Value of Control in Family Firms: Evidence from Mergers and Acquisitions

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This article studies European acquisitions in the period 1990-2013 to examine the relationship between family ownership and the propensity to undertake diversifying acquisitions. We show that family firms, especially those highly leveraged, tend to make more cross-industry acquisitions as this allows the owners to effectively diversify their wealth without selling their shares. Our results also indicate that family firms that value control high (i.e., family firms with high leverage) appear not to diversify at the detriment of minority shareholders. (JEL: G34)

Keywords: family firms; leverage; control motives; acquisitions

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I. Introduction

Families are the most common type of controlling blockholder around

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the world, even when we consider publicly listed firms (La Porta, Lopez-de-Silanes and Shleifer, 1999; Faccio and Lang, 2002). Despite a vast literature on the effect of family ownership on firm value and performance (see, e.g., Barontini and Caprio, 2006; Maury, 2006; Sraer and Thesmar, 2007; Andres, 2008; Franks et al., 2012 for Europe; Anderson and Reeb, 2003a; Villalonga and Amit, 2006; Miller et al., 2007 for the United States; Claessens et al., 2002 for Asia; Lins, Volpin and Wagner, 2013 at international level), the implications of family ownership on financial choices and their effects have received limited attention (see, e.g., Anderson and Reeb, 2003b; Ellul, 2008; and Croci, Doukas and Gonenc, 2011).[1]

Families are blockholders known to be particularly attached to their firms, because they are often in position to extract both pecuniary and non-pecuniary private benefits of control (Barclay and Holderness, 1989; Demsetz and Lehn, 1985). They are more emotionally and financially tied to their companies and are often directly involved in managing the firm's resources. For these reasons, families are deemed to have a long-term commitment towards their own firms, which sometimes span several generations. They do not solely view their firms in terms of cash flows to be consumed but also as an asset to pass on to future generations (Becker, 1981; Casson, 1999; Chami, 1999; James, 1999; Bertrand and Schoar, 2006; Tsoutsoura, 2015). Using Bertrand and Schoar (2006) words, families provide "patient capital" to their firms, which put them in position to make decisions that maximize long-run returns. Even if families often own under-diversified portfolios because of the large investment in the family business, family firms experience less diversification than non-family firms (Anderson and Reeb, 2003b). Faccio, Marchica and Mura (2011) document that when ownership is concentrated and personal wealth is tied up in the family business, risky investments beyond the firm's range of expertise and knowledge is less likely undertaken.

Control motives of family blockholders influence financing decisions: the firm's capital structure might reflect this specific attitude toward control because control motives are directly linked to shareholding and debt structure decisions of the firm. Since families value control so highly, they are reluctant to relinquish or even reduce it by funding new investments with new equity issues (Harris and Raviv, 1988; Israel, 1991). Stulz (1988) observes that the mix of equity and debt financing is important due to its effect on the distribution of voting

1. Anderson and Reeb (2003a) and Holderness (2009) provide evidence that family firms are also diffuse in the United States.

rights. Therefore, families may rely on debt financing to maintain ownership level and voting power. Empirical evidence supports this hypothesis: families have indeed a preference for issuing non-diluting securities (i.e. debt) to fund new investments, leading their firms to be more leveraged than non-family firm (Ellul, 2008; Croci, Doukas and Gonenc, 2011).[2] This preference to rely on debt to avoid dilution could induce family firms to carry out diversifying acquisitions to stabilize the firm's cash-flows and minimize the likelihood of financial distress.

Using leverage as a proxy for the family owner's attitude toward control, we investigate and test the relationship between investment decisions and financial structures in different type of firms. The category of investment decisions chosen for this study is the acquisition activity of firms, one of the most important decisions in a company's life. Family blockholders with strong control motives might be reluctant to sell their shares and to use these cash proceeds to undertake different investment opportunities to diversify away from their business. As a result, the only means to diversify their wealth, which is for the most part tied up in the business, is the diversification of the business itself. Therefore, this study tests the propensity of carrying out cross-industry acquisition investment for family firms and non-family firms respectively, conditional on leverage. Given their commitment to the firm, both monetary and emotional, we can expect that family owners will show a higher propensity for cross-industry investments when their firms' leverage is high than non-family firms.

Our sample includes all mergers and acquisitions announced over the period 1990-2013 by European firms. We show that family firms with high leverage tend to make more diversifying acquisitions, since family blockholders do not want to sell shares and hence lose control, but at the same time would like to diversify their personal wealth which is tied up in the business (Miller, Le Breton-Miller and Lester, 2010; May, 1995). This result supports the implication of Ellul (2008) that high leverage in family firms signals strong control motives of the owners (i.e., family blockholders value control high). We also provide evidence that the cross-industry investments of family firms whose blockholders attach a high value to control are not at the expense of

2. One representative firm example for this policy of debt financing in order to avoid control dilution is the international media company Bertelsmann, a German family-owned firm since 1835. In 2001 Groupe Bruxelles Lambert (GBL) took a 25.1% stake in Bertelsmann. Five years later Bertelsmann was issuing debt and accepting a doubling of its existing leverage ratio in order to buy back GBL's stake for $5.75 billion (even overpaying) to prevent its public listing (The Economist, 2006).

minority shareholders.

This paper adds to the literature devoted to the investment decisions of family firms (see, e.g., Klasa, 2007; Bauguess and Stegemoller, 2008; Sraer and Thesmar, 2007; Caprio, Croci and Del Giudice, 2011; Miller, Le Breton-Miller and Lester, 2010). The paper builds on the notion that the attitude toward control of the main shareholder shapes the firm investment policy via the firm's financing decisions. We provide evidence that family owners with high control motives, captured by the firm's leverage ratio, tend to diversify their firm through cross-industry takeovers. This finding is consistent with Miller, Le Breton-Miller and Lester (2010), in which the authors document that the propensity to make diversifying acquisitions increases with the level of family ownership. We extend Miller, Le Breton-Miller and Lester (2010) result along two dimensions: (i) we document when family owners launch more diversifying acquisitions, i.e. when they have high levels of debt; (ii) we also show that diversifying acquisitions are not detrimental to minority shareholders for levered family firms whose owners are unlikely to relinquish control.

The remaining part of this article is structured as follows. Section II is devoted to the literature review and the development of the hypotheses. Section III describes the sample and documents the data sources. Section IV presents the empirical results. Finally, Section V concludes.

II. Literature review and hypothesis development

A. Literature review

The economic relevance of family firms is widely discussed in the economic literature. Since Berle and Means (1932) conceptualized the modern corporation, particular attention of the finance academic community has been devoted to widely held corporations. In reality, however, only a minority of firms are actually widely held. Most of them are controlled either by families or public institutions (La Porta, Lopez-de-Silanes and Shleifer, 1999; Faccio and Lang, 2002). Alderson (2011) reports that 70%-80% of all businesses in Europe are owned or controlled by families. Whereas in the United Kingdom and Ireland widely held firms are more important, family controlled firms are more

common in Continental Europe (Faccio and Lang, 2002).[3] Strong emotional ties, provision of patient capital, orientation towards sustainable growth and promotion of long-term stability are just few characteristics which are attributed to family firms (Ampenberger et al., 2009; Achleitner et al., 2010).

The relevance of family firms for the prosperity and economic development of nations is not negligible. Family firms were one of the most important sources of start-up capital and drivers of new job creation (Chrisman, Chua and Steier, 2003). Furthermore, several studies indicate that family firms achieve superior financial performance compared to non-family firms and this both in terms of operating performance and stock market performance (see, e.g., McConaughy, Matthews and Fialko, 2001; Anderson and Reeb, 2003a; Barontini and Caprio, 2006; Jaskiewicz, 2006; Villalonga and Amit, 2006; Sraer and Thesmar, 2007).

Table 1 presents the largest family firms in Europe with annual sales over €25 billion and the officially reported stakes of the families. The table shows that several famous companies are actually family-owned and characterized by large revenues and workforce.

Ownership concentration might be able to diminish agency conflicts between firm management and shareholders. This is known as the "alignment effect" in agency theory (Jensen and Meckling, 1976; Demsetz and Lehn, 1985). Firm survival is extremely important to families, especially in order to preserve their reputation as well as their legacy to future generations of the family. They are interested in maximizing long-term value, investing efficiently and passing the firm in a good shape onto next generations (Becker, 1981; Casson, 1999; Chami, 1999; James, 1999). Regarding investment decisions, family blockholders are better at scrutinizing M&A opportunities and preventing value destroying transactions. Several articles document that family firms are indeed more careful acquirers than their non-family counterparts (see, e.g., Ben-Amar and Andre, 2006, for the Canadian market; Basu, Dimitrova and Paeglis, 2009, and Adhikari, 2013, for the US market; Sraer and Thesmar, 2007, and Bouzgarrou and Navatte, 2013, for the French market).

However, there is also a well-known dark side of family ownership:

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3. This might also be explained by the findings of Franks et al. (2012) who suggest that family firms are more likely to survive in countries with less developed financial markets, weak investor protection and low M&A activity which are prevalent in Continental Europe.

TABLE 1. Europe's largest family firms

Sales rank	Company	Headquarter	Description	Sales (2013, EUR)	Employees (2013)	Percentage of family control
1	Volkswagen	Wolfsburg, Germany	Car manufacturer	197 bn	573,000	Family Piëch and Porsche hold together 32% (51%) of shares (voting rights)
2	Fiat S.p.A	Turin, Italy	Car manufacturer	87 bn	226,000	Agnelli family owns 30%
3	BMW	Munich, Germany	Car manufacturer	76 bn	110,000	Quandt family controls 47% of shares
4	Siemens	Berlin/Munich, Germany	Technology company	76 bn	362,000	Siemens family owns 6%
5	Carrefour	Boulogne-Billancourt, France	Retail company	75 bn	365,000	Halley family owns 13% of the shares and 20% of the voting rights
6	Schwarz Group	Neckarsulm, Germany	Retail company (Lidl, Kaufland)	74 bn	335,000	Dieter Schwarz owns 100%
7	Metro Group	Düsseldorf, Germany	Retail company	65 bn	269,000	Haniel family, Schmidt-Ruthenbeck family and Otto Beisheim own together 55%

(*Continued*)

TABLE 1. (Continued)

Sales rank	Company	Headquarter	Description	Sales (2013, EUR)	Employees (2013)	Percentage of family control
8	Aldi	Essen/Mühlheim (Ruhr), Germany	Retail company	62 bn (2012)	>100,000	fully controlled by Albrecht family through their foundations
9	Arcelor Mittal	Luxembourg	Steel company	58 bn	232,000	Mittal family owns >39% of the world's largest steel company
10	PSA Peugeot Citroën	Paris, France	Car manufacturer	54 bn	195,000	Peugeot family holds 42% of voting shares
11	Groupe Auchan	Croix (Nord), France	Retail company	48 bn	218,000	Mulliez family owns 84%
12	Robert Bosch Gmbh	Gerlingen, Germany	Electronics/ technology supplier	46 bn	281,000	Bosch family owns 7% of shares but family foundation owns 92% of the voting rights

(*Continued*)

TABLE 1. (Continued)

Sales rank	Company	Headquarter	Description	Sales (2013, EUR)	Employees (2013)	Percentage of family control
13	Banco Santander	Santander, Spain	Bank	40 bn	183,000	Botin family owns 2.5% (with Emilio Botin as chairman)
14	Hoffmann-La Roche	Basel, Switzerland	Pharmaceutical company	38 bn	85,000	Hoffmann family, Oeri family and Duschmale family own together > 45%
15	J Sainsbury	London Borough of Camden, United Kingdom	Retail company (and bank)	31 bn	157,000	Sainsbury family owns 35%
16	LVMH Moët Hennessy Louis Vuitton	Paris, France	Luxury goods	29 bn	115,000	Arnault family holds 46.5% of shares and 62.5% of voting rights
17	IKEA	Leiden, Netherlands (origin: Sweden)	Furniture manufacturer/ retailer	28 bn	135,000	controlled by Ingvar Kamprad and his family through Stichting INGKA foundation (100% owner)

Note: This table provides the list of Europe's largest family firms with annual sales over 25 billion EUR and officially reported shareholders.
Source: Adapted from Alderson (2011), information from 2013 financial reports of the individual companies.

with substantial ownership, controlling families have the incentive and power to take actions that benefit themselves at the expense of the minority shareholders when their interests diverge from those of other shareholders (the so-called "tunneling or expropriation effect") (Morck and Yeung, 2003; Bertrand and Schoar, 2006). They might be able to expropriate wealth from the firm through related-party transactions, excessive compensation, or special dividends and pursue actions that maximize their personal utility respectively amenities leading to suboptimal policies and poor firm performance (Fama and Jensen, 1985; DeAngelo and DeAngelo, 2000; Dyer, 2006). Indeed, some studies point also to the existence of diverging interests between family blockholders and minority shareholders, which can lead to agency conflicts in some acquisition context. For example, Claessens et al. (2002) find for several East Asian economies that in the presence of control-enhancing mechanisms such as pyramid structures and dual-class share structures the firm value declines when the control rights of the largest shareholder exceed its cash-flow ownership. This pattern has also been confirmed by Holmen and Nivorozhkin (2007) for Sweden. Bauguess and Stegemoller (2008) argue that family firms are deeply entrenched and find that they destroy shareholder value when they undertake M&A transactions.

There are studies reporting that family firms experience less diversification than non-family firms (Anderson and Reeb, 2003b), and that with increasing concentration of ownership and personal wealth that is tied up in the family business, risky investments beyond the firm's range of expertise and knowledge will be less likely undertaken (Faccio, Marchica and Mura, 2011). This results in less industry-diversified acquisitions (Fahlenbrach, 2009).[4] On the other hand, it can be observed that, especially in Continental Europe where the "insider financial system" dominates, family businesses are organized in form of pyramidal holding structures and family-controlled business groups (Masulis, Pham and Zein, 2011), which facilitate the internal financing of the family firm and the start-up of new diversifying businesses.

One can expect that family blockholders that attach a high value to control are interested in the sustainable, solid development of their firm in order to pass it over to next generations. For this purpose, they could

4. Fahlenbrach (2009) focuses more on pure CEO founder firms than on family firms in general.

tend to mitigate the firm-specific risk through diversifying acquisitions (Miller, Le Breton-Miller and Lester, 2010). Miller, Le Breton-Miller and Lester (2010) provide empirical evidence for the propensity of family firms to make diversifying acquisitions by analyzing the Fortune 1000 companies (largest 1000 US firms by revenues) over the period from 1996 to 2000. They argue that due to the family business owners' desire to keep a firm in the family for later generations and due to the fact that they cannot sell shares without losing control, the primary means by which families can avoid the concentration of their fortune within a single business is by diversifying the business itself.[5]

The desire of family blockholders to retain control in their business has also an impact on the method of payment of acquisitions and the price they pay for the target companies. Family owners tend to pay for acquisitions rather with cash than with stock in order to avoid dilution of their ownership and voting power and the creation of a new blockholder (Amihud, Lev and Travlos, 1990; Martin, 1996; Ghosh and Ruland, 1998; Faccio and Masulis, 2005; Caprio, Croci and Del Giudice, 2011). Pursuing long-term, sustainable investment strategies rather than myopic and detrimental ones, family firms are paying lower premiums in acquisition transactions showing again that there is no sign of expropriation of minority shareholders in family firms (Song, Ali and Pillay, 2008).

B. Hypothesis development

Most of the academic literature on family firms refers to the level of ownership when they aim at quantifying the importance of control in family firms. However, ownership alone could not be enough to fully capture control motives. Ellul (2008) and Croci, Doukas and Gonenc (2011) show that the desire of family blockholders to maintain control over their firms result in higher debt-equity ratios for these firms. The firm's capital structure and the underlying debt ratio might play an important role in affecting the type of acquisitions the firm is willing to conclude.

Family firms, in general, seem to be risk-averse and less diversified (Anderson and Reeb, 2003b; Faccio, Marchica and Mura, 2011;

5. May (1995) provides complementary results in the same direction. He finds that chief executive officers with more personal wealth vested in the firm's equity tend to diversify more in acquisitions than those who have a smaller participating stake.

Fahlenbrach, 2009). However, Miller, Le Breton-Miller and Lester (2010) show that family firms tend to make more diversifying acquisitions because family blockholders do not want to sell shares and lose control.[6] As a result, cross-industry diversifying deals represent an effective means to avoid concentration of family's wealth in a single line of business. This reasoning leads to our main testable hypothesis:

> Family firms with blockholders valuing control high (i.e. family firms with high leverage) are more likely to pursue cross-industry diversifying deals.

Major shareholders who value control prefer financing investments by debt or cash rather than by issuing new stock as equity financing can dilute their voting power and increases the risk of losing control (see, e.g., Harris and Raviv, 1988; and Stulz, 1988). Amihud, Lev and Travlos (1990) examined the relation between corporate control and the means of financing of corporate acquisitions. They found that the use of cash financing is more likely, the larger the managerial ownership fraction of the acquiring firm and the more important the preserving control to bidder management. Similar results are provided by Faccio and Masulis (2005) and Caprio, Croci and Del Giudice (2011) who show that family firms prefer cash financing as payment method in merger and acquisition deals, especially when the continued voting control of their dominant shareholders is threatened. We, therefore, expect that the positive relation between "family owners that value control high (proxied by the firm's leverage)" and "cross-industry diversifying acquisitions" is more pronounced for cash-financed deals.

III. Sample, variables, and descriptive statistics

A. Definition of family firms

In the academic literature there are usually three main criteria which constitute the definition of family firms: (i) the proportion of ownership allocated to the family, (ii) the involvement of the family in board positions, and (iii) the corporate culture (family commitment towards the business).

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6. May (1995) offers a similar explanation for acquisitions carried out by managers.

Based on these criteria, several types of family firm definitions have been used in the past. Concerning listed companies, two main definitions are currently dominating the academic literature that focuses primarily on the ownership and control criteria: the founding family definition and the ultimate ownership definition.

The founding family definition takes into account whether the founding family of a company and its relatives hold certain percentages of voting rights of that particular company and/or whether the family members are represented in controlling bodies such as the board of directors (Anderson and Reeb, 2003a; Villalonga and Amit, 2006; Sraer and Thesmar, 2007; Andres, 2008). Depending on the corporate governance structures of the various countries, different ownership threshold values apply in order to exercise a significant controlling influence on the company (usually 5% in the US whereas in Continental Europe higher values are applicable, such as 20% in France and 25% in Germany, i.e. 25% of ownership are required in Germany in order to be able to block certain decisions in shareholder meetings).

The ultimate ownership definition does not consider the fact whether a family or private person has founded the company but whether they hold a controlling ownership stake (La Porta, Lopez-de-Silanes and Shleifer, 1999; Faccio and Lang, 2002). In that case the entire ownership structure including any complex pyramidal shareholder and cross equity investments are screened in order to examine whether there exists a controlling shareholder. If this shareholder represents a family or private person, then the respective company meets the definition requirement of a family firm regardless of whether the shareholder was involved in the firm foundation or not.

The definitions above are classified as dichotomous since they categorize the companies as either family or non-family firms. Astrachan, Klein and Smyrnios (2002) propose a continuous measure for family influence on a company. They compile an index of family influence on power, experience, and culture (F-PEC index). Power refers to the ownership and management positions of the family. Experience accounts for the age of the company and the number of family generations, and culture focuses on the degree of family commitment towards their business. The culture criterion is quite difficult to be measured objectively. It might be captured by qualitative research approaches such as questionnaires.

A further approach to define family firms and to measure the influence of family on the company in a continuous manner has been

presented by Klein (2000, 2004) under the concept of substantial family influence where she refers to the following components: the percentage family share of the company's equity capital, the percentage family share in top management positions of the company, and the percentage family share in the board of directors. The sum of all components needs to be equal to 100% in order to suffice the family definition, i.e. a lower share in one component can be compensated by a higher share in another component. However, the ownership share of the family shall never be 0%. This definition is classified as very stringent. Originally, it has been constructed for private, non-listed family firms where the family's ownership is rather concentrated. In case of listed family firms, the family's ownership is usually less concentrated due to the free-float of a certain portion of shares which are publicly held.

The substantial family influence method is only suitable for private firms and the culture subscale of F-PEC index is hardly quantifiable. Therefore, only the founding family and the ultimate ownership definition remain eligible for application to public firms (over 80% of the European company sample represent listed firms). The reason why we adopt the ultimate ownership definition as suggested by La Porta, Lopez-de-Silanes and Shleifer (1999) and Faccio and Lang (2002) is the existence of many companies in which the influence and involvement of family blockholders are as significant as in the role of founding families although they have not directly founded the company. Excluding family firms where the family blockholders do not belong to the group of founding members might therefore produce a misleading picture of significant family ownership influence.

Following Franks et al. (2012) a threshold level of 25% will be applied in this study for the ultimate ownership whereas ultimate ownership represents the control of voting rights.[7]

B. Description of sample and data sources

Ownership data for the European firms has been retrieved from Bureau van Dijk's database Amadeus that tracks also the shareholder's history of the companies. All reported public (listed and delisted) companies in Europe (40 different countries) have been considered if a valid company

7. La Porta, Lopez-de-Silanes and Shleifer (1999) as well as Faccio and Lang (2002) use a threshold level of 20%. Faccio and Masulis (2005) report that the level of voting power in the range of 20-60% is the range where the blockholders are most vulnerable to a loss of control. Hence, a threshold level of 25% is reasonable based on existing literature.

identifier such as SEDOL number was available. A company has been set as family firm if "one or more named individuals or families" are reported as ultimate ownership type whereas an ownership threshold level of 25% (percentage of voting rights) has been applied. The shareholder's histories of the respective companies have also been checked to make sure that the assigned ownership type is valid over the entire history of sample data. Table 2 gives an overview of the underlying firm sample distinguishing between family and non-family firms broken down on regional level including information on mean total assets and age of the companies in the different regions. In total, 10,031 firms have been identified with a clear assignable ownership type of which 31% represent family firms.[8] Across the entire dataset the results show that family firms are on average in Europe (statistically significant) younger than non-family firms and have also a smaller balance sheet. Family firms are most prevalent in France, Germany, and Eastern Europe.

To analyze the propensity for cross-industry diversification of family firms this study requires a sample of M&A transactions in which family and non-family firms are involved as bidders. We start with all mergers and acquisitions announced over the period 1990-2013 which have been reported in Thomson Reuters SDC M&A Database. The sample includes all transactions of a certain size (i.e., deal size greater than 1 million USD or larger than 1% of the acquirer's market capitalization) where the bidding firm is located in Europe (with no restriction on the target firm nationality) and where information is available on the ownership type of the bidder. This leads to the identification of 20,693 announced deals by our sample firms. The acquisition sample also includes minority deals. We kept minority deals in the sample because the intention behind diversification is not necessarily to have a controlling stake in the target firm but to diversify over several smaller stakes in different companies.

Table 3 presents an overview of the sample. On average in 17% of these deals family firms were involved as acquirers. The table also shows that in the years 2008, 2009, 2011 and 2013 the family firm portion in overall M&A activity was higher than usual.

To construct the relevant variables (dependent, key independent and

8. The percentage of family firms is not as high as referred to in the literature above since the sample includes only firms where a valid company identifier (SEDOL) is available and excludes a large number of private firms.

TABLE 2. Family firms by Country/Region

	Non-Family			Family			Full Sample		
Country/Region	N	Mean Tot.Ass.	Mean Age	N	Mean Tot. Ass.	Mean Age	N	Mean Tot. Ass.	Mean Age
Austria, Switzerland & Liechtenstein	289	4,058	46	98	770***	45	387	3,236	46
Benelux states	365	2,737	43	71	3,748	36	436	2,900	42
East Europe	1,988	794	31	1,280	203***	27***	3,268	563	29
France & Monaco	382	6,167	28	335	2,303**	31**	717	4,351	30
Germany	541	3,794	51	310	2,991	39***	851	3,506	47
Italy & Malta	171	6,571	39	121	1,015***	35	292	4,268	38
North Europe	887	1,505	29	170	744***	25***	1,057	1,382	29
Southeast Europe	565	497	41	296	190***	39	861	390	40
Spain & Portugal	279	4,202	43	140	962***	29***	419	3,119	38
UK & Ireland	1,471	2,474	26	272	778***	24	1,743	2,209	25
Total	6,938	2,272	34	3,093	960***	31***	10,031	1,868	33

Note: This table presents the underlying firm sample distinguishing between family and non-family firms broken down on regional level including information on mean total assets and age of the companies in the different countries. A firm is defined as family firm if its ultimate owner (at 25% threshold level) represents "one or more named individuals or families" according to Bureau van Dijk's database Amadeus. Total assets are reported in million USD (as of 2012) and age is given in years as the difference between founding date and 31st Dec 2013. ***, **, * denote the statistical significance at the 1%, 5% and 10% levels, respectively, for a (two-tailed) test of difference in means between family and non-family firms (with unequal variance). Eastern Europe includes the following countries: Bulgaria, Czech Republic, Moldova, Poland, Romania, Russian Federation, Slovakia, Ukraine. Northern Europe: Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway, Sweden. Southeastern Europe include the following countries: Albania, Bosnia and Herzegovina, Croatia, Cyprus, Greece, Kosovo, Macedonia, Montenegro, Serbia, Slovenia, Turkey.

TABLE 3. Merger and acquisition transactions

	All deals		Non-family acquirers		Family acquirers	
Year	N	% of total	N	% of year	N	% of year
1990	267	1.2%	237	89%	30	11%
1991	286	1.8%	254	89%	32	11%
1992	310	1.8%	280	90%	30	10%
1993	318	1.6%	270	85%	48	15%
1994	384	2.1%	321	84%	63	16%
1995	430	2.6%	370	86%	60	14%
1996	495	2.6%	427	86%	68	14%
1997	648	2.8%	553	85%	95	15%
1998	837	3.8%	689	82%	148	18%
1999	1,168	5.6%	954	82%	214	18%
2000	1,501	7.5%	1,258	84%	243	16%
2001	984	5.3%	812	83%	172	17%
2002	810	3.8%	668	82%	142	18%
2003	758	3.5%	625	82%	133	18%
2004	891	3.9%	736	83%	155	17%
2005	1,104	4.8%	929	84%	175	16%
2006	1,403	6.4%	1,174	84%	229	16%
2007	1,661	7.7%	1,368	82%	293	18%
2008	1,304	6.6%	1,042	80%	262	20%
2009	897	4.6%	701	78%	196	22%

(*Continued*)

TABLE 3. (Continued)

	All deals		Non-family acquirers		Family acquirers	
Year	N	% of total	N	% of year	N	% of year
2010	1,184	5.6%	977	83%	207	17%
2011	1,274	5.8%	1,021	80%	253	20%
2012	974	4.5%	810	83%	164	17%
2013	805	3.9%	643	80%	162	20%
Total	20,693	100%	17,119	83%	3,574	17%

Note: This table presents an overview of our merger and acquisition sample by year (where information is available on the ownership type of the bidder). The sample includes transactions announced during 1990-2013 and with a deal size greater than 1 million USD or larger than 1% of acquirer's market cap.

control variables) which will be described in the next section in more detail, we need apart from deal-relevant data reported in Thomson Reuters SDC also financial market/security prices and accounting data for the different companies involved in the merger and acquisition deals. The sources for these latter data are Thomson Reuters Datastream (for security prices) and Thomson Reuters Worldscope (for accounting data). For the empirical analysis yearly accounting data has accordingly been chosen as per year end prior to the date of deal announcement as only available information at announcement date can be used to test the influence on the transactions. In addition, all variables have been winsorized at 1st and 99th percentile to attenuate the effect of outliers on our analyses.

C. Definition of variables

A summary of the description of all variables used in this study can be found in the appendix.

Independent variables of interest

The goal of this study is to analyze the impact of the value of control in family firms on merger and acquisition transactions whereas the value of control is captured by the interaction between family firms and their leverage. Hence, the main key independent variable is represented by the interaction term respectively the product of the family dummy variable "FD" (taking the value of 1 if the ultimate owner represents "one or more named individuals or families" according to the database Amadeus, and 0 otherwise) and the firm's leverage ratio "Lev" (defined as the book value of the firm's debt divided by its total assets, as per year end prior to the M&A announcement). To examine the influence of the debt maturity, we additionally split the firm's leverage ratio into two components, namely the short-term debt "STdebt" and long-term debt "LTdebt" (defined as the book value of the firm's short-term respectively long-term debt divided by its total assets).

The interaction term between the family dummy and leverage ratio represents the main key independent variable of interest if the full sample is considered including family and non-family firms. Alternatively, the study also analyzes the subsample of family firms

alone. In that case the leverage itself represents the main independent variable of interest.[9]

Dependent variables

To explore the impact of value of control in family firms in the context of merger and acquisition decisions, we consider the following two dependent variables: (i) the propensity to undertake diversifying transactions and (ii) the bidder's stock performance associated with the corresponding transaction.

We use the dummy variable "CrossIndustry" in order to identify cross-industry deals. The variable takes the value of 1 if the bidder's and target firm's industry differ from each other based on the 2-digit Standard Industrial Classification (SIC) code, else it takes the value of 0.[10] To test our conjecture about the relation between control in family firms and cash-financed cross-industry deals, we modify the dummy variable to "CrossIndustryCash" which takes the value of 1 if the identified cross-industry deals are mainly financed with cash (i.e., at least 50% of the deal financing is cash), and 0 otherwise. To measure the bidder's performance, we rely on short term event study methodology and compute announcement cumulative abnormal returns (CAR_{Acq}). We use an event window of three days around the deal announcement date, as it is common in the M&A literature. Our results are qualitatively the same if we use a five-day event window (unreported). Following Brown and Warner (1980, 1985) who show that there is no significant difference between the market model and the standard beta one model (market adjusted returns), we apply the latter one where the abnormal returns represent the excess returns of the firm's stock against its benchmark (local market index).[11] Stock and index prices are from Datastream.

Control variables

To model the propensity to undertake cross-industry deals, we control

9. This study focuses on leverage to measure how much blockholders value control. Ellul (2008) shows namely that the firm's leverage ratio is able to substitute the wedge (i.e. the excess voting rights over cash flow rights).

10. Based on Herger and McCorriston (2014) the 2-digit SIC level excludes any bias of vertically integrated deals and is reasonable to separate diversified from non-diversified deals across industries (Miller, Le Breton-Miller and Lester, 2010).

11. Aktas, de Bodt and Roll (2004) show that there is no significant difference in the results between using local currencies or converting all prices into one common currency.

TABLE 4. Overview of descriptive statistics for the M&A sample

	All firms		Non-family firms		Family firms	
	Mean	N	Mean	N	Mean	N
Dependent variables						
Cross Industry	45.01%	20,693	45.62%	17,119	42.11%***	3,574
Cross Industry Cash	44.96%	18,347	45.74%	15,107	41.33%***	3,240
$Car_{Acq}[-1;1]$	1.06%	19,521	1.03%	16,195	1.22%*	3,326
Control variables						
Lev_{Acq}	22.34%	19,619	21.91%	16,226	24.42%***	3,393
$Ln(MV_{Acq})$	13.3436	18,835	13.4363	15,638	12.8900***	3,197
$RelSize_{Acq}$	18.94%	18,835	18.72%	15,638	20.03%	3,197
$(M/B)_{Acq}$	3.1346	18,821	3.1698	15,626	2.9624***	3,195
$TangAssest_{Acq}$	28.82%	19,542	29.37%	16,154	26.19%***	3,388
$Cash_{Acq}$	14.40%	19,634	14.30%	16,241	14.90%**	3,393
ROA_{Acq}	11.41%	19,338	11.41%	15,992	11.43%	3,346
$SalesGth_{Acq}$	31.70%	18,763	31.64%	15,506	31.99%	3,257
$Unlisted_{Tar}$	75.66%	20,693	76.21%	17,119	73.06%***	3,574
IntraBorder	54.87%	20,693	53.65%	17,119	60.72%***	3,574
$DivLevel_{Acq}$	1.5054	20,693	1.5103	17,119	1.4821**	3,574
$Stdebt_{Acq}$	7.02%	14,157	6.64%	11,558	8.69%***	2,599
$Ltdebt_{Acq}$	14.80%	14,157	14.78%	11,558	14.88%	2,599

Note: This table summarizes the descriptive statistics of the M&A sample where information is available on the ownership type of the bidder and where the size of the deal is over 1 million USD or larger than 1% of acquirer's market cap. Variable definitions are in appendix. ***, **, * denote the statistical significance at the 1%, 5% and 10% levels, respectively, for the (two-tailed) t-test of difference in means between family and non-family firms. Accounting variables represent values as per year end prior to the deal announcement. N denotes the number of observations.

following Miller, Le Breton-Miller and Lester (2010), among others, for the size of the firm (i.e., natural logarithm of the firm's market value of equity), for its growth opportunities (using both the firm's market-to-book ratio and sales growth), cash holding, degree of diversification, and operating performance (return on assets). Following the extant literature (see, e.g., Betton, Eckbo and Thorburn, 2008; Alexandridis, Petmezas and Travlos, 2010), in the abnormal return regressions we control, among others, for the bidder's market-to-book ratio, deal size, a dummy variable identifying stock deals, deal size, relative size of the transaction with respect to the bidder size and the listing status of the target.

D. Univariate analysis

Table 4 summarizes the descriptive statistics of the mergers and acquisitions deal sample. Family firms are slightly less inclined to announce cross-industry deals than their non-family counterparts, which is in line with some previous studies (Anderson and Reeb, 2003b; Faccio, Marchica and Mura, 2011; Fahlenbrach, 2009) reporting that family firms are in general more risk-averse and hence less diversified since cross-industry transactions might be regarded as risky investments due to the lack of synergies and relatedness between bidder's and target firm's activities.

In addition, the univariate results indicate that family firms create a slightly higher value through their acquisitions compared to non-family firms which has also been documented by Ben-Amar and Andre (2006), Basu, Dimitrova and Paeglis (2009), Sraer and Thesmar (2007) as well as Bouzgarrou and Navatte (2013) although the difference in announcement returns between family and non-family bidders are only marginally significant in our analysis. In addition, table 4 shows that (bidding) family firms have a higher leverage ratio than non-family firms which is consistent with the findings in Ellul (2008). Family firms tend to be also relatively smaller in comparison to non-family firms. They hold larger cash portions and pursue more domestic transactions (deals within one country and not cross-country) than non-family firms which is again a sign for risk-averse behavior.

IV. Empirical results

A. Cross-industry diversification

To explore the impact of the family blockholder's aspiration for control

on the propensity of cross-industry diversification in M&A deals, we conduct probit regressions in table 5 and present the results in three different panels. In all regressions the specification accounts for country, industry, and year fixed effects in order to control for time-invariant country and industry effects, as well as to account for time trend. The full sample includes family and non-family firms whereas the subsamples account for family and non-family firms separately. The samples include all merger and acquisition transactions (all deal types including minority deals). Accounting variables refer to the year-end prior to the date of deal announcement. Test statistics are calculated based on Huber/White robust standard errors. All ratios are winsorized at the 1st and 99th percentile to eliminate any outliers.

In Panel A of table 5 the dependent variable represents a dummy variable which identifies cross-industry deals (i.e. the variable takes the value of one if the acquirer and the target belong to different industries at 2-digit SIC code level, and zero otherwise). In the first four columns, we report the estimates of two different model specifications for the full sample. The coefficient estimate of the family dummy variable (FD_{Acq}) in the first model is negative and statistically significant. This result shows that family firms in our sample tend to do less diversifying merger and acquisition deals in comparison to non-family firms. The corresponding marginal effect reported in the second column indicates that the likelihood to undertake cross-industry deals is 2% lower for family firms in comparison to non-family firms. This finding is consistent to a large extent with previous literature (Anderson and Reeb, 2003b; Faccio, Marchica and Mura, 2011; Fahlenbrach, 2009) as family firms are regarded as risk-averse companies which avoid any risky investments. Cross-industry acquisitions can be risky due to the lack of knowledge and expertise of the bidding firm in that particular industry as well as lack of operating synergies.

In the second model specification, to account for the attitude toward control of the family shareholder, we add the interaction between the leverage ratio of the bidder and the family dummy ($Lev_{Acq} \times FD_{Acq}$). The interaction term is positive and statistically significant; indicating that the higher the leverage of the family firm, the more likely is cross-industry diversification. This result is consistent with our hypothesis: family firms with blockholders valuing control high (i.e, family firms with high leverage) are inclined to make more cross-industry diversifying acquisitions. Our finding is also supported by the (strongly statistically significant) positive leverage coefficient in

the family firm sub-sample. The motivation behind such cross-industry transactions are due to the fact that family blockholders valuing control high are reluctant to sell shares and lose control and that cross-industry diversifying deals are an effective mean to avoid concentration of family's wealth in one industry. Hence, such transactions can be explained by the control motives of the family blockholders and their aspiration to diversify their wealth.

The results in the second model specification for the full sample show in addition that that the likelihood to undertake cross-industry deals is 4.6% lower for non-levered family firms in comparison to levered family firms. With increasing leverage, the value of control and the desire to diversify becomes more important to family blockholders. If the leverage in family firms is higher than 42%, the overall proneness of family firms to cross-industry diversification is positive, indicating that only in highly levered family firms the blockholders are expected to value control high.[12]

Concerning the control variables, lower tangible assets, cash holdings, and profitability of the bidding firm are associated with higher cross-industry acquisition activity. It seems that firms which are not doing that well in their current core industry seek additional opportunities outside of their core business to compensate for. One can also see that diversified bidding firms are more likely to do cross-industry deals. While highly diversified firms may not have incentives to further diversify, they may also want to carry out acquisitions to strengthen their competitive positions in their non-primary industries which could explain the positive effect of the diversification proxy on the probability to complete a diversifying deal.[13]

Previous studies have shown that the desire of family blockholders to preserve control affects the method of payment in M&A transactions; bidding family firms tend to use rather cash than stocks to finance M&A deals, especially when the continued voting control of their dominant

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12. The analysis of family firms‘ leverage in our sample reveals that the third quartile and maximum leverage are 36.26% and 71.92%, respectively, which shows that the threshold result seems to be reasonable.

13. The firm's degree of diversification is defined as the number of industries (at 2-digit SIC codel level) in which the firm is active prior to deal announcement. Alternatively, we have also applied a different defini-tion based on the Herfindahl-Hirschman-Index with respect to the firm's sales in the individual industries it operates. The results are qualitatively similar and available upon request.

TABLE 5. Propensity for cross-industry diversification

	All firms				Family firms		Non–family firms	
Variables	Coef.	ME	Coef.	ME	Coef.	ME	Coef.	ME
A. Cross-industry diversification								
Lev_{Acq}	0.1322*	0.0522	0.0837	0.0331	0.3991**	0.1556	0.0680	0.0269
	(1.90)		(1.12)		(2.35)		(0.88)	
FD_{Acq}	–0.0501	–0.0198	–0.1169**	–0.0459				
	(–1.85)		(–2.45)					
$Lev_{Acq} \times FD_{Acq}$			0.2792*	0.1104				
			(1.69)					
$Ln(MV)_{Acq}$	–0.0003	–0.0001	–0.0005	–0.0002	–0.0036	–0.0014	–0.0006	–0.0002
	(–0.05)		(–0.09)		(–0.26)		(–0.11)	
$(M/B)_{Acq}$	0.0046*	0.0018	0.0048*	0.0019	0.0004	0.0001	0.0052*	0.0021
	(1.69)		(1.74)		(0.05)		(1.76)	
$TangAssets_{Acq}$	–0.4420***	–0.1747	–0.4380***	–0.1731	–0.8548***	–0.3332	–0.3690***	–0.1462
	(–8.39)		(–8.31)		(–6.09)		(–6.39)	
$Cash_{Acq}$	–0.3072***	–0.1214	–0.3039***	–0.1201	–0.3722**	–0.1451	–0.2932***	–0.1161
	(–3.97)		(–3.92)		(–2.02)		(–3.41)	
ROA_{Acq}	–0.3566***	–0.1410	–0.3532***	–0.1396	–0.3307	–0.1289	–0.3451***	–0.1367
	(–4.20)		(–4.16)		(–1.49)		(–3.72)	
$SalesGth_{Acq}$	0.0150	0.0059	0.0148	0.0058	0.0064	0.0025	0.0143	0.0057
	(1.46)		(1.44)		(0.23)		(1.29)	

(*Continued*)

TABLE 5. (Continued)

	All firms				Family firms		Non–family firms	
Variables	Coef.	ME	Coef.	ME	Coef.	ME	Coef.	ME
A. Cross-industry diversification								
$DivLevel_{Acq}$	0.1294***	0.0511	0.1292***	0.0511	0.1071***	0.0417	0.1346***	0.0533
	(11.17)		(11.15)		(3.61)		(10.55)	
Country, industry, and year FE	yes		yes		yes		yes	
Pseudo R^2	0.0494		0.0496		0.0762		0.0508	
Observations	17,885		17,885		3,037		14,828	
B. Cross-industry diversification Cash								
Lev_{Acq}	0.0938	0.0371	0.0385	0.0152	0.4362**	0.1691	0.0187	0.0074
	(1.25)		(0.48)		(2.38)		(0.22)	
FD_{Acq}	–0.0719**	–0.0283	–0.1482***	–0.0581				
	(–2.50)		(–2.90)					
$Lev_{Acq} \times FD_{Acq}$			0.3157*	0.1248				
			(1.80)					
$Ln(MV)_{Acq}$	0.0069	0.0027	0.0067	0.0027	0.0126	0.0049	0.0045	0.0018
	(1.23)		(1.20)		(0.84)		(0.73)	
$(M/B)_{Acq}$	0.0035	0.0014	0.0036	0.0014	–0.0025	–0.0010	0.0046	0.0018
	(1.11)		(1.16)		(–0.30)		(1.34)	
$TangAssets_{Acq}$	–0.4397***	–0.1738	–0.4355***	–0.1721	–0.9205***	–0.3570	–0.3523***	–0.1396
	(–7.85)		(–7.77)		(–6.09)		(–5.75)	
$Cash_{Acq}$	–0.3019***	–0.1193	–0.2970***	–0.1174	–0.3705*	–0.1437	–0.2776***	–0.1100
	(–3.50)		(–3.44)		(–1.85)		(–2.87)	

(*Continued*)

TABLE 5. (Continued)

	All firms				Family firms		Non–family firms	
Variables	Coef.	ME	Coef.	ME	Coef.	ME	Coef.	ME
B. Cross-industry diversification Cash								
ROA_{Acq}	–0.4192***	–0.1657	–0.4154***	–0.1642	–0.4562*	–0.1769	–0.3910***	–0.1549
	(–4.22)		(–4.18)		(–1.76)		(–3.59)	
$SalesGth_{Acq}$	0.0170	0.0067	0.0168	0.0066	0.0292	0.0113	0.0125	0.0050
	(1.39)		(1.38)		(0.95)		(0.94)	
$DivLevel_{Acq}$	0.1247***	0.0493	0.1244***	0.0492	0.0935***	0.0362	0.1307***	0.0518
	(10.34)		(10.31)		(3.02)		(9.83)	
Country, industry, and year FE	yes		yes		yes		yes	
Pseudo R^2	0.0496		0.0497		0.0819		0.0504	
Observations	16,011		16,011		2,754		13,237	
C. Cross-industry diversification with leverage split into short- and long-term debt								
$STdebt_{Acq}$	0.1771	0.0700	0.1262	0.0499	0.2392	0.0924	0.1789	0.0709
	(1.09)		(0.69)		(0.66)		(0.97)	
$LTdebt_{Acq}$	–0.0477	–0.0189	–0.1058	–0.0418	0.4504*	0.1740	–0.1577	–0.0625
	(–0.47)		(–0.97)		(1.84)		(–1.40)	
FD_{Acq}	–0.0693**	–0.0273	–0.1329**	–0.0521				
	(–2.18)		(–2.43)					
$STdebt_{Acq} \times FD_{Acq}$			0.2194	0.0868				
			(0.60)					

(*Continued*)

TABLE 5. (Continued)

	All firms				Family firms		Non–family firms	
Variables	Coef.	ME	Coef.	ME	Coef.	ME	Coef.	ME
C. Cross-industry diversification with leverage split into short- and long-term debt								
$LTdebt_{Acq} \times FD_{Acq}$			0.3011	0.1190				
			(1.39)					
$Ln(MV)_{Acq}$	–0.0136**	–0.0054	–0.0136**	–0.0054	–0.0224	–0.0087	–0.0110	–0.0043
	(–2.12)		(–2.13)		(–1.36)		(–1.54)	
$(M/B)_{Acq}$	0.0045	0.0018	0.0046	0.0018	0.0143	0.0055	0.0022	0.0009
	(1.36)		(1.39)		(1.62)		(0.60)	
$TangAssets_{Acq}$	–0.3957***	–0.1564	–0.3937***	–0.1556	–0.8238***	–0.3183	–0.3418***	–0.1355
	(–6.17)		(–6.14)		(–4.74)		(–4.86)	
$Cash_{Acq}$	–0.3246***	–0.1283	–0.3234**	–0.1278	–0.5654***	–0.2185	–0.3014***	–0.1195
	(–3.53)		(–3.51)		(–2.63)		(–2.92)	
ROA_{Acq}	–0.2682***	–0.1060	–0.2665**	–0.1053	–0.5326**	–0.2058	–0.1855	–0.0735
	(–2.56)		(–2.55)		(–1.97)		(–1.62)	
$SalesGth_{Acq}$	0.0143	0.0057	0.0139	0.0055	0.0062	0.0024	0.0129	0.0051
	(1.12)		(1.09)		(0.19)		(0.92)	
$DivLevel_{Acq}$	0.1707***	0.0675	0.1704***	0.0674	0.1570***	0.0607	0.1698***	0.0673
	(12.90)		(12.88)		(4.73)		(11.55)	

(*Continued*)

TABLE 5. (Continued)

	All firms				Family firms		Non–family firms	
Variables	Coef.	ME	Coef.	ME	Coef.	ME	Coef.	ME
C. Cross-industry diversification with leverage split into short- and long-term debt								
Country, industry, and year FE	yes		yes		yes		yes	
Pseudo R^2	0.0545		0.0547		0.0972		0.0545	
Observations	12,732		12,732		2,280		10,429	

Note: Panel A presents the results of probit regressions in which the dependent variable is CrossIndustry, a dummy variable identifying cross-industry deals (i.e., the variable takes the value of one if the acquirer and the target belong to different industries at 2-digit SIC code level, and zero otherwise). Panel B presents the results of probit regressions in which the dependent variable is CrossIndustryCash, a dummy variable identifying cross-industry deals which are mainly financed with cash (at least 50% of the deal financing is cash). Panel C equals Panel A with the difference that the variable Lev_{Acq} is split up into two components, namely the acquirer's short-term and long-term debt. Variable definitions are in appendix. For each variable, the test statistic is reported within brackets below the corresponding coefficient estimate. Test statistics are calculated based on Huber/White robust standard errors. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively. ME denotes marginal effects. All specification includes country, industry, and year fixed effects (FE).

shareholders is threatened (Faccio and Masulis, 2005; Caprio, Croci and Del Giudice, 2011). We, therefore, assume that the relation between "family owners that value control high (proxied by the firm's leverage)" and "cross-industry diversifying acquisitions" is stronger for cash-financed acquisitions. To test this conjecture, we replicate the analysis in Panel A of table 5 by using a sample of cash deals. The dependent variable is modified accordingly to identify only cross-industry deals for which the payment method is mainly cash (i.e., the cash portion is higher than 50%). The result of this analysis is reported in Panel B of table 5. The coefficient estimates of our variables of interest, $Lev_{Acq} \times FD_{Acq}$ for the full sample specification and Lev_{Acq} for the family firm sub-sample, are positive and statistically significant. Comparing the marginal effects of both variables with the corresponding marginal effects in Panel A, we can observe an increase by 13.6% (from 0.110 to 0.125) and 8.3% (from 0.156 to 0.169), respectively. Consistent with our intuition, the positive effect of leverage on diversifying acquisitions for family firms appears to be more pronounced in the subsample of cash transactions.

Croci, Doukas and Gonenc (2011) studied the relation between family-controlled firms and their debt maturity structure. They have shown that family firms are more likely to issue long-term than short-term debt. Credit markets perceive family blockholders as risk averse since most of the shareholders' wealth is invested in their own firms which discourages managerial risk taking. The lower risk incentives in family firms lead to lower agency costs of debt which, in turn, make long-term debt more affordable. To analyze the influence of the family blockholder's desire to retain control (proxied by the firm's leverage) on the propensity of cross-industry diversification in light of different debt maturities, we replicate Panel A of table 5 and modify the respective model specifications by splitting the acquirer's leverage ratio Lev_{Acq} into two components, namely the short-term debt $STdebt_{Acq}$ (representing the portion of debt payable within one year scaled by the firm's total assets) and long-term debt $LTdebt_{Acq}$ (corresponding to all interest-bearing financial obligations, excluding payments due within one year, divided by the firm's total assets). The estimation results are reported in Panel C of table 5. Consistent with the findings of Croci, Doukas and Gonenc (2011), we observe that the documented leverage effect on cross-industry diversifying acquisitions for family firms appears to be driven by long-term debt (reflected by the statistically significant positive coefficient for $LTdebt_{Acq}$ in the family firm

sub-sample). Family firms are known to be conservative and risk averse (see, for example, Zhou, Li and Svejnar, 2011, and Caprio, Croci and Del Giudice, 2011). These traits explain why family firms prefer long-term to short-term debt. Short-term debt leaves the firms exposed to the risk of unexpected interest rate increases and liquidity bottlenecks whereas long-term debt mitigates this risk exposure. Family firms with high long-term debt are more likely to be the ones with strongest control and diversification aspiration as they gain most from cross-industry diversifying acquisitions, due to the fact that these investments help stabilize the firm's cash flows reducing the likelihood of financial distress and lowering further the debt agency costs.

B. Additional results and robustness checks

There might be some concerns that the leverage ratio is changing over time and increasing shortly before an acquisition is planned. To mitigate this potential bias, we use a new variable of interest $AvgLev_{Acq}$ which represents the average of the acquirer's firm leverage over the last five years prior to the deal's announcement. The result is presented in Panel A of table 6 and confirms the robustness of our initial findings.

So far our regressions use a dummy variable identifying cross-industry bidders and therefore do not account for the intensity of the firm's M&A activity in the corresponding year. To control for acquisition intensity, the dependent variable in Panel B of table 6 is defined as the number of diversified deals divided by the total number of deals of a firm in a given year provided that the firm is undertaking a deal in that year. As the dependent variable takes values between 0 and 1, we rely on a tobit specification. Results are once again consistent with our hypothesis.

Having assessed the robustness of our main finding, we next analyze whether cross-industry deals are implemented by family firms at the expense of minority shareholders. To do so, we analyze wealth effects associated with acquisition decisions by regressing bidder's announcement cumulative abnormal returns (CARs) on firm leverage, a dummy variable identifying family firms, a dummy variable identifying cross-industry deals, their interactions, and additional control variables. Test statistics are calculated based on firm-clustered robust standard errors. In all regressions, the specification accounts for country, industry, and year dummies.

Table 7 reports the results of three different specifications. The first

TABLE 6. Propensity for cross-industry diversification - Robustness checks

	All firms				Family firms		Non-family firms	
Variables	Coef.	ME	Coef.	ME	Coef.	ME	Coef.	ME
A. Probit model								
$AvgLev_{Acq}$	0.1288*	0.0509	0.0805	0.0318	0.4884***	0.1904	0.0661	0.0262
	(1.83)		(1.06)		(2.75)		(0.85)	
FD_{Acq}	–0.0496*	–0.0196	–0.1241**	–0.0487				
	(–1.83)		(–2.41)					
$AvgLev_{Acq} \times FD_{Acq}$			0.3110*	0.1229				
			(1.71)					
$Ln(MV)_{Acq}$	–0.0001	–0.0001	–0.0004	–0.0002	–0.0039	–0.0015	–0.0006	–0.0003
	(–0.03)		(–0.07)		(–0.28)		(–0.11)	
$(M/B)_{Acq}$	0.0048*	0.0019	0.0049*	0.0019	0.0007	0.0003	0.0053*	0.0021
	(1.75)		(1.79)		(0.10)		(1.80)	
$TangAssets_{Acq}$	–0.4373***	–0.1729	–0.4340***	–0.1716	–0.8559***	–0.3336	–0.3656***	–0.1448
	(–8.36)		(–8.29)		(–6.18)		(–6.38)	
$Cash_{Acq}$	–0.3084***	–0.1219	–0.3050***	–0.1206	–0.3786**	–0.1476	–0.2881***	–0.1141
	(–4.03)		(–3.99)		(–2.08)		(–3.39)	
ROA_{Acq}	–0.3639***	–0.1439	–0.3606***	–0.1426	–0.3571	–0.1392	–0.3477***	–0.1377
	(–4.30)		(–4.26)		(–1.62)		(–3.76)	
	0.0146	0.0057	0.0146	0.0058	0.0098	0.0038	0.0138	0.0055
$SalesGth_{Acq}$	(1.41)		(1.42)		(0.35)		(1.24)	

(*Continued*)

TABLE 6. (Continued)

	All firms				Family firms		Non–family firms	
Variables	Coef.	ME	Coef.	ME	Coef.	ME	Coef.	ME
A. Probit model								
$DivLevel_{Acq}$	0.1295***	0.0512	0.1292***	0.0511	0.1066***	0.0415	0.1347***	0.0534
	(11.18)		(11.15)		(3.60)		(10.55)	
Country, industry, and year FE	yes		yes		yes		yes	
Pseudo R^2	0.0494		0.0495		0.0767		0.0508	
Observations	17,885		17,885		3,037		14,828	
B. Tobit model								
Lev_{Acq}	0.1775		0.0747		0.6050***		0.0758	
	(1.37)		(0.54)		(7.52)		(0.54)	
FD_{Acq}	–0.0644		–0.1892**					
	(–1.31)		(–2.26)					
$Lev_{Acq} \times FD_{Acq}$			0.5469*					
			(1.85)					
$Ln(MV)_{Acq}$	0.0050		0.0051		0.0080***		0.0045	
	(0.53)		(0.54)		(3.01)		(0.44)	
$(M/B)_{Acq}$	0.0084		0.0086		0.0123***		0.0076	
	(1.48)		(1.51)		(3.07)		(1.27)	
$TangAssets_{Acq}$	–0.6540***		–0.6459***		–0.9649***		–0.5969***	
	(–6.57)		(–6.48)		(–15.27)		(–5.60)	

(*Continued*)

TABLE 6. (Continued)

	All firms				Family firms		Non–family firms	
Variables	Coef.	ME	Coef.	ME	Coef.	ME	Coef.	ME
B. Tobit model								
$Cash_{Acq}$	–0.6028***		–0.5971***		–0.8000***		–0.5551***	
	(–4.17)		(–4.12)		(–9.59)		(–3.50)	
ROA_{Acq}	–0.4147***		–0.4113***		–0.2629***		–0.4046**	
	(–2.76)		(–2.74)		(–2.61)		(–2.53)	
$SalesGth_{Acq}$	0.0555***		0.0556***		0.0767***		0.0489**	
	(2.62)		(2.63)		(9.38)		(2.15)	
$DivLevel_{Acq}$	0.1925***		0.1920***		0.1345***		0.2031***	
	(9.33)		(9.30)		(9.10)		(9.13)	
Country, industry, and year FE	yes		yes		yes		yes	
Pseudo R^2	0.0355		0.0356		0.0525		0.0368	
Observations	10,431		10,431		1,953		8,478	

Note: Panel A presents the results of probit regressions in which the dependent variable is a dummy variable identifying cross-industry deals (i.e., the variable takes the value of one if the acquirer and the target belong to different industries at 2-digit SIC code level, and zero otherwise). $AvgLev_{Acq}$ is the independent variable of interest and corresponds to the average of the acquirer's firm leverage over the last 5 years prior to the announcement of the deal. Panel B presents the results of tobit models in which the dependent variable is defined as the number of diversified deals divided by the total number of deals of a firm in a given year provided that the firm is undertaking a deal in that year. Variable definitions are in appendix. Test statistics are calculated based on Huber/White robust standard errors. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively. ME denotes marginal effects. All specification includes country, industry, and year fixed effects (FE).

TABLE 7. Acquirer CAR regressions

Variables	(1)	(2)	(3)
Lev_{Acq}	0.0019	0.0048	0.0049
	(0.35)	(0.74)	(0.76)
FD_{Acq}	0.0017	0.0050*	0.0052*
	(1.06)	(1.76)	(1.90)
$Lev_{Acq} \times FD_{Acq}$		–0.0138	–0.0108
		(–1.24)	(–0.87)
CrossIndustry	–0.0014	–0.0014	–0.0010
	(–1.21)	(–1.19)	(–0.79)
CrossIndustry × Lev_{Acq} × FD_{Acq}			–0.0088
			(–0.82)
$(M/B)_{Acq}$	–0.0006***	–0.0006***	–0.0006***
	(–2.95)	(–2.97)	(–2.96)
Stock	–0.0115***	–0.0115***	–0.0115***
	(–2.77)	(–2.78)	(–2.77)
Ln (Deal Size)	–0.0019***	–0.0019***	–0.0019***
	(–3.98)	(–3.98)	(–3.97)
$RelSize_{Acq}$	0.0194***	0.0195***	0.0195***
	(4.80)	(4.79)	(4.79)
Control transactions	0.0040***	0.0040***	0.0040***
	(2.71)	(2.72)	(2.72)
$Unlisted_{Tar}$	0.0031**	0.0031**	0.0031**
	(2.15)	(2.13)	(2.12)
$Unlisted_{Tar}$ × Stock	0.0247***	0.0247***	0.0247***
	(3.55)	(3.55)	(3.55)
IntraBorder	–0.0002	–0.0002	–0.0002
	(–0.18)	(–0.18)	(–0.19)
Country, industry, and year FE	yes	yes	yes
Adj. R^2	0.0221	0.0223	0.0223
F-Statistic	10.12	9.29	8.72
Observations	18,494	18,494	18,494

Note: The table presents the results of ordinary least squares regressions. The dependent variable is the acquirer's announcement 3-day abnormal returns (CAR_{Acq}) around the deal announcement date. Variable definitions are in appendix. All ratio variables are winsorized at 0.01 and 0.99. Test statistics are calculated based on firm-clustered robust standard errors and statistical significance is denoted by ***, **, * for the 1%, 5% and 10% levels, respectively. For each variable, the t-statistic is reported within brackets below the corresponding coefficient estimate. All specification includes country, industry, and year fixed effects (FE).

column reports on the baseline specification (i.e., without the interaction variables). Once controlled for firm and deal characteristics, acquirer abnormal returns are not statistically different between family and non-family firms. This appears to be inconsistent with previous literature which reports a positive effect of family ownership on acquirer abnormal returns (see, e.g., Ben-Amar and Andre, 2006; Basu, Dimitrova and Paeglis, 2009; Sraer and Thesmar, 2007; Bouzgarrou and Navatte, 2013).

In column 2, we augment the baseline specification with the variable which interacts bidder leverage with family dummy ($Lev_{Acq} \times FD_{Acq}$). The coefficient estimate of the interaction variable is negative without being statistically significant at conventional levels. This suggests that the leverage ratio does not affect acquirer CARs in family firms. Interestingly, the coefficient estimate of family dummy, which captures the effect of family ownership for a firm with zero debt on acquirer CARs, is positive and statistically significant at the 10% level in column 2. This indicates that in comparison to non-family firms, family firms with zero debt earn 50 basis points higher abnormal returns. The market reaction associated with M&A decisions appears to decrease with increasing leverage for family firms, but this effect is statistically insignificant at conventional levels. Most importantly, in column 3, we augment the specification in column 2 by adding the triple interaction variable ($CrossIndustry \times Lev_{Acq} \times FD_{Acq}$) in order to assess whether cross-industry diversifications in family firms are at the expense of minority shareholders or not. Interestingly, the triple interaction variable is not statistically significant. This indicates that family firms with blockholders that value control high are not doing cross-industry M&A deals at the expense of their minority shareholders.

Our coefficient estimates for control variables in table 7 are largely consistent with prior literature (see Betton, Eckbo and Thorburn (2008) for a review). We find particularly that stock payment, the bidder's market-to-book ratio and deal size are negatively associated with announcement returns, while relative size, the acquisition of private targets (unlisted target), and control transactions are positively associated with bidder abnormal returns.

V. Conclusions

Family blockholders that value control high are reluctant to relinquish it and hence prefer non-diluting securities such as debt to fund new investments (Ellul, 2008; Croci, Doukas and Gonenc, 2011). Using

leverage as a proxy for the family owner's attitude toward control, this study examines the relation between family ownership and acquisition activity.

Relying on a large sample of European M&A deals announced during the period 1990-2013, we study the determinants of the propensity to undertake cross-industry M&A transactions. Consistent with previous literature, we first show that family firms do on average less diversifying acquisitions in comparison to non-family firms. However, family firms with high control motives, captured by the firm's leverage ratio, tend to make more cross-industry acquisitions as this allows the family owners to effectively diversify their wealth without reducing their voting power. In addition, we analyze the value effect associated with the firm's M&A decision. Our result indicates that diversifying acquisitions undertaken by family firms that value control high are not implemented at the expense of minority shareholders.

This study contributes to literature by providing evidence that the attitude toward control in family firms shapes substantially the firm's behavior in the M&A market. In addition, our result corroborates the implication of Ellul (2008) that high leverage in family firms signals control motives of family blockholders.

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Appendix. Variable definitions

CrossIndustry	Dummy variable equal to 1 if the acquirer and target firm belong to different industries (at 2-digit SIC code level), and 0 otherwise.
CrossIndustryCash	Dummy variable equal to 1 if the acquirer and target firm belong to different industries (at 2-digit SIC code level) and if the acquirer uses mainly cash (≥ 50%) to finance the deal, and 0 otherwise.
CAR[-1;+1]	Cumulative abnormal return of the acquirer's stock against the local market index (from a Beta-one model) over a 3-day event window around deal announcement (i.e., day 0).
Lev_{Acq}	Book value of debt (of acquiring firm) / Total assets (of acquiring firm); source: Worldscope [WC03255/WC02999] (both in local currency).
FD_{Acq}	Dummy variable equal to 1 if the ultimate owner of the acquiring company represents "one or more named individuals or families" according to the database Amadeus, and 0 otherwise (at 25% control threshold level).
Stock	Dummy variable equal to 1 for deals which are purely stock-financed, and 0 otherwise.
$Ln(MV_{Acq})$	Natural logarithm of the acquirer's equity market value; source: Worldscope [WC07210 for equity market value in U$].
$RelSize_{Acq}$	Deal value divided by equity market value (of the acquiring firm). Deal value is from SDC Platinum and equity market value from Worldscope [WC07210] (both in U$).
$(M/B)_{Acq}$	Market value of equity divided by book value of equity (both of the acquiring firm); source: Worldscope [WC07210/WC07220] (both in U$).
$TangAssets_{Acq}$	Tangible assets divided by total assets (both of the acquiring firm); source: Worldscope [WC02501/WC02999] (both in local currency).
$Cash_{Acq}$	Cash and tradable securities divided by total assets (both of the acquiring firm); source: Worldscope [WC02001/WC02999] (both in local currency).
ROA_{Acq}	EBITDA divided by total assets (both of the acquiring firm); source: Worldscope [WC18198/WC02999] (both in local currency).
$SalesGth_{Acq}$	Yearly growth rate of total sales (of the acquiring firm); source: Worldscope [WC07240 for total sales in U$].
$Unlisted_{Tar}$	Dummy variable equal to 1 if target firm is not listed, and 0 otherwise.
IntraBorder	Dummy variable equal to 1 if the bidding and target firm are headquartered in the same country, and 0 otherwise.
$DivLevel_{Acq}$	Number of industries (at 2-digit SIC code level) in which the acquirer operates as per year-end prior to deal announcement.

(*Continued*)

Appendix. (Continued)

$STdebt_{Acq}$	Book value of short-term debt (of acquiring firm) / Total assets (of acquiring firm); calculated as the difference between LevAcq and $LTdebt_{Acq}$.
$LTdebt_{Acq}$	Book value of long-term debt (of acquiring firm) / Total assets (of acquiring firm); source: Worldscope [WC03251/WC02999] (both in local currency).
Control transactions	Dummy variable equal to 1 if the transaction provides the acquirer with a majority stake in the target firm, and 0 otherwise.
Ln (Deal Size)	Natural logarithm of the deal size in U$.

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