	0.90***	0.87***
	(7.67)	(7.32)	(7.59)	(4.47)	(4.88)	(4.65)	(7.23)	(7.04)	(7.36)
Observations	3833	3833	3833	3246	3246	3246	3246	3246	3246
Adj. R-square	0.25	0.5	0.25	0.048	0.32	0.055	0.19	0.45	0.19
Model	OLS	FE	RE	OLS	FE	RE	OLS	FE	RE

A detailed description of the variables can be found in table Appendix 1. OLS is a pooled OLS regression model, FE is a firm-fixed effects panel model and RE is a random-effects panel model. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2010).

Table Appendix 14: Diversification: Geographical Diversification

Model	I a	I b	I c	II a	II b	II c	III a	III b	III c
Family Firm	-0.031	-0.035	-0.10						
	(-0.86)	(-0.98)	(-0.48)						
Family Ownership				-0.042	-0.067	0.13			
				(-1.01)	(-1.61)	(0.56)			
Family Management				-0.020	0.023	-0.56			
				(-0.33)	(0.30)	(-1.51)			
Founder-controlled Firm							-0.056	-0.058	-0.45*
							(-1.19)	(-1.31)	(-1.71)
Real Family Firm							-0.018	-0.017	0.23
							(-0.49)	(-0.42)	(0.83)
Outside Blockholders	-0.070*	-0.076	-0.95***	-0.082*	-0.088*	-1.02***	-0.071*	-0.075	-0.95***
	(-1.66)	(-1.51)	(-3.88)	(-1.88)	(-1.67)	(-3.91)	(-1.68)	(-1.50)	(-3.70)
Firm Size [Ln]	0.057***	0.052***	0.30***	0.055***	0.050***	0.30***	0.056***	0.052***	0.29***
	(6.60)	(5.35)	(5.18)	(6.31)	(5.09)	(5.20)	(6.56)	(5.30)	(5.13)
Accounting Standard	-0.13***	-0.25***	-0.63***	-0.13***	-0.25***	-0.62***	-0.13***	-0.25***	-0.70***
	(-4.18)	(-4.77)	(-3.21)	(-4.20)	(-4.80)	(-3.17)	(-4.26)	(-4.84)	(-3.56)
Tangible Assets Ratio	-0.48***	-0.48***	-2.52***	-0.48***	-0.48***	-2.49***	-0.49***	-0.49***	-2.63***
	(-5.78)	(-4.97)	(-4.46)	(-5.70)	(-4.96)	(-4.35)	(-5.86)	(-5.01)	(-4.74)
Market Leverage	-0.027	0.0028	0.61*	-0.029	-0.0025	0.66*	-0.032	0.00070	0.54
	(-0.41)	(0.039)	(1.70)	(-0.45)	(-0.035)	(1.80)	(-0.48)	(0.0098)	(1.50)
Payout Ratio	-0.014	-0.077	-0.16	-0.013	-0.078	-0.12	-0.014	-0.073	-0.16
	(-0.48)	(-1.29)	(-0.73)	(-0.45)	(-1.30)	(-0.55)	(-0.49)	(-1.22)	(-0.72)
Profitability	-0.026	0.080	0.58*	-0.025	0.080	0.60**	-0.033	0.070	0.51*
	(-0.39)	(0.85)	(1.92)	(-0.38)	(0.85)	(2.00)	(-0.50)	(0.74)	(1.70)
Market-to-Book	-0.00082**	-0.0029*	-0.0062***	-0.00082**	-0.0029*	-0.0064***	-0.00082**	-0.0030*	-0.0065***
	(-2.50)	(-1.69)	(-3.05)	(-2.46)	(-1.72)	(-3.22)	(-2.58)	(-1.72)	(-2.86)
Voting-Cashflow Wedge	0.020	0.013	-0.21	0.020	0.0084	-0.20	0.018	0.0091	-0.24
	(0.53)	(0.27)	(-0.71)	(0.52)	(0.18)	(-0.65)	(0.48)	(0.19)	(-0.79)
Firm Specific Risk [Ln]	0.022	0.032	0.16	0.022	0.016	0.23	0.022	0.032	0.14
	(0.32)	(0.30)	(0.38)	(0.31)	(0.15)	(0.58)	(0.31)	(0.29)	(0.33)
Firm Age [Ln]	0.041**	0.046**	0.18	0.040**	0.045**	0.20*	0.038**	0.043**	0.12
	(2.35)	(2.44)	(1.57)	(2.30)	(2.42)	(1.75)	(2.16)	(2.24)	(1.02)
Observations	1694	1694	1694	1694	1694	1694	1694	1694	1694
Adj. / Pseudo R-squared	0.34	0.36	0.33	0.34	0.36	0.33	0.34	0.36	0.34
Model	OLS	BE	Probit	OLS	BE	Probit	OLS	BE	Probit

The dependent variable is models a and b is GEOGRAPHICAL DIVERSIFICATION and in model c GEOGRAPHICAL DIVERSIFICATION [DUMMY]. A detailed description of the variables can be found in table Appendix 1. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.
Source: Own work based on Schmid et al. (2008).

Table Appendix 15: Diversification: Founder-controlled Firms vs. Real Family Firms

Model	I a	I b	I c	II a	II b	II c	III a	III b	III c
	Total			Related			Unrelated		
Founder-controlled Firm	-0.063	-0.086	-0.19	0.0047	-0.023	-0.088	-0.068	-0.063	-0.25
	(-1.11)	(-1.57)	(-1.00)	(0.12)	(-0.58)	(-0.43)	(-1.46)	(-1.42)	(-1.30)
Real Family Firm	-0.056	-0.082	-0.18	0.035	0.0063	0.12	-0.091**	-0.089**	-0.27
	(-1.02)	(-1.52)	(-1.03)	(0.76)	(0.16)	(0.63)	(-2.06)	(-2.02)	(-1.64)
Outside Blockholders	-0.074	-0.12*	-0.34	0.042	0.044	0.020	-0.12**	-0.16***	-0.51**
	(-1.24)	(-1.78)	(-1.63)	(0.92)	(0.91)	(0.10)	(-2.20)	(-3.00)	(-2.56)
Firm Size [Ln]	0.058***	0.051***	0.091**	0.029***	0.020**	0.13***	0.030***	0.031***	0.068*
	(4.39)	(3.92)	(2.22)	(2.82)	(2.15)	(3.41)	(2.72)	(2.96)	(1.81)
Accounting Standard	-0.074*	-0.14**	-0.22	-0.026	-0.074	-0.025	-0.049	-0.067	-0.13
	(-1.67)	(-2.12)	(-1.58)	(-0.72)	(-1.56)	(-0.18)	(-1.37)	(-1.25)	(-1.02)
Tangible Assets Ratio	0.25**	0.22*	1.52***	0.19**	0.15*	0.88**	0.065	0.072	0.57
	(2.21)	(1.80)	(3.94)	(2.06)	(1.72)	(2.28)	(0.70)	(0.72)	(1.54)
Market Leverage	0.052	0.078	0.26	-0.066	-0.018	-0.16	0.12*	0.096	0.49*
	(0.63)	(0.83)	(0.98)	(-1.03)	(-0.27)	(-0.55)	(1.68)	(1.27)	(1.81)
Payout Ratio	-0.014	0.020	-0.15	-0.0028	0.0015	-0.12	-0.011	0.019	-0.069
	(-0.31)	(0.25)	(-1.05)	(-0.092)	(0.026)	(-0.88)	(-0.32)	(0.29)	(-0.52)
Profitability	-0.050	-0.066	-0.10	-0.089*	-0.12	-0.45*	0.038	0.052	0.035
	(-0.80)	(-0.60)	(-0.39)	(-1.75)	(-1.51)	(-1.78)	(0.76)	(0.58)	(0.13)
Market-to-Book	-0.00062*	-0.0017	-0.0023	-0.00017	0.00073	-0.00015	-0.00045	-0.0025	-0.0020
	(-1.70)	(-0.87)	(-1.38)	(-0.85)	(0.51)	(-0.095)	(-1.38)	(-1.52)	(-0.98)
Voting-Cashflow Wedge	-0.038	-0.043	-0.011	-0.026	0.015	-0.037	-0.012	-0.058	-0.10
	(-0.71)	(-0.71)	(-0.067)	(-0.59)	(0.34)	(-0.21)	(-0.29)	(-1.18)	(-0.65)
Firm Specific Risk [Ln]	-0.13	-0.15	-0.39	-0.067	-0.099	-0.77**	-0.066	-0.049	-0.044
	(-1.27)	(-0.84)	(-1.11)	(-0.95)	(-0.79)	(-2.01)	(-0.78)	(-0.34)	(-0.13)
Firm Age [Ln]	-0.011	-0.0029	-0.00039	0.015	-0.000033	0.037	-0.026	-0.0029	-0.044
	(-0.43)	(-0.12)	(-0.0047)	(0.84)	(-0.0019)	(0.45)	(-1.11)	(-0.14)	(-0.55)
Observations	1832	1832	1832	1832	1832	1832	1832	1832	1832
Adj. / Pseudo R-squared	0.16	0.17	0.10	0.12	0.086	0.10	0.15	0.17	0.10
Model	OLS	BE	Probit	OLS	BE	Probit	OLS	BE	Probit

A detailed description of the variables can be found in table Appendix 1. OLS is a pooled OLS regression model and BE is a between-firm effects panel model panel model. Time and industry dummies and a constant are included. The calculation of the standard errors and the regression methods are explained in section 4.4.1. T-statistics are presented in parentheses. ***, ** and * indicate significance on the 1%-, 5%- and 10%-level.

Source: Own work based on Schmid et al. (2008).

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